
Anna Vallye

Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY

2011
ABSTRACT


Anna Vallye

Using the American careers of Walter Gropius and Gyorgy Kepes as case studies, this dissertation addresses the intersection of art and architecture with the reciprocal politics of knowledge production and state formation in the mid-twentieth century United States. Inasmuch as the careers of Gropius and Kepes—wartime émigrés from Germany and Hungary, respectively—retrace the narrative of importation and assimilation linking interwar European modernism and its post-World War Two American legacies, this project also implicates that larger narrative and its constructions. Avant-garde practices in the Weimar Republic orbit advanced a model of design as a practice of knowledge, ideation or “expertise,” which found fertile ground in the new political conditions of postwar America. The intersection of design practices with practices of knowledge production reconfigured design from material craftsmanship or artistic invention to a fluid set of competences and techniques oriented towards establishing new cultural, political, and economic agency for the designer. The constitution of this agency and its limits is the central historical and conceptual problem of this dissertation.

From their strategic positions on architectural faculties at Harvard University and the Massachusetts Institute of Technology (MIT), and in their multiple roles as administrators, educators, writers, and designers, Gropius and Kepes both responded to and shaped several emergent discourses on knowledge that traversed the academy, the federal government, the design professions, and the wider political and intellectual life of the nation: the discourse of
economic “stimulus” that posited the intersection of knowledge and legislative practices and their combined agency in the social body; the discourse of planning that charted the intervention of the “managed economy” regime across the nation’s urban fabric; the discourse of the creative mind that posited knowledge as a key economic and political resource; and finally, the discourse of instrumentality that defined the political agency of knowledge-production within the postwar research university. Among the events leading Gropius and Kepes to confront those discourses, as chronicled in this dissertation, were the wartime administrative reorganization of the Harvard Graduate School of Design, the establishment of the Carpenter Center for the Visual Arts at Harvard and the Center for Advanced Visual Studies at MIT, and postwar curricular reform at MIT at large.

In each of those instances, art and architecture emulated the disciplinary practices of knowledge production: research, education, methodology, collaboration. But more importantly, the disciplines of design adopted and elaborated in their own terms the ends of those organized knowledge practices in the promotion of unpredictability and innovation, necessitating in turn the curbing of controls and the circumscription of agency. The pursuit of this mode of practice, characterized by internal delimitation, situated design within an emergent political regime dedicated to the maintenance of socio-economic freedoms, articulated in the United States within a newly consolidated and organized federal government institution, and accompanied by new legislative and ideological articulations of national identity.
TABLE OF CONTENTS

Acknowledgments iii

List of Illustrations v

Introduction 1

Addendum. “A Figure Covered with Labels”: The Reception of Gropius’s American Work 31

A.1 Cipher 33

A.2 Limit 44

A.3 Crisis 50

1 The Politics of Practice in the 1920s 57

1.1 Strategies of Organization 62

1.2 Intellectual Labor 70

1.3 Hungarian Excursus 82

1.4 The “Man of Many Functions” 90

2 The Method of Approach: Gropius and the New Deal Discourse on the National Economy 99

2.1 Economic Stimulus 103

2.2 Architectural Method 112

2.3 “Method” at the Harvard Graduate School of Design 126

3 The Planning Function: Wartime Curricular Reforms at Harvard 138

3.1 Architecture of the “Administrative Function” 141
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>The “Physical Planning” Problem at the GSD</td>
<td>148</td>
</tr>
<tr>
<td>3.3</td>
<td>The 1942-1943 Curriculum Reform</td>
<td>167</td>
</tr>
<tr>
<td>3.4</td>
<td>The Collaboration between Gropius and Martin Wagner</td>
<td>178</td>
</tr>
<tr>
<td>4</td>
<td>Vision’s Value for Democracy: Kepes and the Education of the Creative Intellect</td>
<td>196</td>
</tr>
<tr>
<td>4.1</td>
<td>Morale</td>
<td>206</td>
</tr>
<tr>
<td>4.2</td>
<td>Creative Intelligence</td>
<td>225</td>
</tr>
<tr>
<td>4.3</td>
<td>The Citizen’s Mind</td>
<td>249</td>
</tr>
<tr>
<td>5</td>
<td>The Middleman: Kepes at M.I.T.</td>
<td>268</td>
</tr>
<tr>
<td>5.1</td>
<td>Visual Design for the M.I.T. Architect</td>
<td>274</td>
</tr>
<tr>
<td>5.2</td>
<td>Instrumental Collectivities of Knowledge</td>
<td>288</td>
</tr>
<tr>
<td>Conclusion</td>
<td></td>
<td>311</td>
</tr>
<tr>
<td>Images</td>
<td></td>
<td>318</td>
</tr>
<tr>
<td>Bibliography</td>
<td></td>
<td>389</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

In the long maturation of this project, I have incurred many debts. The Columbia University Graduate School of Arts and Sciences, and the faculties of the Department of Art History and Archaeology and the Graduate School of Architecture, Planning, and Preservation, have provided me with crucial support and many extraordinary opportunities to learn, teach, and share my work.

My cardinal debt is to Barry Bergdoll and Reinhold Martin, who coached me through many unpolished drafts, and helped stretch the limits of my insight. This study is an occupation of the territory and a reflection in the lens that they have shaped for me over the years. I am grateful to the faculty members of my defense committee, Alexander Alberro, Jean-Louis Cohen, and Felicity Scott, for the time and attention they devoted to the manuscript and for their incisive critiques.

I owe the first and indelible outline of my scholarly interests and intellectual makeup to my undergraduate professors Molly Nesbit and Nicholas Adams.

Among those who have generously shared with me their knowledge and advice, unpublished drafts of their work, and reactions to versions of mine, I am especially thankful to Joan Ockman, Jonathan Crary, John Rajchman, Felicity Scott, Vittoria Di Palma, Mary McLeod, Jean-Louis Cohen, Lucia Allais, Arindam Dutta, Elizabeth Finch, Jill Pearlman, David Kaiser, Robert Beauregard, Scott Colman, Ines Katenhusen, Susan Jarosi, Elizabeth Kessler, Ute Meta Bauer, and Keiko Prince.
For their example, encouragement, commiseration, and hours of inspiring debate, I thank my friends Nadja Rottner, Seth McCormick, William Kaizen, Vered Maimon, Beth Hinderliter, Abigail Susik, Kristin Romberg, Ricky Anderson, John Harwood, Karen Kurczynski, Alena Williams, Rachel Churner, and Jeffrey Saletnik.

My research was considerably eased and enlightened by the expert and cordial assistance of the staff of multiple archival repositories. I am especially grateful to Mary Daniels and Ines Zalduendo of the Harvard University Graduate School of Design Frances Loeb Library, the staff of the Harvard University Archives, Laura Muir Davies of the Harvard University Busch-Reisinger Museum, the staff of the Harvard University Houghton Library, Peter Cohn of the Harvard University Rotch Library of Architecture & Planning, Nora Murphy and the staff of the MIT Institute Archives and Special Collections, Larissa Harris and Meg Rotzel of the Center for Advanced Visual Studies, and the staff of the Smithsonian Institution Archives of American Art.

My thanks to Julie Kepes Stone and the family of Gyorgy Kepes for granting permission to reproduce material from the Gyorgy Kepes Papers, held in the Archives of American Art, Smithsonian Institution, Washington, D.C. Some of the research that appears in Chapter Four has been published in the essay “The Strategic Universality of trans/formation, 1950-1952,” Grey Room 35 (Spring 2009): 28–57. I thank the editors and MIT Press for granting me permission to reproduce it here.

My family has been impressively patient and unwaveringly proud of me, even during those times when I could not have felt less equal to their confidence. In the most literal sense possible, I could not have completed this project without my husband Philip Ryan, who has known me longer than I have known it, and reminds me of that every day.
LIST OF ILLUSTRATIONS


4. The Pan Am Building in its urban context.


7. Laszlo Moholy-Nagy, *Composition (Glass Architecture)*, 1922-23, oil on canvas, 95 x 75 cm.


10. Lajos Kassák, *Pictorial Architecture*, 1922, oil on cardboard, 28 x 20.5 cm.


20. Levitt & Sons defense housing community, Norfolk, VA, ca. 1941; Fort Leonard Wood, MI defense housing, MI, 1941.

21. Survey responses from “Architects and Engineers at Work,” *Architectural Record* (August 1942), featuring increases in “added services,” and military and government work.


25. Advertisements from *New Pencil Points* (July 1943) and *The Architectural Forum* (December 1942) drawing analogies between military and architectural “strategy.”


28. Regional Planning Association of America (RPAA) model community (plan), Clarence Stein and Henry Wright, Radburn, NJ, 1928.

29. Walter Gropius, Hirsch system model for the *Wachsende Haus* exhibition, organized by Martin Wagner, 1932; Walter Gropius, “A post-war ‘growing and shrinking’
prefabricated family dwelling,” based on the Packaged House system by Konrad Wachsmann and Walter Gropius, 1945.


38. Sequence showing industrial adaptation of hand sculpture made in the School of Design rehabilitation class, from “Better than Before,” *Technology Review* (November 1943).


43. A “distorted room” installation from the viewing point, reconstruction, ca. 1952.

44. Edwin H. Blashfield, *Good and Bad Uses of Science*, mural, south wall panel, Morss Hall, Walker Memorial, MIT, 1930.


47. Illustrations from “Kepes Looks at Light; Sees Spots,” *Interiors* 110 (January 1951).


50. Gyorgy Kepes, notes on *Light as a Creative Medium*, n.d.

51. Gyorgy Kepes, notes on *Light as a Creative Medium*, n.d.


58. 30-caliber bullet impacting a Plexiglas bar, from “Strobe Probe,” Technology Review (July-August 1968); model projectile in flight, from Gyorgy Kepes, New Landscape in Art and in Science (1956).

59. Two-page spread from Gyorgy Kepes, The New Landscape in Art and Science (1956) showing the collage strategy of juxtaposing text and images from disparate sources.


63. CAVS interior photographs, ca. 1967.


INTRODUCTION

In the 1930s, a number of European artists and designers, many of them linked to the Bauhaus, relocated to the United States. Settling in their adoptive country, they proceeded to leave a profound mark on the development of American art and architecture in the immediate postwar period. Walter Gropius, Mies van der Rohe, Josef Albers, Laszlo Moholy-Nagy, Gyorgy Kepes, Marcel Breuer, Herbert Bayer, and others, shared an aesthetic, and a commitment to experimental approaches defined, however loosely, as the Bauhaus “idea.”¹ They also shared the experience of working under the conditions of profound social, political, and economic destabilization that defined the 1910s and 1920s in Germany and Eastern Europe—conditions that prompted a wholesale reevaluation of the disciplinary practice and professional identity of the artist and designer. Thus, design innovation and disciplinary dislocation form the two sides of a complex cultural legacy born across the transatlantic and the midcentury divides. The former

has attracted extensive scholarly attention—the latter has not been addressed as such, and will be the subject of this study.

The history of postwar design is commonly narrated in relation to the cultural history of postwar America, focused on the emergence of the society of consumption and the ideological imperialism of the Pax Americana. Such narratives address the postwar commodification of art and architecture and the cultural and ideological meanings carried by artifacts in this context. Shifting focus from design artifacts to design practices and the social roles assumed by designers illuminates another historical site: that of the political organization and distribution of the social sphere, with the relative possibilities and constraints in social agency that carries.

It is true that relocation to America was for many émigré designers a return to normalcy in the conditions of practice. In the overall political stability and postwar economic prosperity of their adoptive country, many experienced relative institutional and professional security. The majority of the designers and artists associated in one way or another with the Bauhaus pursued the conventional model of practice in America, whether that of an independent artist or the practicing architect and commercial designer. There were, however, two significant exceptions to that general trend.

From his arrival in the United States in 1937, to 1951 when he fully devoted his time to The Architects Collaborative (TAC), an architectural practice started with six of his former students, Walter Gropius aggressively entered the discursive arena of American design, functioning as an ideologue and promoter; while at the same time he actively engaged in, and in fact tried to dominate, academic policy and curricular philosophy as head of the architecture department at Harvard University Graduate School of Design (GSD). This was a period during which Gropius built or designed very little, but nonetheless became established as the avatar of
mainstream modern architecture in America as a “Bauhaus legacy.” On the one hand, Gropius’s withdrawal from conventional architectural practice during this time may be seen as in some measure enforced, or at least it was a matter about which he voiced some conflict. Before TAC, he engaged in two short-lived attempts to establish a working design practice—first with Marcel Breuer and later with Konrad Wachsmann. In 1959, he would reflect in retrospect to James Marston Fitch that, while focusing on other pursuits, “in his heart, he wanted to be a designer.” On the other hand, Gropius’s withdrawal from architectural work during the 1930s and 1940s was accompanied by an intense engagement with the disciplinary and institutional issues of American architectural practice as a whole, motivated by the necessity to define a program of professional training at Harvard, as well as to establish himself in a new professional context. It was a project for which the founder and director of an educational institution such as the Bauhaus was perhaps especially well-suited. From that perspective, Gropius’s work in America continued a profound engagement with the organization and ideological articulation of practice started in Weimar Germany.

Arriving in Chicago the same year as Gropius did in Cambridge, and over the span of a career that would subsequently take him to the Massachusetts Institute of Technology School of Architecture, Gyorgy Kepes elaborated—and embodied—an expanded and differentiated model of practice rooted in his debts to the Hungarian avant-gardes of the 1910s and 1920s, as well as to his long-time colleague and mentor Laszlo Moholy-Nagy. Kepes painted, created several art installations, and engaged in various forms of commercial design—but his most extensive and

---


important project by far was the organization of a forum for discourse and practice between the visual arts and the sciences, first through a series of publications and later through the establishment in 1967 of the Center for Advanced Visual Studies (CAVS) at MIT, a collaborative work community for artists and scientists. Having followed Moholy-Nagy, whom he met in Berlin in 1930, to Chicago, Kepes taught at the New Bauhaus until 1944. The MIT School of Architecture hired him the following year to teach the Bauhaus-inspired program he had worked out in Chicago as an adjunct to the professional training of the architecture student.4 Perhaps because of the relatively autonomous position he occupied with respect to design training, Kepes never devoted very much time to professional or disciplinary issues. His life’s work was motivated, however, by what he understood as the need to establish the social relevance and redefine the social role of the artist and designer. Thus, although he belonged to a younger generation than most of the Weimar-era émigrés in America, Kepes explored their legacy of innovative practice most fully.

This dissertation will examine the interrogation of practice in the American work of Gropius and Kepes. Rather than advance an overarching thesis about the careers of the two figures, I trace a series of pivotal moments from the 1930s to the 1960s when each tried to define design practice in response to new pressure points situated outside the professions and the discourses of art and design. Each of the historical moments traced here involves the intersection, in one way or another, between the discourses and practices of art and design and those conducted in a number of contemporary social sciences and related organized fields of knowledge—mainly, economics, public administration, psychology, and education. In each of those confrontations, therefore, the expansion of design practice at issue was, specifically, its

4 For biographical facts, see Elizabeth Finch, “Languages of Vision: Gyorgy Kepes and the “New Landscape” of Art and Science” (Ph.D. diss., The City University of New York, 2005).
construction as a practice of knowledge, both aligned with the social sciences and competing against them for agency.

For Gropius, arriving in Cambridge in 1937 to confront an architectural profession in the grips of the Depression, and facing the problem of devising a curriculum that would prepare the student to confront current professional challenges, economic conditions were an overriding area of concern and determinant of action. But more than concrete issues of economic expediency, it was a new conception of the economic—as an area of the nation-state subject to intervention and control—that emerged as the key referent of discourses on design practice during the 1930s. In the discourse of “method”—which sought to represent design as objective, quasi-scientific procedure—architectural practices claimed a new mode of social agency parallel to that articulated at the time by the discourses of economic theory. Gropius arrived in America at a key moment in this development, and contributed to it both discursively and programmatically, through his work at the GSD. In the 1940s, those practices were supplanted by questions of planning, marking the emergence of the discipline of public administration as a new model for the relationship between organized knowledge and social agency. Architectural discourses increasingly turned around a notion of the “planning function” that oriented conceptions of architectural work as organization or management. This confrontation between design practice and the practices of public administration was played out through important shifts in GSD policy during the early 1940s, as well as in several projects carried out by Gropius together with his GSD colleague Martin Wagner.

The years during and immediately after the war were marked by the ascendancy of discourses on psychology and education. Although Gropius engaged in issues arising out of those discourses, it was Kepes who brought them to the forefront of his own agenda. During his
years in Chicago, he developed the idea of design as a perceptual technology for the training of a particular kind of socially-oriented subjectivity. In the postwar period, the social task thus outlined for design evolved to encompass the problem of training the creative mind, articulated within the discourses of general education. Kepes’s participation in this wider project continued in relation to the epistemological and productive structures of the postwar scientific establishment he encountered in Cambridge. It was here, too, that the problem of the social agency of organized knowledge took on a programmatic, and increasingly political, significance. Kepes both responded to and made important contributions to pedagogical and research initiatives at MIT, which focused on the cooperative organization of knowledge production and the definition and delimitation of its social instrumentality.

Chronologically, the discussion of Kepes in this dissertation picks up where the discussion of Gropius leaves off, in the midst of America’s wartime mobilization, to engage further aspects of a larger history of which the two figures become, ultimately, disparate case studies. That history charts the reverberations in the design field of the emergence of knowledge production, concentrated primarily but not exclusively in the natural and social sciences, as a pivotal strategic resource within the politics of the state. The series of efforts described here to explore design as a practice of knowledge coincided with the emergence in America of a newly consolidated and organized federal government institution, accompanied by new legislative and ideological articulations of national identity. The historical relationship between milestones of state formation at mid-century and moments of exploration in design as a practice of knowledge is the larger problem posed by this dissertation.
The concept of knowledge as a domain open to the play of political forces and relationships of power is classically associated with the 1960s and 1970s, when it was advanced by a diverse and growing number of American and Western European intellectuals and social theorists, against the background of university protests. Although the discourse on the politics of knowledge ranged widely, its primary historiographic legacy is focused in the notion of “postindustrial society.” It describes the advent, in the middle of the twentieth century, of a new period of social development, driven by fundamental shifts in technology and the economic structure. The basic characteristics of postindustrial society include the eclipse of manufacturing by the service sector—encompassing such areas as finance, recreation, research, education, and government—as the primary economic engine, the preponderance of administrative and professional occupations, and the emergence of computer-based or intellectual technologies. Such developments, wrote the leading American postindustrial theorist Daniel Bell, signaled the emergence of “theoretical knowledge” as “the strategic resource [and] axial principle” of society, and the “intellectual institutions where theoretical knowledge is codified and enriched” as its “axial structures.”

It is also in the 1960s and 1970s—at the tail end of this dissertation’s chronological range—that one finds the widespread opening of art and design to strategic practices of knowledge as identified by postindustrial theory: traceable, for example, in the engagement of both artists and architects with information technologies and communication systems; the

---

5 The range of contemporaneous discourses on the relationship between knowledge and politics is incompletely encompassed by the philosophical reflections of Michel Foucault, Hannah Arendt, Herbert Marcuse, and Jurgen Habermas; the historical and sociological studies of scientific communities, such as those by Thomas Kuhn and Don K. Price; the politically engaged critiques of the academy by, e.g., Noam Chomsky and Sheldon S. Wolin. Among the key writings on the postindustrial concept are those by Daniel Bell, Alain Touraine, Jacques Ellul, Ernst Mandel, and David Harvey.

redefinition of artistic practice as intellectual production in conceptual art; the emergence of such initiatives as the Institute for Architecture and Urban Studies in New York City and Emilio Ambasz’s Universitas project at the Museum of Modern Art, positioning the designer as intellectual. An emblematic expression of that shift is Peter Cook’s statement in 1970, on behalf of the new vanguard, that “the future of architecture lies in the brain.” In that sense, the postindustrial hypothesis is itself historically linked to the experimental art and design practices of the ‘60s and ‘70s. Because I discuss a different set of practices, I approach the model of the postindustrial society at some distance. The history I outline does not trace the advent of knowledge as the “axial principle” of society, but rather analyzes several moments when the problem of knowledge—its institutional organization, structuring principles, and social agency—arose as a question of strategic significance in the construction of the nation state. Rather than addressing social or cultural patterns, therefore, this history deals with moments of political articulation, understood as an interface between “society” and the “state.”

Writing in 1963, the political sociologist Seymour Martin Lipset posited the United States as the “first new nation”—the first constitutional state founded where none existed prior, through a break with colonial rule rather than through regime change—which continued to hold the moment of foundation at the core of national identity. A federation of states under a constitution whose scope and powers were contested from the start, America lacked a stable tradition of discourses and institutional structures of the nation state even into the twentieth

---


8 The relationship between the “state” as a centralized juridical apparatus and “society” or “civil society” as the complex of social and economic institutions outside of the state is constitutive of the concept of the political in modern political philosophy.

century. To a remarkable extent, the early twentieth century American state was new, in an ongoing and unfinished process of construction. Writers of the progressive era theorized democracy itself as a process or a project, rather than an established political system. At the same time, they linked conceptions of political agency directly to state construction at the national level; tying it, furthermore, to a modern managerial notion of governance. “The idea of the state,” wrote Woodrow Wilson in 1912, “is the conscience of administration.”

But it was the entirely unprecedented expansion of the federal government’s administrative body in the New Deal that constituted, in the words of Alan Brinkley, the “phenomenon that created and legitimized much of the modern American state.” As a political process unfolding in the midst of economic collapse, it was distinguished by the articulation of conflict between the atomizing forces of capital and the socializing functions of the state—the establishment of the nation-state as a commonwealth. The burgeoning state was, thus, a complex that tightly bound conceptions of collective political agency, the elaboration of a centralized governing apparatus, and ideologies of the nation. It was this complex that defined America at mid-century, a new state within a nation long established. In 1966, Bell wrote that

only within recent decades has the United States passed from being a nation to becoming a national society in which there is not only a coherent national authority, but where the different sectors of the society, economy, polity, and culture are bound together in a cohesive way and where crucial political and economic decisions are now made at a “center.”

The Second World War further advanced this process of state formation. But what is remarkable is its novelty, and contingency, which continued to accompany the nation into its Cold War

---


geopolitical hegemony. In the immediate postwar period, Lipset was only one among an
“extraordinary” number of writers attempting to come to terms with the still unfolding questions
of national identity and social structure.13

In light of this history, it is notable that the American discourse on the postindustrial, as
distinguished from its European counterparts, was preoccupied with projecting public or
communal forms of organization at the level of the national society.14 In Bell’s writings, the
primary referent of that organization was the welfare state, occupied with the generation and
application of knowledge to problems of social governance and planning. He defined the
postindustrial watershed as one in which “the conscious direction of social change [has become
the purview of] the federal government.”15 The centrality of knowledge in the new regime Bell
sought to describe, therefore, derived from its link to the “sociologizing”—as opposed to the
“economizing”—modes of decision attendant to the newly centralized system of political
organization, which bring to the fore strategically such “public” functions and resources as
education, research, social services, or environmental quality.16 It is specifically in relation to
those modes of political decision and the field of social agency they circumscribe that the
developing complex of the social sciences was disposed, defining the postindustrial society, in
Bell’s terms, as “one in which the intellectual is predominant.”17 Therefore, Bell’s formula must

13 As the best known of numerous examples, Lipset cites Vance Packard, The Status Seekers (1959); C. Wright
Crowd (1950); R.L. Bruckberger, Image of America (1959); Max Lerner, America as a Civilization (1957); and Eric


15 Bell, Reforming of General Education, 88.


17 Daniel Bell, “The Post-Industrial Society” in Eli Ginzberg, ed., Technology and Social Change (New York:
Columbia University Press, 1964), 44. Brick suggests the growth of the social sciences—sociology, anthropology,
be read against the grain of its historical context to correct for the techno-economic bias implied in the very terminology of “postindustrial” periodization. Rather than linking the political problem of knowledge to new phases of advanced technological or socio-economic development, the history plotted in this dissertation traces the symbiotic relationship between knowledge production and the formation of a modern nation-state in America. As will be seen later, this also implies that the periodizing historiography of postindustrial analyses must be rethought in this context.

For the moment, however, it remains to establish the mode of social agency opened up for practices of knowledge within the politics of the state. This will also be precisely the mode of agency sought in every bid outlined in this dissertation to establish design as a practice of knowledge; and the corresponding strategies will, in turn, rely on defining design as a practice that corresponds to those patterns of agency.

The idea of technocracy is still perhaps the standard model for envisioning the relationship between knowledge and the state. Bell himself invoked the *locus classicus* of and psychology—and their new professional standing in the academy at midcentury as the broader context for the rise of postindustrial theory. See Brick, “Optimism of the Mind,” 360. The natural and social sciences are the clear referent to Bell’s concept of “knowledge.” As is typical at the time, he defines the “literary intellectual” as a category distinct from—and even opposed to—the “technical intellectual.” Bell poses the relationship between the two as a problem, but it is not one to which he devotes much attention. See Bell, *Coming of Post-Industrial Society*, 43, 214.

Bell does not see his own position as technological or economic determinism. “The concept of the post-industrial society,” he writes, “deals primarily with changes in the social structure, the way in which the economy is being transformed and the occupational system reworked, and with the new relations between theory and empiricism, particularly science and technology. … I do not claim that these changes in social structure determine corresponding changes in the polity or the culture. Rather, the changes in social structure pose questions for the rest of society… .” Bell, *Coming of Post-Industrial Society*, 13. Emphases in the original.

Although the term “technocracy” itself was not coined until the first decades of the twentieth century, the ideology it commonly describes—advancing a form of government in which political decision making is controlled by technical experts—has a longer pedigree and a more profound influence on how the political role of organized knowledge production has been historically conceptualized than may be suggested by its utopian connotations. For a history of the techno-bureaucratic rationale in political philosophy, see Sheldon S. Wolin, “The Age of Organization and the Sublimation of Politics” in *Politics and Vision: Continuity and Innovation in Western Political Thought* (Boston: Little, Brown and Company, 1960), 352-434. For a discussion of scientific management discourses and
Saint-Simonian ideology in describing postindustrial society as one that has as its purpose “social control,” the “organization of decisions, and the direction of change,” which are all functions that have “an increasingly technical character.” But he also considered the project of bringing a rational order to “mass society” a utopian vision and “a social alchemist’s dream.” For Bell, writing in 1973, the proper way to conceive the relationship between knowledge production and governance—or knowledge and “politics,” by which he meant political functions as organized and centralized in the state—was through the recognition of “limits.” “The conception of a rational organization of society stands confounded,” he wrote

Rationality… finds itself confronted by the cantankerousness of politics…. [T]he adherents of rationality… are now in the difficult position of having to rethink their premises and to understand their limits. And yet, the recognition of those limits is itself the beginning of wisdom.

Bell’s observations were certainly a reflection on the technocratic impulse humbled by the politics of 1968, which focused on the critique of institutional power structures centralized in what was referred to as the military-industrial-academic complex. Much of the discussion on projects and their relation to conceptions of political organization in Europe and America in the first half of the twentieth century, see Charles S. Maier, “Society as Factory” in In Search of Stability: Explorations in Historical Political Economy (Cambridge, MA: Cambridge University Press, 1987), 19-69.

20 Bell, Coming of Postindustrial Society, 20, 344. On Henri de Saint-Simon and technocracy, see ibid., 49, 74-80.

21 Ibid., 33.

22 Bell wrote, for example, that “no matter how technical social processes may be, the crucial turning points in a society occur in a political form. It is not the technocrat who ultimately holds power, but the politician.” Ibid., 360.

23 Ibid., 366.

24 A term inspired by the 17 January 1961 “farewell address” of departing President Dwight D. Eisenhower, in which he warned of increasing ties between the Pentagon and industry, the “military-industrial-academic complex” describes a system of collusion among the sectors of economic and political power and the scientific-technological research that serves them, resulting in a technocratic power establishment intent on organizing society according to the imperatives of maximum economic and geopolitical dominance. The critique of a new technocratic phase of social control, centralized in the alliance between state and economic institutions, characterized French theories of the postindustrial society in particular. See Alain Touraine, The Post-Industrial Society: Tomorrow’s Social History: Classes, Conflicts and Culture in the Programmed Society, trans. Leonard F.X. Mayhew (New York: Random House, 1971), 54, 84-84, 220-22; Jean-François Lyotard, The Postmodern Condition: A Report on Knowledge, trans. Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984), 64-66. See also Brick, “Optimism of the Mind,” 357, 377 n.37.
the politics of knowledge around this period centered on the role played by both the natural and the social sciences in the operations of the national security state—the entrenched and ever-expanding power structure of alliances among major corporations, private foundations, and federal defense institutions that had become the most notorious manifestation of the Cold War American nation-state.

However, it can also be said, following Brinkley, that the process of state formation initiated in the United States in the 1930s resulted in the development, alongside the national security state, of a parallel centralized structure of governance—the national welfare state. Initiated by the New Deal and built through the social initiatives carried out by subsequent Presidents—from Harry Truman’s expansion of social security and creation of national health insurance to the Great Society programs of Lyndon B. Johnson—the welfare state became the “weak” other of the national security state, developing in symbiosis with the latter but responding to a different organization of agency and relationships of power. The political structure of the “weak and embattled liberal state,” as Brinkley describes it, was defined by its “cumbersome and inadequate welfare mechanisms battling constantly for legitimacy,” its “primitive fiscal mechanisms,” and its “consistently frail… claim on popular loyalties.” This other nation-state also commanded resources in knowledge production—and therefore involved a politics of knowledge—that could hardly be described as technocratic in their relationship to

25 Brinkley, “Two World Wars,” 71. The idea that there were not one, but two, models of the nation-state that evolved during this period is proposed by other historians as well. Michael Hogan, for example, argues that there was a succession of state conceptions, with the New Deal state premised on social welfare ultimately superseded in the postwar period by the national security state governed by military objectives. See Michael J. Hogan, A Cross of Iron: Harry S. Truman and the Origins of the National Security State, 1945-1954 (New York: Cambridge University Press, 1998). Brinkley’s conception of the “weak liberal state” as an adjunct or parallel system, originating in the New Deal and persisting far into the postwar period, however, seems more accurate and compelling.

“frail and struggling” power mechanisms. In fact, starting already in the 1950s, the operations of the welfare state engaged research resources to an extent that rivaled the national security state. By 1962, the Department of Health, Education, and Welfare contributed the same proportion of the total federal spending on research as the Department of Defense. This pattern accelerated through the 1960s as the greatest relative growth in knowledge production could be traced in disciplines such as biophysics and genetics, nutrition, psychology, sociology, mental health, education, and urban affairs. When Bell formulated his ideas, the knowledge complex he placed at the heart of postindustrial society involved such new “life sciences” at least as much as it did the sciences of war.

The politics of knowledge production described in this dissertation involved, by and large, not the military-industrial-academic complex of the national security state, but rather the weak liberal state that arose alongside it. The model of technocratic control, whether achieved or projected as a goal, is inadequate in describing that politics. Instead, we might take the notion of “limits” employed by Bell in describing the political agency of knowledge as a reflection of the very organizing logic of the liberal state. It is this logic of limits that also describes the mechanisms of “governmentality” identified by Michel Foucault as operative in the formation of modern Western liberal states in general.

---

27 Ibid.

28 These trends in the growth of research areas and funding allocations are described by Bell as a “shift into the ‘life sciences’” in Bell, Reforming of General Education, 90-91. See also Bell, Coming of Post-Industrial Society, 226, 232, 256.

29 Because the liberal state is focused not on the expansion of its own power, but rather on the cultivation of economic and political freedoms in the society it governs, its structuring principle is that of “self-limitation.” Michel Foucault, The Birth of Biopolitics: Lectures at the Collège de France, 1978-1979, ed. Michel Senellart, trans. Graham Burchell (Houndmills: Palgrave Macmillan, 2008), 44.
its own power on the one hand, and the establishment of “strategies of security,” including welfare programs, on the other echoes Brinkley’s description of the American weak liberal state as a “compensatory” state, dedicated to both the promotion of economic growth and the amelioration of its destructive effects through social security initiatives.\textsuperscript{30}

Following Foucault, who did not conceive of “governmentality” as a project localized in the institutions of organized politics, but rather as an interface between society and the state, or the mode in which political society is both imagined and practiced, we might propose that the politics of knowledge in the weak liberal state emerging in America at the end of the 1930s was also driven by the imperative of self-delimitation. In the case studies of the production and organization of knowledge examined here, the crucial question for those involved was always that of how to devise a structure, method, or procedure that would not only allow for, but necessitate, the emergence of the new, the unforeseen, and the uncontrolled. The real task, in other words, was to establish the optimal conditions for the development of aleatory effects within the social domain in question—without destabilizing that domain. If knowledge was employed here as a tool of social planning and control, it was to be a programmatically blunt instrument. It may be said that the organization of knowledge production in each of these instances revolved around the problem of how not to know \textit{too much}—marking it as a function of a political regime intent on not governing \textit{too much}.\textsuperscript{31}

It would seem that the ideology brought to America by both Gropius and Kepes as a legacy of design practices and philosophies developed in the 1920s was precisely a technocratic

\textsuperscript{30} Foucault, \textit{Birth of Biopolitics}, 63-65; Brinkley, “Two World Wars,” 70.

\textsuperscript{31} Cf. Foucault, \textit{Birth of Biopolitics}, 319.
one—expressed, on the one hand, in Gropius’s Taylorist preoccupations with the organization of large-scale building production, and on the other, in the technological sublime of “new vision” taken up by Kepes from his older colleague Moholy-Nagy. Of the two, it is certainly Gropius, a canonical figure of modern design, whose association with the technocratic project has had the most lasting and important historical effects. In the addendum to this introduction, therefore, I explore some themes in the reception of Gropius’s American work that illuminate the historical figure of Gropius as an index of the disciplinary and political problem of architectural agency at mid-century. Particularly, I suggest that the idea of the technocratic had become around the 1960s and 1970s an allegory of the limit, in which questions of architecture’s political agency were confronted—and at times elided—with questions of its formal or aesthetic integrity.

Although in America Gropius largely abandoned his earlier concern with the rationalization of the building industry, he continued to promote a conception of design premised on cost efficiency calculations and functional assessments of program first worked out in his *Existenzminimum* studies of the 1920s. It was, however, his master conception of the architect’s role within a system of building practice resonant with larger social connotations that ultimately linked Gropius with the technocratic tendency in design. Frequently summarized as a

---

basic statement of belief or position, it outlined a managerial conception of architectural practice conducted within a complex inter-functional structure of organized production. “The architect is to be a coordinator,” Gropius wrote in 1950, “whose business it is to unify the many social, technical, economic and artistic problems which arise in connection with building.”33 “If he will build up a closely cooperating team,” he elaborated in 1952, “together with the engineer, the scientist and the builder, then design, construction and economy may again become an entity—a fusion of art, science and business.”34 As I argue in the addendum, critical reviews of Gropius’s American built work starting in the early 1960s tended to explain perceived lapses in design quality as the result of a compromise of the architect’s creative independence. By the 1970s, this loss of creative autonomy was coupled to the loss of political autonomy and identified with more recent technocratic or postindustrial tendencies in design practice. In this context, the legacy of Gropius was invoked as a figure of threat to architecture’s disciplinary identity and social agency. That discursive evolution in the reception of Gropius’s American work situates it, still today, as a cipher for the political problematic of architectural practice and its postindustrial revisions.

As I have suggested above, the technocratic question occludes more than it illuminates in the problem of design’s engagement with the politics of knowledge traced here. In Chapter One, I explore a different historical hypothesis, linking Weimar-era conceptions of design as intellectual production to projects of collective group or institutional organization undertaken by artists and designers. The relevant context for those revisions of practice, I argue, was the consolidation of a new form of organized politics in the emergent Weimar social democratic

---


state. Although there are a number of suggestive scholarly precedents for the reevaluation of the relationship of design to intellectual production in Germany in the 1920s, this subject has not been examined in its own right. Manfredo Tafuri posited the problematic of “intellectual labor” as a framework for the analysis of modern architecture in general, with the Weimar avant-garde constituting a crucial node. Marcel Franciscono and Francesco Dal Co have variously addressed the Wilhelmine precedents and utopian connotations of the discursive link between design and the creative intellect. Finally, Maria Gough has recently illuminated in the discourses of Russian constructivism a link between the notion of “intellectual production” and the rejection of an object-based conception of art in favor of a process- or organization-based conception. The historical connections among the Russian and Weimar avant-gardes make her research relevant here as well. The Russian discourse was, moreover, mediated in Germany by its reception among the Hungarian avant-garde, the third important link in this history and a direct source for Kepes’s ideological positions. The 1920s was a wellspring of expanded conceptions of practice in the Weimar orbit of the international avant-gardes. In situating those revisions of practice in relation to the politics of state formation in that historical context, this chapter charts a background for the issues of practice encountered and developed by Gropius and Kepes in America.

Chapter Two situates Gropius’s arrival and early reception in America in the context of contemporaneous discourses on practice motivated by pressures exerted on the architectural


profession by the economics of the building industry. The 1929 economic crash precipitated efforts to integrate the national economy as a whole, and the building industry as its then most strategically significant sector, within the legislative domain of the state. By the end of the 1930s, the process was resolved in the eclipse of the technocratic project of economic planning first proposed in the 1920s by a new interventionist model of “stimulus,” advanced by John Maynard Keynes and applied in America largely in the building industry. According to the stimulus model of intervention, the managed economy state was to act as the guarantor of (economic) freedom. At the same time, the Keynesian solution outlined a new role for theoretical knowledge in the operations of the state, focused on delimiting the function of theory as a tool of control and prediction in policy applications. During the same time, segments of the American architectural community articulated a discourse on design practice focused around the notion of “method”—embraced and promoted by Gropius immediately upon his arrival in the United States. The “method” discourse sought to position the architectural profession in relation to the emergent model of the national economy. By defining design as an objective, calculable procedure, it aimed to secure the status of design services as a sound investment. At the same time, intuitive judgment and flexible response in unforeseen situations was increasingly emphasized as a crucial element of design “method.” This sustained balance between control and contingency, I argue, signaled architecture’s orientation to the developing managed economy regime.

It is easy to see that Gropius embraced the notion of “method” as it resonated with the rationalization and systematization of the design process undertaken at the Bauhaus after 1922. Nevertheless, it was his skillful immersion in the problems of practice at the core of the American architectural profession around 1937 that assured him the relevance he would enjoy in
the American context at least through the 1940s—and that is hard to imagine would have been
granted him had he simply acted as the Bauhaus evangelist that he is most frequently envisioned
today to have been.38 This chapter also aims to revise that understanding of Gropius’s activity
upon arrival in America, situating his published statements and his pedagogical initiatives at
Harvard within the professional, disciplinary, and political context of his adoptive country.

Chapter Three carries this analysis into the 1940s, when the discourse of “method” was
eclipsed in the architecture community by an emergent discourse of “planning,” linking the
disciplinary project of city planning to the state project of economic planning in the context of
the Second World War. Massive workforce migrations that accompanied industrial war
mobilization prompted the first extensive application of stimulus in the building industry as
entire “new towns” had to be rapidly erected to accommodate an influx of workers. At the same
time, postwar plans for federally-sponsored urban and housing development were being
advanced. The very young American planning profession responded to the imperatives
established by such federal activity in the urban fabric by moving the concept of “planning”
away from “design” and redefining it as a governmental process or managerial “function.” As a
process rather than a blueprint, planning could thus maintain the now requisite distance from
control and embrace the delimitation of its agency in the urban fabric as the very condition of its
disciplinary knowledge. Because of the evident national prominence accorded to planning and its
incomplete disciplinary differentiation from architecture, the latter approached the problematics
of “design” opened up within the former as a challenge to its own political and economic
viability. Between 1942 and 1944, Gropius engaged in negotiating the relationship between
“design” and “administration” with respect to city planning: first together with Joseph Hudnut in

38 Most recently and extensively, this interpretation of Gropius’s American career through the 1940s has been
elaborated in Jill Pearlman, Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus
a program of curricular revision at the GSD dedicated to preserving architecture’s disciplinary agency within the planning field, and second in a series of postwar planning proposals in collaboration with GSD colleague Martin Wagner.

Writing in 1938, the leading American Keynesian economist Alvin Hansen theorized the managed economy regime, whose formation he oversaw as government advisor, in relation to the notion of a closed frontier. The exhaustion of the physical frontier, with its virgin land and material resources, necessitated the invention of new “intensive” development outlets. For Hansen, the theory charted the economic logic of urban redevelopment—the federal program under which already developed but stagnating urban areas were designated for demolition and entrepreneurial reinvention, and therefore, the practically fiat creation of new investment opportunities at the site of already once accomplished ventures. If delimitation described the strategic rationale of the weak liberal state, the closed frontier image served as both its metaphorical counterpart and its empirical justification—the former dictated the rules of the game between freedom and security, contingency and control; the latter indicated the field across which that game would unfold.

The exhaustion of the frontier signaled a corresponding shift of agency into domains that may best be described as immaterial. State action in redevelopment, which Hansen had by the early 1940s projected to spread across the entirety of the nation’s built fabric, was imagined as fundamentally that of a catalyst for private initiatives, whose concrete physical manifestation was left programmatically undetermined. When Hansen and his colleagues outlined their ideas at a 1942 Harvard conference, Gropius and Wagner, representing the design professions at the event, pointed out precisely the lack of concern with physical outcomes in the described project. But their intervention was not naïve; they, along with other designers who tracked and attempted
to adapt to the shifting modalities of agency in the emergent regime of governmentality, had already been struggling to find new models of practice that could respond to the growing strategic irrelevance of traditional design expertise. The discourses on design as “method” and as “planning function” focused on processes severed from material outcomes, thus displacing the invention and production of physical structures as the exclusive or even the principal goal of professional design practice.

Starting in the 1940s, Kepes encountered and responded to a set of discourses that charted a further development of the closed frontier rationale. At the end of 1944, President Franklin D. Roosevelt addressed a letter to the director of the wartime Office of Scientific Research and Development, inaugurating the opening of a new frontier—which the letter’s addressee, Dr. Vannevar Bush, would famously declare to be “endless” in the title of a 1945 report he prepared in response.39 “It is in keeping… with basic United States policy,” wrote Bush, entirely in accord with Hansen, “that the Government should foster the opening of new frontiers.” The Bush report, thus, announced the opening of another field of “intensive” redevelopment—to take place on what he called the “frontiers of knowledge,” or as Roosevelt himself had put it, the “new frontiers of the mind.”40 As it was frequently both argued and implied, postwar federal funding of scientific research conformed to the rationale of stimulus investment as the preferred mode of state intervention in the national economy, opening a new outlet for that intervention. The frontier of the national mind, in that sense, was composed of “human resources”—a new kind of national resource that came to supplant the exhaustion of the land’s material riches. Although scientific knowledge production was the primary focus, it did


40 Ibid., 8, 6, 4.
not exhaust the domain of agency thus opened up for the state. That expanded domain was, rather, encompassed by federal investment in educational institutions at all levels, oriented to the promotion of, specifically, innovative and creative talent. The central imperative of the mind as a national resource was that it be to the utmost free.

As I show in Chapter Four, Kepes discovered the emergent politics of the mind already during the war, and was immediately drawn into its orbit. His interests in perceptual psychology—which he long shared with Moholy-Nagy but evidently studied much more extensively than the latter—were supplemented by his encounter through various civilian defense initiatives undertaken at the Chicago School of Design with the role played by psychology in the management of “human resources” involved in the execution of the war. Influenced in part by those experiences, he developed the idea of vision as a technology (in the sense of a set of techniques or tools) for the training of what he called the “social man.” After the war ended and Kepes moved from Chicago to Cambridge, he increasingly presented the perceptual technology he continued to advance as, fundamentally, an intellectual technology—a training of the creative mind. His project merged with widespread efforts on the part of American artists, intellectuals, and educators to link studio art and design practices to the national imperative for intellectual creativity. Such efforts found institutional expression in projects to integrate studio art into “general education” programs. In the general education—or “liberal studies”—movement of the postwar years, which aimed to promote intellectual flexibility as an antidote to rigid constraints of “specialization,” the interface of control and freedom was played out across one particularly large segment of the human frontier. Kepes’s encounters with pedagogical discourses of the creative mind were numerous, but his most important engagement outside of M.I.T. with their institutionalization in relation to “general
education” was through related initiatives at Harvard, resulting in the establishment of the Carpenter Center for the Visual Arts, whose directorship Kepes was offered and turned down in 1957.

Kepes’s ideology of perception as a technology of intellectual training proved fruitful at M.I.T. As I discuss in Chapter Five, when Kepes arrived in Cambridge in 1946, the School of Architecture had just undergone a curricular restructuring intended to bring it pedagogically and conceptually in line with the Institute as a whole. Kepes’s courses, structured as exercises in cognitive-perceptual technique, offered designers a way to conceive their specialized professional competence as part of the knowledge regime epitomized at the Institute by the research sciences. The immediate postwar period opened a new era in M.I.T. institutional history. From a polytechnic institute focused on developing technological applications for industry, M.I.T. was reinvented as an entirely new model of a research-based scientific university. The success of this transformation would make it one of the most prominent American centers of scientific research and the institutional recipient of some of the biggest outlays of federal research funds in the postwar period. As part of its institutional reinvention, M.I.T. developed a particular logic of instrumentality that would govern its techno-scientific research complex. It entailed the adoption of a necessary caesura between knowledge production in the theoretical or “basic” sciences and its instrumental applications for the needs of the state. This gap defined the political agency of M.I.T. research in terms of its “potential”—a deferred instrumentality that supplied scientific knowledge production with the requisite degree of strategic unpredictability. The relationship between autonomy and instrumentality in M.I.T. knowledge production was expressed in its ideologies of “service to the nation” and the citizen-scientist.
Kepes adopted the Institute’s premise of deferred instrumentality and developed it in a novel direction. Discovering photographic records of scientific experiments conducted in M.I.T. labs, he envisioned these as tools of a new perceptual practice, at once empirical (or natural) and instrumental (oriented to social goals). Linking the indexical-instrumental condition of perception thus revealed to the collaborative cross-disciplinary modes of research practice institutionalized at M.I.T., Kepes proceeded to elaborate the visual discipline he had developed as a strategy for the construction of productive communities of knowledge with direct social effects. The initiatives he carried out during his tenure at M.I.T.—in exhibition design, publication, and ultimately, the inauguration of CAVS in 1967—should be understood as ventures within a larger ongoing project. Scientific photographs and works of art produced at CAVS, student design exercises and essays published in Kepes’s themed anthologies, were all precincts in an extensive interdisciplinary community of knowledge production Kepes attempted to build. They were related to each-other less by the content of the knowledge produced than by the strategic logic of deferred instrumentality they all shared.

In the end, the projects of Gropius and Kepes in America are exceptional in that, of the Weimar artistic diaspora, they were the only ones dedicated explicitly and intensively to an ideological and programmatic elaboration of the designer’s social identity in terms of practice. As exceptional case studies, they do not offer a master revision of the established historical narrative charting the migration and transformation of design approaches from prewar Europe to postwar America. However, they provide an opportunity, and even a necessity, to question that narrative’s ideological premise. The immediate postwar years in America usually describe a late modernist period, seen in its relationship to European high modernism as a trajectory of demise:
capitulating to the temptations of the emergent society of consumption and the pressures of the Pax Americana’s ideological imperialism, European modernism’s radical aesthetic and social project waned, devolving into an increasingly institutionalized and commercial “international style.” This retreat from radical aspirations, in turn, marks the immediate postwar years as a transitional period between the utopianism of the early twentieth century and its various reinventions starting in the 1960s. The ideological moment of this narrative couples a historiography structured by periodic breaks or transitions to a model of the relationship between art and politics rooted in the concept of the avant-garde as cultural production dedicated to social transformation.41

The historical problems raised in situating design in relation to the politics of knowledge do not fit well into that schema. First, because as I have tried to show, these are issues of practice rather than of ideology: it is not the content of knowledge that ultimately matters in each case, but its productive organization and social function. Shifting attention from design artifacts and ideological programs as products of artistic practice to the practices themselves as they constitute the designer’s identity as a social and cultural producer, the relevant question becomes not whether one can locate forms of emancipatory anticipation in design works and discourses, but

41 While there have been theories of the “avant-garde” premised upon cultural autonomy, the concept of the avant-garde as cultural production dedicated to social transformation is the accepted reading—deriving from the canonical Marxist interpretation by Peter Bürger, *Theorie der Avant-Garde* (1974). While Bürger himself granted this position exclusively to the historical avant-garde, positing the postwar avant-garde instead as a vacuous recycling of the forms and critical strategies of the former, the presence of effective political critique in the artistic practices of the postwar (neo-) avant-garde is now widely accepted. See, e.g., Benjamin Buchloh, *Neo-Avantgarde and Culture Industry: Essays on European and American Art from 1955 to 1975* (Cambridge, Mass.: MIT Press, 2003), xxiv-xxvi. The critical evaluation of the architectural neo-avantgardes, on the other hand, as practices of social transformation or resistance has been, as a legacy of Manfredo Tafuri’s incisive analysis, confronted with the ambivalent model of utopian thought. For key recent reflections, see Felicity D. Scott, *Architecture or Techno-Utopia: Politics after Modernism* (Cambridge, Mass.: MIT Press, 2007); Reinhold Martin, *Utopia's Ghost: Architecture and Postmodernism, Again* (Minneapolis: University of Minnesota Press, 2010).
rather how one can describe the reciprocal motivation between practices and representations. Thus, for example, the radical utopianism proclaimed by early Weimar artistic groups can only be understood in its strategic relationship to forms of political organization institutionalized by Weimar parliamentary democracy; while the apparent conformism of Kepes’s notion of the “social man” must be read against his efforts to advance the designer into a position of direct social agency in the context of national war mobilization. The relevant question, in other words, is always that of the strategic function of discourses rather than of their relative position on the ideological spectrum from radicalism to affirmation.

Second, a reading of design as a (political) practice of knowledge is fundamentally incompatible with a conception of design as a cultural practice and the relative autonomization of socio-historical registers that implies. Therefore, the task can no longer be that of establishing channels of communication between historical developments in the (cultural) field of design and, putatively essentially heterogeneous, developments in political, economic, or technological history. Instead, one is dealing with a history of various practices that conform to the same mode of agency established within a general political regime of the liberal state, including its constitutive elements (managed economy, the interface of social security and political and economic freedoms, the bureaucratic and techno-scientific organization of governance). The

42 Methodologically, I would distance my approach from that of the sociology of practice, as represented in, e.g., Magali-Sarfatti Larson, Behind the Postmodern Façade: Architectural Change in Late Twentieth-Century America (Berkeley: University of California Press, 1993); or Dana Cuff, Architecture: The Story of Practice (Cambridge, MA: MIT Press, 1991). Such discourses address architecture on the model of the “profession” as an analytical entity with constant characteristics—therefore justifying comparison, in a recurring trope, to the “medical profession.” Throughout this dissertation, I engage a number of excellent art historical studies that have some methodological recourse to the sociology of practice: Paul Louis Bentel, Modernism and Professionalism in American Architecture, 1919-1933 (Ph.D diss., Massachusetts Institute of Technology, 1993); Andrew Michael Shanken, 194X: Architecture, Planning, and Consumer Culture on the American Home Front (Minneapolis: University of Minnesota Press, 2009) and Andrew Michael Shanken, From Total war to Total Living: American Architecture and the Culture of Planning, 1939-194X (Ph.D. diss., Princeton University, 1999); David Deitcher, “Teaching the Late Modern Artist: From Mnemonics to the Technology of Gestalt” (Ph.D. diss., City University of New York, 1989). I am, however, interested in the politics—rather than the sociology—of practice.
question for the history of design practices, then, is how they manifest the mode of agency established within that regime.

If the politics of knowledge model necessitates that we rethink the relationship between cultural production and social transformation, it also invites a parallel reconsideration of the geographical and chronological divisions that shape the historical narrative of the European avant-garde and its American assimilations. In describing manifestations, in different registers, of a mode of political agency defined by limits, we must stratify according to their own properties the historical field across which they unfold. A suggestive elaboration of this idea is expressed in the political philosophy of Etienne Balibar. In response to “periodizing” political theories, Balibar proposes a concept of a contradiction fundamental to the Western democratic regime that finds different political manifestations throughout its history, including the present. The aporetic contradiction between freedom and equality in the very principle of democracy at once delimits its universal extension and continuously brings any established democratic institution to its limits, necessitating its ongoing revision. Thus, in place of a linear historical progression, one finds a serial, both concurrent and sequential, elaboration of “layers of the political,” according to the emergence of “objects of contention” that articulate the democratic contradiction in relation to specific historical contingencies.43

This is a productive way to understand the relationship among the various political revisions of practice described in this dissertation. Weimar Germany and New Deal America are both historical moments of liberal democratic state formation, which engage processes of delimitation in a number of areas intersecting with design. It is possible to understand the discourses and practices of Weimar parliamentary organization, New Deal economic planning,

postwar general education, etc., as “layers of the political,” which describe the constitution of liberal democratic governance within a contingently apportioned range of its agency. Another way to describe the serial elaboration of these moments is to say that they all trace the emergence of knowledge as a new “object of contention,” specifically at what Balibar describes as the historically privileged site of conflict. “Private property,” he notes, has been historically the most obvious and consequential site for the articulation of the liberal democratic political paradox—defining the economy as at once “the principal area of state intervention in social practice [and] an unceasing obstacle to the efficacy of state intervention”; and, more generally, “the debate on the forms, limits, and attribution of property [as] a political debate par excellence.” While the establishment of the managed economy regime during the New Deal (also characterized as “mixed economy” for the complex interplay of “public” and “private” institutions that defines it) was a paradigmatic example of the negotiation of private property as object of contention, it was at the same time here that expert knowledge directly entered the political problem of property through its articulation as an economic policy tool.

Balibar considers knowledge as a tool of social agency or social stratification (what he calls “intellectual difference”) to be a counterpart of private property, traceable throughout the history of the democratic regime, but latent as an object of contestation. From the New Deal

---


45 The dialectics of “intellectual difference” are directly linked to those of “private property” in democratic political philosophy and practice, according to Balibar, and thus share the same aporetic development. Property can only constitute a “natural right” inasmuch as, before any possession of things, it implies the “property of oneself,” a “free disposal of one’s forces and of their employment,” as the generic concept of intelligence. Because to possess it is first necessary to know, the role of knowledge within property introduces the latter also to an internal contradiction: the fundamentally social (or “transindividual”) nature of knowledge predetermines the impossibility of its being owned exclusively, and therefore contradicts the very concept of “private property.” See Étienne Balibar, The Philosophy of Marx, trans. Chris Turner (London: Verso, 2007), 49-52; Balibar, “What is a Politics of the Rights of Man?” 221-224; Étienne Balibar, “‘Rights of Man’ and ‘Rights of the Citizen’: The Modern Dialectic of Equality and Freedom,” Masses, Classes, Ideas, 54-59. See also Jason Read, “The Present as Pre-History: Adorno and Balibar on the Transformation of Labor,” International Studies in Philosophy 37: 2 (2005): 95-112.
administration of economic recovery to the postwar “new frontier,” then, we can trace the emergence of knowledge from its latency as a political object to the central place it would occupy in the political conflicts of the 1960s and 1970s. From within the history of design practices, the benefit to understanding these events as a serial elaboration of a foundational liberal democratic dialectic of limits, rather than the advent of a new socio-cultural “paradigm,” postmodern or post-industrial, is that it suggests new connections or patterns across the divides that currently separate design practices after 1960 from their postwar precursors—and the latter in turn from their 1920s avant-garde counterparts. If the chronological range of this dissertation stops at 1967, therefore, it is not to be understood as marking the end of a complete cycle of development. The serial organization of historical space works to fragment the narrative drive of history even within a prescribed set of chronological parameters. It also makes those parameters ultimately tentative and contingent.

46 Within debates internal to political philosophy, Balibar’s intervention addresses the displacement of class conflict, centered around the object of property, with new forms of political contestation.
ADDENDUM

“A FIGURE COVERED WITH LABELS”: THE RECEPTION OF GROPIUS’S AMERICAN WORK

“I realize that I am standing among you as a figure covered with labels, maybe to the point of obscurity.”
-Walter Gropius, Speech on the Occasion of His Seventieth Birthday, June 1953.¹

Of the three canonical founding fathers of modern architecture—Le Corbusier, Mies van der Rohe, and Gropius—the latter has had the most uneven reception history. Lionized by early critics, Gropius arrived in the United States as a “pioneer” and leader of the modern movement.² While his early accomplishments continued to be universally praised, his work in America came under fire already by the early 1960s, and with increasing vitriol thereafter. This discrepancy in Gropius’s early and late periods, moreover, continues to be an unresolved aspect of the critical and historical assessment of his legacy. Unlike Kepes, who sank into obscurity after his retirement from CAVS in 1976 not to be brought back to scholarly attention until fairly recently, Gropius is an important figure for the historiography of twentieth-century design—and one that is fraught with tension.

Arguably, the still-current critical consensus on Gropius’s late work and legacy was forged between the early 1960s and the 1980s. In tracing the formation of this consensus, several rhetorical themes emerge, which—as they reinforce one another in unexpected ways—constitute

¹ Arts and Architecture (June 1953): 19.
a figure of both temporal discontinuity and perceptual occlusion. First, Gropius’s work consistently failed to be reconciled with a Romantic model of artistic subjectivity, understood to be manifested in individual artifacts and within an overall unified oeuvre. This lack of fit marked both Gropius’s production and his creative persona as indistinct, illegible, aesthetically and conceptually obscure. Second, the lack of critical interest in his most recent work made Gropius paradigmatic for an emergent periodizing narrative that sought to mark a break between current design tendencies and those represented by the modern movement. Thus, the figure of Gropius was rendered at once to go out of focus and to disappear into the (historical) distance. That critical legacy established the historiographical figure of Gropius, it might be said, as a cipher—in the double meaning of that term as a representational code and as a symbol for zero, or the absence of value. As one critic put it in 1984, Gropius’s “influence waned rather quickly and… there remained little of lasting importance.” As such, Gropius still functions as a code name for the historical eclipse of the modern movement and a blind spot for critical assessment.

The humanist terms of mid-century critical analysis may appear dated today. The relevance of that analysis, however, exceeds the conventional conceptual framework within which it was articulated. Once constituted, the cipher of Gropius would serve as a key referent in later, and highly influential, discourses on the social and political agency of architectural practices. In the writings of Colin Rowe and Manfredo Tafuri, architectural agency was

---


4 This does not preclude these from being reproduced in the two most recent scholarly assessments of Gropius’s American work. Anthony Alofsin, *The Struggle for Modernism: Architecture, Landscape Architecture, and City Planning at Harvard* (New York and London: W.W. Norton & Co, 2002) covers one hundred years of institutional history. While it offers a much fuller picture than previously available of the early years of the Graduate School of Design, it rehearses the established interpretations of the figure of Gropius. The same is true of Jill Pearlman’s more polemical *Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus Legacy at Harvard* (Charlottesville and London: University of Virginia Press, 2007). Her focus is on giving Joseph Hudnut the historical attention he certainly deserves, and Gropius’s primary historiographical function here is that of Hudnut’s foil.
differently articulated as a function of limits. The architectural work as an integral aesthetic object situated in the context of a larger urban fabric was here an allegory of architecture’s disciplinary identity and social agency. Within that framework, the cipher of Gropius emerged as a threatening de-differentiation or dissolution of the borderline both critics considered to be essential. It is ultimately this situation of Gropius within a dialectic of agency and delimitation that remains most fruitful today, both for its diagnostic accuracy and the precision with which it circumscribes the analytical reach of frameworks that hold the material products of design as an index to the interpretation of design practices.

A.1 CIPHER

“[B]y 1955,” commented Gropius’s former student at the Harvard Graduate School of Design Paul Rudolph in 1961, “the limitations of the European architectural philosophies of the first part of the 20th century were crystal clear…”⁵ The “modern movement,” another former student, Philip Johnson, privately noted the same year, was “winding up its days.”⁶ At the turn of the 1960s, the emergent narrative of modern architecture’s historical eclipse was mirrored in assessments of Gropius’s current work, in which metaphors of a loss of vitality and promise, of persistence without a future and ineluctable obsolescence proliferated. Obliquely, and with all due respect for his indisputable position as “a powerful catalytic agent in the evolution [of modernism],” Gillo Dorfles suggested, again in 1961, that the architect’s progressive trajectory, “projecting himself into the future from the very beginning of his career,” had come to a halt in a

---


“limited capacity for innovation,” marking the limits of his “participation in the future of U.S. architecture.” 7 Two years earlier, and less delicately, Time found Gropius “so firmly planted in architectural history that people were sometimes amazed to find him still a part of the present.” 8 Similarly, James Marston Fitch opened his 1960 monograph on the architect by confessing that Gropius represents the “dilemma” of living history—an originator of the contemporary commonplace, the “prophet [who] had overrun his prophecy.” 9 Nine years later, such general perplexity at discovering the great man still alive was found well-suited for an obituary by The New York Times. Citing Fitch’s “dilemma,” the Times concluded that Gropius was “one of those rare accidents of history, a man who became a legend in his own time.” 10 At Gropius’s passing in 1969, the narrative had already fully coalesced. For the general public who may still have not been in-the-know, New York Times architecture critic Ada Louise Huxtable explained that Gropius’s death “did not mark the end of an era; the era was already over.” The erasure had become evident enough that Huxtable found it possible to plead—or provoke—that “[Gropius] was not irrelevant.” 11 For some time prior to his actual death, the architect had been a ghost.

Spectral metaphors abounded at the brief flurry of scholarly activity during the mid-1980s “resighting (or hindsighting)” Gropius, as one observer put it. 12 “Gropius and the

---

Bauhaus,” noted another critic, “are ghosts that continue to haunt the design studio.”13 To take “old man Gropius” too seriously, observed yet another, is to “se[e] ghosts.”14 Such rhetorical devices secured the link between the figure of Gropius and the narrative of temporal discontinuity, which continued to define conceptions of the modern movement. In 1992, for example, it could be said explicitly that “what happened to Gropius has its parallel in what happened to Modernism itself.”15 The narrative that located in postwar America the endgame of the European modernism of the first decades of the twentieth century began to coalesce into the specific trajectory of devolution in the 1960s, propelled by a growing desire to counter the triumphalism of a perceived modernist orthodoxy. Such early critiques of “late modernism” in America suggested that the utopian optimism of the modern movement, its faith in aesthetic and social progress spearheaded by modern technology, was brought to ground in an ironic fulfillment (in the midst of the International Style’s evident hegemony), which was at the same time its negation in dogmatic formalism and frank commercialism. In the mid-1980s, this historicist trajectory was consolidated into the narrative of postmodern periodization, declaring the death of modernism “itself” in a thematic of failure.16


14 “Professor Herdeg burdens old man Gropius,” wrote Walter Segal in his review of The Decorated Diagram, “with the truly heroic responsibility for the ugliness of modern architecture in America. He does, of course, see ghosts.” Segal, “Unkind to Grandad,” 69.


16 The classic texts outlining this argument are Jane Jacobs, The Death and Life of Great American Cities (1961); Peter Blake, God’s Own Junkyard: The Planned Deterioration of America’s Landscape (1964); Peter Blake, Form Follows Fiasco: Why Modern Architecture Hasn’t Worked (1974); Tom Wolfe, From Bauhaus to Our House (1981); Brent Brolin, The Failure of Modern Architecture (1976). For the classic version of a similar argument in relation to “high modernism” in the art world, see Serge Guilbaut, How New York Stole the Idea of Modern Art (Chicago: University of Chicago Press, 1983). For the narrative of cultural postmodernism, see, e.g., David Harvey,
The figure of Gropius remained tied to this narrative charting modernism’s demise at the moment of its Pyrrhic victory partially because his postwar production – unlike that of all the other modern “masters”—was never critically redeemed in any other form of ongoing vitality. “Halfway through his career,” one critic rehearsed the consensus position, “at the peak of success, [Gropius] declared victory, and seemed to give up the fight unwittingly… Modernism was no weaker in the 1950s than in the 1920s – think of the Seagram Building, think of Ronchamp – yet the work of Gropius lacked its previous fire.”17 Gropius was commonly invoked at the points of intersection between aesthetic evaluation and historicist logic. In an influential 1969 text, William H. Jordy described the American practices of émigré designers linked to the Bauhaus as an “aftermath”—with connotations of the calm after the storm—tying that metaphor specifically to Gropius’s work, the “mildness” of which made the “blandness of both visual qualities and theoretical commitment in most [postwar American] modern architecture… more evident.”18 That “mildness,” in other words, indicated the capitulation of a previously rigorous aesthetic and ideological position in a morally compromising American context. Gropius’s “fame secure,” the critic speculated, his work at the close of his career blurs his former ‘position’ to that of the merely distinguished professional. Breuer, and especially Mies, who remained most faithful to the old cause amid the distractions of their new environment, have pursued the steadiest careers.19

In 1976, Huxtable used the same moral-aesthetic criteria in summarizing the narrative of modernism’s demise: “the perversion of the modernist ideal, the failure of its social aims, the

---

17 Hale, “Failure and Success,”108.


19 Ibid., 522.
explosion of the myth of progress, the deadly spread of the commercial cliché, the disruptive impact on the receiving environment, plus the poverty and rigidity of design from which any allusion to the past has been expunged.” She called all this “the gospel according to Giedion and Gropius.”

Moral-aesthetic formulations of blandness or superficiality in Gropius’s American production were frequently expressed as a weakness in his authorial position, his status as both the designer of a specific set of architectural works and the originator of a specific legacy in theory and design. At stake was the issue of collaboration, expressed by Gropius, first, as the ideal of creative “teamwork” among architects, presumably realized in the formation of The Architects Collaborative; and, second, as the championing of architectural production by teams of specialists, with the architect in the role of “co-ordinator.” This model of practice directly contradicted the values of originality and authenticity linked to the authorial figure in humanist discourse. It was Gropius himself, in fact, who first articulated that polarity. He positioned the

20 Ada Louise Huxtable, “The Gospel According to Giedion and Gropius is Under Attack,” The New York Times, 27 June 1976. Gropius and Sigfried Giedion were perhaps the most prominent spokesmen of modern architecture in America. Still more precisely, it was Giedion who offered, with his Space, Time and Architecture: the Growth of a New Tradition (1941), the canonical postwar model of modernism as a teleological evolution; and it was Gropius who now came to stand for its inglorious telos.

21 E.g.: “It is obvious that we have to learn new and better ways of collaboration. In my experience these methods call first of all for an unprejudiced state of mind and for the firm belief that common thought and action are a precondition for cultural growth. Starting on this basis, we must strive to acquire the methods, the vocabulary, the habits of collaboration with which most architects are unfamiliar.” Walter Gropius, “The Role of the Architect in Modern Society” in Apollo in the Democracy: the Cultural Obligation of the Architect (New York: MacGraw-Hill, 1968), 53.

22 E.g.: “The architect of the future… will be forced by the trend of events to draw closer once more to the building production. If he will build up a closely co-operating team together with the engineer, the scientist and the builder, then design, construction and economy may again become an entity – a fusion of art, science and business.” Walter Gropius, “Gropius Appraises Today’s Architect,” Architectural Forum (May 1952), reprinted in Walter Gropius, The Scope of Total Architecture (New York: Collier Books, 1943), 74.

“teamwork” ideal as a polemical other to “the work of the egocentric prima donna architect who forces his personal fancy on an intimidated client, creating solitary monuments of individual esthetic [sic] significance.”24 Gropius’s polemic had as its immediate target Frank Lloyd Wright, whose work was interpreted—with much help from Wright himself—exactly in terms of anarchic and intransigent “solitary genius,” and whose own vehement critiques of prominent European modernists were well-known.25 The effect of such exchanges was to situate Gropius on the opposite side of the Romantic model of creative subjecthood and its aesthetic expression. “[W]here Wright designed soaring, poetic buildings that smote the eye and branded their creator's name in the memory,” *Time* magazine wrote in 1959, “Gropius was… modern architecture's idea-giver, analytical thinker and greatest educator.”26 Unlike other leaders of the modern movement, in other words, Gropius was not a “form giver.”27

The criterion of aesthetic originality, moreover, was inseparable from the assessment of a distinct and unified authorial subjectivity. After describing one of Gropius’s designs with TAC as “stylistically ‘neutral,’” for example, Dorfles proceeded to note the architect’s “humility… in ‘neutralizing himself’ in [a] group of disciples [at TAC], without wishing in any way to stand out from the teamwork which he had founded.”28 “[TAC] buildings are not without quality,” echoed

---


27 “[Gropius] does not share [the category of the ‘great architect’] on the level of a Wright, Mies, or Le Corbusier… [They] are correctly called form givers, and the forms are those their age demands, shaped by both the individual creative act and the historic moment.” Huxtable, “He Was Not Irrelevant.”

Jordy, “but they are without personality.” The significance assigned to Gropius’s lack of drawing skill is also notable in this context. Marcel Franciscono asserted that fact to be “probably the single most important disclosure” of the architect’s 1983-84 biography, concluding that “his vaunted teamwork was for him a strict necessity, since he was unable to commit his ideas to paper.” Perhaps that revelation so potently distilled the negation of creative subjectivity in Gropius’s work because it harkened back to the Beaux-Arts conception of drawing, founded in the prominence afforded to the esquisse as what has been called “the quintessential romantic act of invention and creation.” Produced in total seclusion and based on a momentary spark of intuition, the esquisse proved that “architectural creation lay in the ‘conscience’ of the individual architect.” When Paul Rudolph announced in 1961 the end of “a long period where the specialists talked only of… the architect as a coordinator,” he certainly had his former GSD teacher in mind. In contrast, Rudolph instructed the young architect to understand that in the exhilarating, awesome moment when he takes pencil in hand, and holds it poised above a white sheet of paper, that he has suspended there all that has gone before and all that will ever be. The creative act is all that matters.

The task of parsing out individual contributions in a series of Gropius’s various partnerships, from Adolf Meyer to TAC, is a scholarly parallel to the critical problem of creative subjectivity. Such stipulations have generally not allotted much to Gropius’s hand. As Franciscono sums up, “the designs of his buildings… were due in significant part to his

---


collaborators, since the character of his work seemed to change as they did.”33 Like the dilemma of the split in quality between Gropius’s early and late work, the scholarly investigation of the collaboration problem has reinforced the logic of authorial erasure by splintering the consistent articulation of work over time. There can be no author without an oeuvre.34

Another discursive index of the problem in authorial function can be located in debates over the expressive content of Gropius’s architecture. In the first years after the architect’s arrival in America, these focused on the notion of a “Bauhaus Style.” Gropius had declared his intention “not to introduce a, so to speak, cut and dried ‘Modern Style’ from Europe.”35 This was, in part, a defensive formulation, intended to guard the American reception of his work against the highly influential characterization of current European architecture as “International Style” by Henry-Russell Hitchcock and Philip Johnson.36 Although the authors did not coin the ubiquitous term “Bauhaus Style,” they had offered a conceptual framework for understanding modernism within a Beaux-Arts idiom and a taxonomy based on criteria of form and expression,

---

33 Franciscono, Book review of Walter Gropius: Der Mensch und sein Werk, 433.

34 An “oeuvre” exemplifies the “principle of unity” that Foucault considers necessary for the definition of an “author.” See Foucault, “What Is an Author?”

35 From a statement made for The Architectural Record (May 1937), reprinted in Gropius, Scope of Total Architecture, 17.

36 The notion of the “Bauhaus Style” was in circulation, and a polemic against it voiced, in Germany already in the 1920s. See, e.g., Hannes Meyer, “bauhaus und gesselschaft” (1929); Ernst Kallai, “Ten Years of Bauhaus” (1930), cited in Barry Bergdoll, “Bauhaus Multiplied: Paradoxes of Architecture and Design in and After the Bauhaus” in Barry Bergdoll and Leah Dickerman, eds., Bauhaus: Workshops for Modernity, 1919-1933 (New York: The Museum of Modern Art, 2010), 41. For a suggestive discussion, see Frederic J. Schwartz, “Utopia for Sale: The Bauhaus and Weimar Germany’s Consumer Culture” in Kathleen James-Chakraborty, ed., Bauhaus Culture: From Weimar to the Cold War (Minneapolis: University of Minnesota Press, 2006), 115-119. While the Hitchcock and Johnson formulation of “style” was articulated largely in relation to a domestic debate on modern architecture, their stated intent to speak “in opposition to those who claim that a new style of architecture is impossible or undesirable” would have presented their polemic as an extension of the discourse Gropius had encountered in Germany. Henry-Russell Hitchcock and Philip Johnson, The International Style (New York: W.W.Norton & Company, 1995), 37. The text was originally published in 1932 as The International Style: Architecture Since 1922, a companion volume to an exhibition held at the Museum of Modern Art. For the American context of the Hitchcock and Johnson polemic, see Pai, Portfolio and the Diagram, 111-115. Moreover, the “International Style” formulation certainly had a much greater impact and relevance in the American context.
as a “contemporary style” consistent in its articulation with Classical and Gothic. “Style is character, style is expression,” wrote the two authors, “The architect who builds in the international style seeks to display the true character of his construction and to express clearly his provision for function.”

Despite critiques directed against the Hitchcock and Johnson model, the “Bauhaus Style” idea remained in common circulation, inviting repeated refutations by Gropius and his supporters throughout his life. At the same time, while Hitchcock and Johnson saw “functionalism” as an expression of the modern style, signifying a desire on the part of the architect “to display the true character of his construction and to express clearly his provision for function,” the term soon thereafter came to refer to a lack of formal or symbolic expressive content. Because such

---


38 See, for example: “All too often, [the Bauhausers’s] real intentions have been and still are misunderstood, namely, to see in the movement an attempt at creating a ‘style’ and to identify every building and object in which ornament and period style seem to be discarded as examples of an imaginary ‘Bauhaus Style.’ This is contrary to what we were aiming at... A ‘Bauhaus Style’ would have been a confession of failure and a return to that devitalizing inertia, that stagnating academism which I had called it into being to combat.” Walter Gropius, “My Conception of the Bauhaus Idea,” *Scope of Total Architecture*, 20-21. This statement also appears, in modified forms, in: Gropius, *The New Architecture and the Bauhaus* (Faber & Faber, London, 1935); Gropius, “Education towards Creative Design,” *American Architect and Architecture* (May 1937); “The Gropius Symposium,” *Arts and Architecture* (May 1952). Notably, the terms “devitalizing inertia” and “stagnating academism” are absent from the original 1935 version (published in England) and appear only in the American publications. Under attack from the very beginning both for its narrow aestheticism and the dogmatism of the formal criteria it established, the “International Style” argument was nevertheless not critiqued specifically for the academic conception underlying it. Instead, it was historicized; for example, by Jordy who took it as proof for his argument about the “academization” of the Bauhaus in America. “The fact,” he wrote, “that the movement could be formulated as a ‘style’ suggested that the phase of initial discovery was past; the work of assimilation, diffusion, variation, and popularization had begun.” Jordy, “Aftermath of the Bauhaus,” 494.

39 Hitchcock and Johnson, *International Style*, 58-59. Hitchcock and Johnson, it should be noted, drew a polemical distinction between the “generally accepted form [of] the idea of functionalism, [which] derives its sanctions from both Greek and Gothic architecture, for in the temple as well as in the cathedral the aesthetic expression is based on structure and function,” and the “doctrine of the contemporary anti-aesthetic functionalists, [who claim that] aesthetic questions must take a secondary place in architectural criticism [to economic and practical problems],” mentioning by name among the latter Sigfried Giedion and Hannes Meyer. The authors’ task was then to distance the “functionalist” modern architecture they championed from what they considered to be the erroneous interpretation of it on the part of the “anti-aesthetic functionalists.” “One may therefore refuse to admit,” they insisted, “that intentionally functionalist building is quite without a potential aesthetic element. ... [T]he European functionalists follow, rather than go against, the principles of the general contemporary style. Whether they admit it or not is beside the point. ... Since the works of the European functionalists usually fall within the limits of the
content could still be located in both Le Corbusier and even Mies, it was Gropius who would most commonly be associated with the “functionalist” approach. This turned the original debate about definitions into an internal contradiction in the interpretation of Gropius’s legacy: it could at once be claimed that his work in America exemplified an “academization” of the modern movement as a Bauhaus Style, but that it was at the same time a non-style, rooted in an arid positivism.  

In his *The Decorated Diagram: Harvard Architecture and the Failure of the Bauhaus Legacy* (1983), Klaus Herdeg offered perhaps the clearest statement of this contradiction. Herdeg’s critique focused on Gropius’s “legacy” as expressed in the work of his former students at the Harvard Graduate School of Design. “Bauhaus legacy” designs were characterized by a dichotomy between plan and elevation, where plans were “diagrams” of functional relationships, and facades unrelated exercises in purely optical play that “ha[d] no meaning beyond their own existence.” The resultant “decorated diagram” could appear at the same time as a “style” and as the perversion of that very concept in the severing of form from content, “program” from “character,” which Herdeg summarized as a disconnect between “seeing and thinking.” The image chosen for the dust jacket—a comparison of the human eye to the camera lens, borrowed international style, they may be claimed among its representatives.” Hitchcock and Johnson, *International Style*, 51-53.

40 See, for example: “But there was a Bauhaus style. It was the style of the century, and it was Gropius’s baby, like it or not.” Hale, “Failure and Success,” 108.

41 Notably, although Herdeg’s text is an overtly polemical discussion, written by a practitioner, rather than a scholarly analysis, it became the rather unlikely definitive interpretation of Gropius’s late work and legacy, still routinely cited. The scholarly and analytical paucity of the text was, moreover, noted in many of the reviews appearing at the time of its publication. See Robert Campbell, Review, *The New England Quarterly* 57 (March 1984): 149-151; Richard Wesley, Review, *The Journal of the Society of Architectural Historians* 45 (September 1986): 310-311; Woods, “Modernism’s Decline”; Segal, “Unkind to Granddad.”

42 Herdeg, *Decorated Diagram*, 2.

43 Ibid., vii.
from *The Scope of Total Architecture*, a collection of Gropius essays—was obviously intended to stand as an allegory of mechanistic vision lacking the human richness of expressive content. (Figure 1) If the diagnosis was fragmentation, the treatment prescribed for future architectural production would lie in the realization that “social and psychological problems ultimately have to find their resolution in aesthetics.” Such resolution, moreover, would be accomplished through an “art of expressing something by means of seemingly opposite meaning,” namely: irony.⁴⁴

The argument for a reconciliation of architectural form and content on the model of a rhetorical device was a diligent application of the ideology of Herdeg’s teacher Colin Rowe. Already at the turn of the 1950s, Rowe was reviving the Classical concepts of “style” and “taste” to use as a weapon against, in part, what he called the “social or sociological ‘pabulum’ that Gropius was promoting at Harvard.”⁴⁵ Rowe’s dialectical reading of modernism as a futile attempt to fuse the “physique-flesh” and the “morale-word” of architecture became one of the more ideologically powerful expressions of modernism’s “failure.” The modern movement’s social utopian promise had run to ground in “mostly trivial moral enthusiasm,” Rowe claimed, while its “physical product” remained invested with “an eloquence and a flexibility.”⁴⁶ His solution to this insalubrious coupling of dead content and still vital form was to sever the latter and reinsert it into a new rhetorical totality, guaranteeing “the enjoyment of utopian poetics without… the embarrassment of utopian politics.”⁴⁷ Rowe’s revival of the Classical aesthetic tradition secured the discursive circuit articulating Gropius as a cipher.

⁴⁴ Ibid., 12-13.
A.2 LIMIT

A key chapter of *Collage City*, the last canonical statement of Rowe’s philosophy, co-written with Fred Koetter in 1978, opens by citing Gropius’s concept of “total architecture”—“an obvious version of the Wagnerian *Gesamtkunstwerk*”—and proceeds to define it as a representative articulation of a drive to extend the field of architectural expertise over the entire built environment, with far-ranging examples like Le Corbusier’s *City for Three Million Inhabitants*, Christopher Alexander’s *Notes on the Synthesis of Form*, Toulouse-le-Mirail, “advocacy planning,” and Archigram’s “instant cities.” Rowe and Koetter see here a detrimental loss of architectural identity in the “cherished prejudice that all buildings can be, and must become, works of architecture.” The “discriminatory concept” of design advocated by Rowe and Koetter as a corrective to such ambitions relies on the maintenance of “form” as a liminal condition or threshold negotiating between “building” in general, or the urban built environment, and “architecture” specifically. In fact, “form” was the operative concept of *Collage City*. The edge of the collage piece suturing the fragmentations of the urban fabric and discriminating therapy for architecture’s disciplinary identity-crisis, “form” was the antidote to the pervasive dichotomies Rowe diagnosed in the contemporary social and architectural field. The neglected other of function-driven design, “form” was really conceived here as a disciplinary boundary whose dissolution was theorized as a threat, a limit that had to remain impervious at all costs.

The target of Rowe’s polemic, subsumed under the categories of “functionalism” and “utopia,” was architecture’s entanglement with a combination of urban planning and information sciences. In the 1960s, the widespread introduction into architectural theory and practice of

---

48 Rowe and Koetter, *Collage City*, 86-117.
techniques borrowed from operations research, the behavioral sciences, and systems analysis appeared a logical development of the early modernist enthusiasm for industrial technologies and efforts to standardize the design process as a means of intervening in the entire built environment and thus spearheading social change. As K. Michael Hays points out, reaction to such tendencies was the persistent subtext of the critical discourse developed around the journal *Oppositions*, in part under the influence of Rowe. The legacy of modernism was polarized here into opposing ideological positions: “autonomy” and “functionalism.” Architecture’s disciplinary autonomy, as “a body of formal elements and operations,” itself a product of modernist discourse, was seen to be threatened by modernism’s *other*, the rationalizing doctrine of functionalism, that tended “on the one hand, [to] reduce architecture to a bloodless pseudo-science and, on the other, serve it up raw, as it were, as a mere condiment for the full optimizing appetite of… consumer capital.”

Thus, in the discourse of *Oppositions*, the thematic of modernism’s “failure” was drawn out in relation to what had already been identified in postwar America with the legacy of Gropius: “function” to the exclusion of “form.”

At this point, it is necessary to confront the other discourse of anti-utopian dialectics that appeared in the field of *Oppositions* as a rock to Rowe’s hard place – that of Manfredo Tafuri. Tafuri’s post-Marxist history of modernism diagnosed the same situation in contemporary architecture, read on a more comprehensive scale as the “rationalization of the urban order,”

---


50 Hays uses this expression to define Tafuri and Rowe as the two opposite poles of attraction for the discourses of *Oppositions*. Hays, “Oppositions,” ix. Ockman points to a more general relevance: “As the two most important theorists of form without utopia during the postwar period, comparable in intellectual and moral intensity, Rowe and Tafuri present an instructive comparison.” Ockman, “Form without Utopia,” 448.

51 Manfredo Tafuri, *Architecture and Utopia: Design and Capitalist Development*, Barbara Luigia La Penta, trans. (Cambridge, Mass.: MIT Press, 1976), 170. For Tafuri, the importation of information-technology-based models into architecture and planning is but the latest manifestation of a more general disciplinary crisis, the roots of which
and the questions he asked corresponded to those confronted by *Oppositions*: “[W]hat remains of the role played historically by architecture? Up to what point does architecture’s immersion in these [positivist] processes render it a pure economic factor?” Tafuri offered another ideological framework for linking the disciplinary crisis of architecture represented by “functionalism” to the narrative of modernism’s “failure.” In his thought, the total built environment, the instrumental “urban order,” was the material manifestation of capitalism’s relentless and systematic cooptation of the real, to which modern architecture attempted, and failed, to respond at the level of ideology. “[T]he crisis of modern architecture,” he wrote, “is not the result of ‘tiredness’ or ‘dissipation.’ It is rather a crisis of the ideological function of architecture.” This was the context in which Tafuri’s American readers would have understood his pithy analysis of Gropius’s disappearance in *Modern Architecture* (1976), co-written with Francesco Dal Co: “For [Gropius in the United States] the break with the climate of the Weimar Republic proved fatal… [His] refusal to remain a ‘master’ and his disappearance into the reality of American professional life were paid for with a harsh price that necessarily affects any discussion of his career.” Tafuri identified the locus of Gropius’s disappearance as the very “reality” at the crux of architecture’s disciplinary crisis.

Gropius’s pursuit of the avant-garde project to enter the means of production inevitably led to his disappearance into the American city as the representation of capitalist “disenchantment” in its pure and total form. The American “functionalism” of Gropius was no

---


53 Ibid., 181.

longer here a betrayal or corruption of the historical avant-garde, but rather the logical endpoint of one trajectory in a series of its ideological projects. “The eye of the constructivists and the radical artists,” Tafuri wrote

had assumed as its own duty remaining wide open behind the mechanical apparatus that governs the world, in the hope of being able to guide the movements of that apparatus. But faced with the discovery that on the set in which one thought oneself able to operate independent of external influences the true directional control was exerted by uncontrollable forces, … [Dziga Vertov’s] “man with a movie camera” is transformed into the man with half-closed eyes destined to end up in the limbo of somnambulism, wherein action remains action, despite the semiunconscious state of the actor. One can, however, maintain that such action without a subject is the only real action, … the only action that reconciles one with the world [as exemplified by] the Gropius of the Pan Am Building and of TAC (The Architects Collaborative).”55

Tafuri’s guiding metaphor of the disappearance of the architectural “object” into the “city” as the concrete manifestation of capitalist relations of production was also a reflection of the significance of post-Keynesian “planning” in the contemporary activity of architects as administrative technicians-organizers of urban territory—a new role that made the avant-garde project of prefiguring a liberated society through architectural design appear hopelessly anachronistic.56 The architect as organizer of urban processes, and no longer the designer of aesthetic objects, appeared as the terminal figure of the avant-garde.

It would be appropriate in this context to juxtapose Tafuri’s reference to the famous still from The Man with a Movie Camera (1928-29), reproduced as the closing image of the Sphere and the Labyrinth, with Herdeg’s allegorical reproduction of Gropius’s comparison between the human eye and the camera. (Figure 2) Arguably, Tafuri’s post-utopian ideology and the anti-utopianism of Rowe depart from a similar set of premises and grapple with a similar set of terms


56 For a discussion of the preoccupation with urban planning and methodology in Italy in the 1960s, see Giorgio Ciucci, “The Formative Years,” Casabella, no. 59 (January/February 1995): 13-27. The closing chapter of Tafuri’s Architecture and Utopia outlines the contemporary urban planning discourses that serve as a foil to his historical analysis. See Manfredo Tafuri, “Problems in the Form of a Conclusion,” Architecture and Utopia, 170-182.
to arrive at very different political conclusions.\textsuperscript{57} The modernist “utopia” for both is the promise of architecture’s reconciliation with the social world, and its demystification leads, along different paths and to different effects, to a confrontation with the concept of “form.” Analogously, the diagnosis of the modern “rationalization of sight” at the root of a historical crisis of architecture can be equally attributed to both.\textsuperscript{58} If for Rowe, “form” is a threshold whose preservation guarantees the harmonious re-articulation of architecture with society, for Tafuri, this formal limit enables their necessary conflict.

Rowe’s \textit{Collage City} celebrated the potential of formal design to constitute an “analogue of politics and perception,” in whose integuments the unavoidable conflicts between individuality and society, “the necessary collisions of freedom and justice,” could be reconciled, and a liberal democratic totality thereby reconstituted at the level of autonomous aesthetic play.\textsuperscript{59} Herdeg’s version of this argument for architecture’s new political efficacy as a product of formal design solutions was outlined in an example he gave of “the most graphic and politically important instance of deliberately manipulating… shape and symbolism.” It involved the shape of a table to be chosen for the 1968-69 Paris peace negotiations between the United States and South Vietnam on one side and North Vietnam and the Vietcong on the other. The solution of a

\textsuperscript{57} Tafuri certainly knew of Rowe. Felicity Scott, for example, speculates that Rowe was “one specter haunting [Tafuri’s essay] ‘The Ashes of Jefferson.’” See Felicity Scott, “Architecture or Techno-Utopia,” \textit{Grey Room} 03 (Spring 2001), 118. Rowe’s argument in the \textit{Five Architects} catalogue—that the architectural neo-avantgarde’s formalism was a historical necessity, confronted with the degradation of modern architecture to a “suitable veneer for the corporate activities of ‘enlightened’ capitalism”—corresponded to Tafuri’s own analysis. Rowe, Introduction, \textit{Five Architects}, 3-4.

\textsuperscript{58} “[T]he cycle opened by the rationalization of sight introduced by Tuscan humanism can function as a rearview mirror—a mirror in which are reflected the ghosts of the contemporary bad conscience—for a history intent upon seeking the beginnings of capitalist \textit{Zivilisation}.” Manfredo Tafuri, “The Historical ‘Project,’” \textit{Sphere and the Labyrinth}, 19. For a discussion of Tafuri’s thematics of the “loss of referent” in the Renaissance, see Vidler, “Disenchanted Histories.”

circular table with two rectangular wings appeared to simultaneously assert the equality of all negotiating partners and subordinate the position of the Vietcong, thus achieving a diplomatic compromise. The table was offered as a model for an architecture of “multivalent form, allowing the coexistence of... fundamentally opposed political positions.”60 (Figure 3)

In his definitive methodological statement, “The Historical ‘Project,’” Tafuri introduced the idea of the “knight’s move,” borrowed from Russian literary formalism, as his own allegory of architectural aesthetics. Rather than redundantly mirroring the reality of the social world, architecture reproduces it obliquely, with a “swerve” into poetic language where the real becomes “estranged.” It was the task of the historian to stay true to the logic of the “swerve,” always tracing architectural ideology’s asymptotal relationship to the real, ever vigilant against the risk of the collapse of all distinctions in the “indifference” of the totally administered world or in utopian flight from it. “At issue,” Tafuri wrote, “is a question of recognizing... the thematic of the boundary intrinsic to forms, of the limits of language.”61 At the same time, in the destruction of the “fullness” of autonomous architectural language, manifested in its “slow transformation into purely technical labor” carried out through “manifold experiments... aimed at finding new roles for the work of a technician, who remains the traditional architect only in the less significant cases,” Tafuri located a contemporary “crisis of architecture.” The critic’s role, he maintained, was to exacerbate that crisis by drawing over and over again the “limit” or the “gap” between such experiments of dissolution into the real and the “forms of the architecture of

---

60 Herdeg, Decorated Diagram, 27.

the Modern Movement.” Ultimately, such “forms” articulated the “swerve” of poetic language, thereby preserving intellectual work and assuring its political promise.62

In his efforts to maintain the promise of an architectural avant-garde, which he shared with Rowe, Tafuri continued to privilege those projects that displayed high modernist values of autonomous aesthetics, even as his programmatically tragic critical position obliged him to insist on their futility. His writings made clear that the proud if impotent refusal of the Seagram Building was always preferable to the purblind somnambulism of Pan Am.63 Whereas for Tafuri “form” was a guarantee of the political efficacy of architecture as an accusatory index of intolerable social contradictions, and of architectural history as a discipline of radical social critique, the very same concept became for Rowe a negation of the necessity of critique in the disengaged freedom of refined sensibility. These two most significant post-utopian discourses on architecture labored in almost dialectical opposition on the problem of retrenchment, against the threat of dissolution. They converged around the figure that represented this threat, the cipher of “functionalism.”

A.3 CRISIS

Nowhere had the thematics of form and disappearance around the figure of Gropius coalesced more publicly and with greater symbolic force than in the “travesty” of the Pan Am (later MetLife) Building. (Figure 4) Designed by Gropius in association with Pietro Belluschi and Emery Roth & Sons, the building and the critical reaction to it, soon after its completion in 1963, became one of the two events commonly invoked as terminal in the narrative of

modernism’s demise. The spectrum of response to the building described an entire economy of visual tropes, productive of an irresolvable conflict between form and its negation, vision and its occlusion. That the building appeared to collapse these foundational distinctions was the precise source of the outrage it provoked and the reason that it could stand as a potent representation of architecture in crisis. At the same time, the polemics around Pan Am serve as an excellent case study of a displacement of issues of architecture’s social and political agency onto issues of aesthetic quality and design integrity.

The main point of contention that emerged as soon as preliminary designs were released was that the 59-story concrete slab, with its north-south orientation, blocked the visual axis of Park Avenue. The space around Grand Central Station, wrote Douglas Haskell in 1955, is a study in the urbanistic use of empty space, with the low-rise of the terminal like a piece of furniture that “lets the tall buildings around it compose themselves as if in a big room.” This void, and the “endless vista” opening up behind it, was the spatial essence of this urban complex and the source of its beauty. It was this void that the Pan Am building negated, wrote Huxtable in 1961, with “its rising mass [that] black[ed] out sky, light and view.” “There was no pleasanter sight in New York,” she insisted, “than the open space after the demolition of the old Grand Central office building, no more depressing sight than the heavy steel of the Pan Am Building filling it up again.” The lost void and the aesthetic pleasure it provided became an extraordinary focus of desire: the freedom of the eye in its swift movement down the axis of the

---

64 The other event is the 1972 demolition of the Pruitt-Igoe housing development, designed by Minoru Yamasaki.


avenue, and the release of the sky at the vanishing point, were rhapsodized in numerous
commentaries. (Figure 5) “All that is gone now,” wrote Paul Goldberger in 1979.

[T]he precast concrete monster that was set in between the New York Central Building and the Grand Central Terminal… soars way above the pyramidal top and steals from the sky the role of backdrop. And it is wide, so wide that the eye can no longer travel around the older tower and have a sense of Park Avenue’s continuity to the south. In short, it blocks everything.  

A corollary to the thematic of the void itself was the issue of the manner in which it was negated. Pan Am did not replace the space it took from the city with a monumental form, as was anticipated, and proposed by Gropius himself, who envisioned the building as an anchoring landmark and focal point for the area, its shape distinctive enough to be “grasped at a glance like a symbol.” The built structure appeared to be the very opposite of this monumental coupling of formal clarity and symbolic legibility—a “mass,” a “behemoth… shouldering aside all sense of proportion and elegance in its gigantism.” That Pan Am was a colossal obliteration of empty form as auratic presence, of the Miesian “void as a symbolic form” celebrated by Tafuri, was discerned with absolute precision by Claes Oldenburg in a sketch for an urban monument as a surreal melting ice-cream bar, the informe looming at the vanishing points of Manhattan’s Cartesian geometry. (Figure 6)

The frustration of the transcendent pleasures of disembodied vision in this building as amorphous scale-less mass was one side of its foreclosure of the modernist narrative—what Joan

---


Ockman has called its “epic degeneration.” The correlate was a collapse of distance and erasure of distinctions in the building’s interface with its site. Unlike Seagram and even Lever House, to borrow again from Ockman, Pan Am was “unable to liberate itself from the urban fabric,” to “effectively negotia[te] new and… radical relationships with the preexisting urban context.” At street-level, Pan Am’s grey curtain-wall simply contributed one more modulation to the staccato rhythm of the surrounding facades, merging seamlessly into the undifferentiated surroundings. Instead of urban estrangement, Pan Am offered a “vertical city”—channeling several modes of transportation through the interstices of its structure, requiring more utility services than any other city building, 2,000 gallons of water per minute, and 20,000 kilowatts of electricity, and handled by the telephone company as an independent city. Poured grotesquely into the void taken from the metropolis was the metropolis itself, a replication of the logic of Manhattan on the site of what was expected to be a formal monument to the negation of this logic. Pan Am as a system of representations—the last cipher—could become a tombstone for modernism exactly inasmuch as its undifferentiated mass, in superseding the dialectics of form and void, could signify the loss of distinctions and erasure of limits threatening architecture in its confrontation with the city. Its abrogation of the claims of vision appeared to occlude, more than that, the possibility of freedom, constituting it as a material allegory of peril.

---


72 Ibid., 196, 195.


74 More recently, the aesthetics of Pan Am as the informe were revisited by Rem Koolhaas in a provocative inversion of terms within the formative dialectic between the architectural object and its urban context. “[T]he avant-garde needs the city,” Koolhaas posed, “but… the city can do very well without the avant-garde.” In this context, Pan Am emerges as the true avant-garde object, one that revolutionizes architecture by virtue of refusing to
However, as the historical material unearthed in a recent monograph on the reception of Pan Am demonstrates, behind the nostalgia of the void and the dialectics of form burgeoned an entire strategic machinery of local protest hinging on the problem of “air rights.” The decision on the part of the New York Central Railroad, a privately-owned company, to build an office tower over the Grand Central railroad tracks was motivated by a conjunction between zoning laws, which allowed high density construction around Park Avenue, and climbing property values in the area with the influx of corporate investment. Even before the plans for Pan Am were announced, a discourse of “open space” was beginning to emerge, which pitted civic or public rights against the development rights of private property. Behind the problem of space and what comes to fill it was the problem of control and its instruments, in the terms of which the dialectics between public and private were translated into the dialectics of the visible and the invisible, the transparent and the occluded. Private “air rights” were an instrument of ownership that was increasingly becoming, in the words of one observer, “faceless.” Speculative building revolutionize the city. “The largest building in the world,” Koolhaas continued, “is so effortlessly integrated that it is, ironically, both unavoidable and hard to locate. … It is a disappearing act, an apotheosis of background. It is one of those ironies of history that the one operation that could be called revolutionary—the building that embodies in its section the most fully developed representation of the ‘metropolitan’—has been lost in a fog of indifference, strictly (or can one by now say ‘merely’?) through its lack of architectural merit.” The “vertical city” no longer appears monstrous; in fact, its very surrender of “architectural merit” in the faithful replication of the city, its “disappearing act,” offers it up to be seen anew as an “unacknowledged, invisible utopia.” Rem Koolhaas, “Enabling Architecture” in Robert E. Somol, ed., Autonomy and Ideology: Positioning an Avant-Garde in America (New York: The Monacelli Press, 1997), 294-299. Koolhaas’s re-envisioning of Pan Am as “[a] project that straddles, orients, accommodates flows” (ibid., 298) invokes a recent revival of the functionalist “diagram,” once ridiculed by Herdeg. This recent discourse opposes definitions of avant-garde criticality through the problem of the boundary, or the mediation between architecture and its social context. Operating outside of the dialectics of mediation, the “functional” diagram is therefore rehabilitated for a new post-avantgarde architecture of process and performance, in which the relationship of design to society can be construed in non-oppositional ways. See Pai, Portfolio and the Diagram, 278-290; Robert E. Somol and Sarah Whiting, “Notes around the Doppler Effect and Other Moods of Modernism,” Perspecta 33 (2002): 72-7. Here, however, the problematic of peril that had originally haunted the discourse of mediation is submerged. No longer hazardous, the erasure of formal limits becomes an operative code for the production of innovative design, the informe surreptitiously given back to form. Arguably, this is an aestheticization of the politics of architecture analogous to that discussed here with respect to the early reception of Pan Am, albeit with the opposite aesthetic values.

75 Douglas Haskell, letter to August Heckscher, 25 March 1962, cited in Clausen, Pan Am, 336.
as it was shaping the urban fabric materialized through channels of dispersed decision-making—money and investment management, financing through banks and insurance companies, building market projections—organized around an immaterial property—finance capital. The urban right to air was no longer being exercised by entities, individual or corporate, with transparent or intelligible motivations and responsibilities (Pan Am was planned as a real estate investment by the New York Central Railroad, then sold to Pan American Airlines, then sold again to MetLife Insurance), but rather by variations in a set of processes, both invisible and immaterial, that converged under the heading of “private property.” In opposition to this space of occlusion, “public space” was construed as a space of transparency and the void.

Therefore, the idea of open space was linked to a juridical-economic formulation of a new danger, a perceived uncertainty or lack of control, which was neither expressed nor exhausted by the dialectics of form. It was rather a problem of agency, its limits and its instruments—a problem of the legibility of the limits to that which was invisible and immaterial. This danger gave rise to a set of discourses and strategies—including architectural criticism that was preoccupied with the nostalgia of the void and the aesthetics of form and its limits, but also the burgeoning landmark preservation movement taking shape around the defense of the Grand Central Terminal. It also involved the problem of architectural agency in the transactions of design with its new “faceless” client. When the key question was raised, that of how much open space the architects could preserve given the client’s prerogative to optimize the speculative use

76 Douglas Haskell wrote: “Under the heading of ‘private,’ we have the new entrepreneur, the canner of office space under 100% financing. These people operate with an apparatus of leases, leasebacks, overlapping commitments, separate sales of land and buildings which are physically inseparable, syndicates, the swapping depreciation accounts.” Haskell, “Half a Revolution,” introduction to panel discussion, “New Dimensions of Architectural Knowledge,” AIA annual convention, Dallas, May 1962, cited in Clausen, Pan Am, 337.
of its air rights, the conclusion was always that the building’s mass was “inescapable,” the
solutions—merely “aesthetic refinements,” the architects—“victims of circumstance.”

Such critical discourses turned around the perceived impotence of architects as agents for the set
of political techniques coalescing around the problem of immaterial property and its occluded
operations, and the irrelevance of the artifact that focused and channeled such techniques. From
the standpoint of a properly architectural problematic, what the architects of Pan Am did was not
so much the point, the point was the limits of what they could do. The politics of Pan Am was
energized at the limits of agency: “public” agency, “private” agency, and architectural agency in
an overlapping constellation. This political conjunction has since been overshadowed by the
aesthetic discourse of form and void, which had functioned as a frame for the peril of limits, but
is now naturalized as a matter of design quality.

The historical example of Pan Am demonstrates the limitations of analyzing architectural
production in terms of design artifacts as expressive vessels for aesthetic and ideological content.
There are issues of architectural practice that, even as they may occasionally involve buildings,
remain, like air rights, immaterial. As the problem of agency addresses practice, it requires a
strategic rather than a hermeneutic reading. It is not the task of this dissertation to theorize a
strategic framework of interpretation, but rather to approach it empirically in a series of specific
historical studies.

---

77See Clausen, Pan Am, 165.
1 THE POLITICS OF PRACTICE IN THE 1920s

A spider conducts operations which resemble those of the weaver, and a bee would put many a human architect to shame by the construction of its honeycomb cells. But what distinguishes the worst of architects from the best of bees is that the architect builds the cell in his mind before he constructs it in wax.

--Karl Marx, *Capital* (1867).¹

“Architects, sculptors, painters ... all of us must return to the crafts”??—No, we must move forward toward the demanding service of the intellect!

--Adolf Behne, “Art, Craft, Technology” (1922).²

The Weimar Republic, notes historian Charles Maier, “was a system in which the political implications of every distributive or cultural decision were always visible.”³ The relationship between Weimar-era avant-gardes and politics has been well-discussed. The very idea of the avant-garde, of course, implies a link between political and cultural radicalism. Beyond ideological affinities, pragmatic alliances have also been addressed—as, for example, in the case of relationships between the Bauhaus and the Social Democratic party.⁴ However, Maier’s observation hints at a systematic pervasiveness of the political that exceeds questions of ideological orientation or pragmatic affiliation. He traces the emergence in the early years of the twentieth century of a novel mode of political practice, replacing or supplanting earlier political forms such as parliamentary representation and mass revolt, and defined by a corporatist strategy

---


³ Maier continues: “The length of working day, the percentage of contributions to the social insurance pool, the permissiveness of art and mores were all issues that implicated the regime itself.” Charles S. Maier, *In Search of Stability: Explorations in Historical Political Economy* (Cambridge, MA: Cambridge University Press, 1987): 268.

of alliances and oppositions among organized groups, each with its own internal hierarchy of governance. This evolution in political practice is a key factor in the success of the revolutionary movements that open the century, in turn making a profound mark on the formation of the artistic avant-gardes. For the revolution to succeed, the state had to enter the revolution. The implications for avant-garde practices of this realignment in the very conduct of politics have not been explored. Taking the power structure of interest-group politics as an analytical framework entails posing for artistic production the problems of strategic organization, representation, and identification (accepting that “interests” are not material givens but products of the political process).

The establishment of functional state institutions in the Weimar Republic was accompanied by the emergence of new problems of democratic organization, involving strategies of socio-political stratification and representation. Because such political practices took the entirety of the social fabric as their subject, they also presented concrete problems of identification for members of cultural circles. To what social group, already claimed or yet undefined, did the cultural producer belong; and what mode of relation structured that belonging? Not only did Weimar-era avant-gardes engage in multiple forms of organized affiliation—groups, institutions, or networks—and pursue attendant discourses of community-formation, but they also engaged with discourses of representation. The most important of the latter was the discourse on the intellectual and his relationship to “class,” which was the dominant Weimar-era category of socio-political stratification. The idea of intellectual production as a paradigm of artistic practice was thus borne by the contingencies of democratic state formation.

---

An important precedent for any discussion of that relationship should be considered before proceeding. The avant-garde was first analyzed in relation to a concept of intellectual production by Venice Institute theorists. Manfredo Tafuri, for example, proposed that at stake in the activities of the Weimar avant-garde was “the very function of the intellectual.” Francesco Dal Co has also traced the origin of an intellectual conception of artistic practice in modern German architectural discourses to the nineteenth century. However, because both read intellectual activity through the lens of ideological critique, they ultimately gave an apolitical interpretation to the “function of the intellectual.” Dal Co demonstrates that a fundamental relationship between two binaries—that of intellect and feeling, and that of the individual and the group—supported the dialectic of Kultur and Zivilisation fundamental to German modernism. The city, as the classic form of civilization, was not only the site of communal fragmentation—where, according to Ferdinand Tönnies, “individuals or families are separate identities”—but also the “place of the intellect”—where, in the words of Oswald Spengler, “[m]an, as civilized, as intellectual nomad, is again wholly microcosmic, wholly homeless, as free intellectually as hunter and herdsman were free sensually.” The task assumed by art was to reestablish a new

---


7 Dal Co’s inquiry is wide-ranging and multi-disciplinary: “It is… clear that the tradition that formed in the convergence around similar or related themes in the work of some of the principal exponents of German culture—from Johann Heinrich von Thunen to Alfred Weber, Ferdinand Tönnies to Oswald Spengler, Werner Sombart to Max Weber to Georg Simmel, Friedrich Naumann to Theodor Heuss to Hugo Preuss—had a lasting and decisive influence on the internal developments of the architectural culture, as the history of the Werkbund from 1907 to the 1920s serves to demonstrate.” Francesco Dal Co, Figures of Architecture and Thought: German Architecture Culture 1880-1920 (New York: Rizzoli, 1990), 30.

8 Cited in Dal Co, Figures of Architecture and Thought, 26, 27. Emphasis in the original.
community within the intellectual and individualistic element of the city by discovering a mediating term between “division” and “joining.” That assumption of intellectual “mediation,” or “representation,” Dal Co concludes, is what destined architecture to become “essentially an ideological construction” when architectural “language” surrendered its cultural autonomy and was placed in a dialectical relation to “politics [in] its broadest meaning and historical perspective,” which is simply the totality of the “real.”

For Tafuri as well the relationship between architecture as an intellectual activity and politics is constituted through mediation or “representation.” He describes the ideological context of avant-garde discourses between 1917 and 1920 as a tension between organized party politics and a “spontaneist” thesis, embraced by the Weimar left. It was the latter, Tafuri asserts, that animated the messianic hopes of the avant-garde, even as it led to a misinterpretation of the Russian October Revolution as “the epiphany of the Spirit self-fulfilled in the proletariat.” The “anti-bureaucratic stance” of the avant-garde was, then, directed at the Social Democratic “compromise” of the Weimar Republic. Tafuri theorizes how idealization of the Soviet state, coupled with theoretical contradictions in the German Social Democratic platform, led the post-1922 avant-garde to embrace a paradoxical anti-bureaucratic and apolitical ideology of industrial

---

9 As theorized by Georg Simmel, the city only “appears as dissociation [but] is in reality only one of the elementary forms of socialization.” Cited in Dal Co, Figures of Architecture and Thought, 61, 64.

10 “[T]he mediation of politics,” writes Dal Co, “condemns the modern project to operate within the confines of a now definitively secularized reality, assuming its rituals, its teleologies, and its techniques. The relationship between the artistic project and the world is thus stood on its head; the project no longer possesses an autonomous idiom, but is forced to ‘sublimate’ creatively the requirements of reality.” Dal Co, Figures of Architecture and Thought, 85.

11 The “spontaneist” thesis holds revolution to be the inevitable outcome of the historical development of class conflict.


13 Ibid., 122-3.
organization. The avant-garde saw technology and organization as a “fiction,” a revolutionary “image” that it tried to represent. Thus industrial organization had to remain for the avant-garde explicitly ideological “in order to be expressed with all the fullness and completeness that belong to pure intellectual elaboration.” The avant-garde’s intellectual-ideological function, therefore, serves to “declare once again its nonpolitical nature.” In juxtaposing politics as a real or practical process to ideology as a fictional image of the latter, both Tafuri and Dal Co fail to engage with the politics of intellectual production.

14 The Social Democratic program of economic planning, Tafuri argues, was based not so much on the state control of the economy but rather on the preservation of extant forms of organized monopoly capitalism, “humanized” by a transfer of power to the socialist state. According to the theory of “spontaneity,” the process of ever-increasing capitalist organization was not to be interfered with as it would naturally lead to its own elimination. The proletarian state would not, therefore, present an alternate form of economic organization, but rather negate its deleterious consequences for the worker. As it turned out, this “split between politics and the economy” would appear to be reproduced in Lenin’s own plan for electrification and the industrialization of the country. Thus it was no longer anarchy but the centralized organization of production that represented an “image” of revolution embraced by the avant-garde. That investment in economic organization without a corresponding political organization made the constructivist turn of the avant-garde “purely ideological.” Ibid., 125.

15 Ibid., 137, 145, 148.

16 A case in point is Tafuri’s partial reading of the theoretical conflict between “spontaneism” and “organization” in Marxist discourses of the period. The polemical counterpart to Rosa Luxemburg’s theory of spontaneous mass action, Lenin’s thesis of “organization” required the strategic participation of an intellectual “vanguard” whose task would be to induce a revolutionary consciousness within the proletariat and to organize it for political action. Thus, the debate actually involved opposing strategies of political organization, which addressed the function of “intellectual” leadership as a central problem. See, e.g., Ernest Mandel, “The Leninist Theory of Organization: Its Relevance for Today” in Revolutionary Marxism and Social Reality in the 20th Century: Collected Essays of Ernest Mandel, ed. Steve Bloom (Atlantic Highlands: Humanities Press, 1994), 77-127.

The fact that the politics of intellectual production occupy a blind spot in Tafuri’s analysis is perhaps ironic, given that the political function of architecture as intellectual work is the focus of his research. It is possible to see the concept of “ideology”—that, in the words of Georges Teyssot, “hovers like some toxic event, undefined, irresolute” in Tafuri’s thought—as an obstacle to his theorization of politics. Georges Teyssot and Paul Henninger, “One Portrait of Tafuri,” ANY 25/26 (2000): 12.
1.1 STRATEGIES OF ORGANIZATION

Groups, movements, exhibition societies, and other forms of collective affiliation among artists are characteristic of the modern period in general. The artistic organizations of the Weimar-era avant-gardes, however, were distinguished by an approach that married an ideological platform to the pursuit of institutional models of formation, as well as, frequently, affiliations with existing political institutions. In that respect, Marcel Franciscono has proposed for example, Weimar avant-garde groups “constituted an essentially new type of artistic organization.”17 Moreover, he notes, of all the protagonists of Weimar architectural history, it is Gropius who typified that institutional orientation most fully, choosing as his preferred mode of artistic agency “programs of practical action” and “proposals directed at solving concrete and immediate problems of architecture and education,” rather than “words” and “visionary proposals.”18 What accounts for the innovation in those instances of group formation in which Gropius was a key participant, I would like to suggest, was that they were modeled specifically after contemporaneous forms of political association.

17 “[The] notable and characteristic groups of the time,” Franciscono writes, “combined in a singular fashion the intellectual solidarity, visionary spirit, and far-reaching commitment to cultural renewal… with an involvement in practical issues of art education and the relationship of art to the state…. In this respect, they differ significantly from the earlier, more narrowly conceived twentieth-century artists’ groups and secession movements, or the Werkbund.” Marcel Franciscono, Walter Gropius and the Creation of the Bauhaus in Weimar: the Ideals and Artistic Theories of its Founding Years (Urbana: University of Illinois Press, 1971): 149-150.

The Weimar avant-gardes shared those modes of collective affiliation with contemporaneous avant-garde groups in Soviet Russia and revolutionary Hungary. Tafuri observes, for example, that “the Arbeitsrat was to reveal itself to be anxious for [an] institutional bond with the innovations, especially those on an organizational level, then underway in Soviet Russia. Nor must it be forgotten to what an extent the Berlin groups—from the Arbeitsrat to the Novembergruppe, until the Ring—had as one of their primary objectives a relationship between avant-garde experiments and national and municipal institutions (educational, administrative, and commercial).” Tafuri, “USSR-Berlin,” 128.

18 Franciscono, Walter Gropius, 125.
This is most evident in the Arbeitsrat für Kunst (Worker’s Council for Art), founded in 1918 explicitly on the model of the revolutionary Räte or “workers councils.” The same group, however, advanced a utopian ideology, ostensibly distancing itself from practical forms of political activity or concrete political goals. In that respect, the evaluation of the political meaning of Weimar artistic groups based on their declared ideological positions can be misleading. “I want to found an apolitical community here,” Gropius remarked on his intentions for the Bauhaus, for example, in a clear statement of political withdrawal. But the reason he gave for that desire sets it in a concrete context that works to essentially reverse its ostensible meaning: “I now see quite clearly,” Gropius explained, “each party is dirt, it creates hate and more hate. We must destroy the parties.”19 The reference is legible as part of a political argument with Gropius’s interlocutor, the architectural critic Adolf Behne, an Arbeitsrat colleague and ideological fellow traveler—and an active member of the USPD (Independent Social Democratic Party).20 Rather than his apolitical convictions in general, Gropius declares here his opposition to a specific form of political organization. In 1920, when he wrote the letter cited above, Gropius was exploring an alternative model of political collectivity for artistic practices, expressed in his conception of the Arbeitsrat as a “conspiratorial” elite, a vanguard “Geistes-Clique”—in other words, a revolutionary cell.

As a model of artistic practice, however, the Bauhaus is usually discussed in relation to industrial, rather than political, organization. It is well known that Gropius’s initial conception


20 Behne was a member of the Social Democratic Party (SPD) before the war, and of the USPD after the war; he also wrote for socialist periodicals Die neue Zeit and Sozialistische Monatshefte. See Rosemarie Haag Bletter, Introduction to Adolf Behne, The Modern Functional Building, trans. Michael Robinson (Los Angeles: Getty Research Institute for the History of Art and the Humanities, 1996), 7.
identified the institution with medieval *Bauhütten*, or artisan guilds, and in later years the relationship between the Bauhaus and large-scale industry was also addressed. The relationship to the industrial model, however, must be understood in light of its function in the prewar Werkbund. Frederic Schwartz has shown that, already before the war, Gropius was among those architects seeking an alternative to the Werkbund’s dominant model of “spiritualized economy” to be achieved through strategic association with large-scale industry, the *Grossbetrieb* (trust or cartel).\(^{21}\) At the same time, remarkably, the cartel, in its capacity to regulate the market and suppress speculation, was associated with the ethical productive spirit of the medieval guild. The mediation of the latter, in turn, could align the cartel as a form of industrial association with the modern labor union as a form of political association: “The trust looked back to the guild of the past and embodied already the socialism of the future.”\(^{22}\) While Gropius’s postwar proposals for artistic organization still revolved around the *Hütte* model, its association with the cartel was abandoned. His writings of the immediate postwar period exhibit a reaction against prewar “organizations grown to grotesque proportions,” reflecting a widespread belief that the “*Weltvertrustung*” [universal cartelization] of corporate capitalism had been both a major contributor and an irreversible casualty of the war.\(^{23}\) If the postwar artistic guild could offer a workable alternative to the “large spiritual organizatio[ ]” of the Werkbund, it would have to draw on a new set of associations.\(^{24}\)

---

\(^{21}\) As this was the model championed by Hermann Muthesius, Gropius’s opposition to the latter in the 1914 Werkbund debate is instructive. See Frederic J. Schwartz, *The Werkbund: Design Theory and Mass Culture before the First World War* (New Haven: Yale University Press, 1996), 79.

\(^{22}\) Ibid., 114.


\(^{24}\) “[During the period before the war] we designed artistic ashtrays and beer mugs, and in that way hoped to work up to the great building. All that by smooth organization. That was an incredible presumption on which we were
There was a readily available model at hand that would seem to offer the simplest solution to the problem of scale and an obvious counterpoint to the Werkbund paradigm—the \textit{Kleinbetrieb} (small business) model of industry that had been displaced by the Werkbund at its foundation.\footnote{See Schwartz, \textit{Werkbund}, 115.} Neither the Arbeitsrat nor the Bauhaus, however, was conceived as an association of small producers. In fact, as has been frequently noted, Gropius’s management of the Weimar Bauhaus lacked any clear vision of the relationship between the products of its workshops and large-scale industry, which was the central problem of the Werkbund.\footnote{It was not until 1922-1923 that the question of organizing the workshops for production was first consistently discussed at the Bauhaus, and the mass-production of Bauhaus objects on a large scale would, in fact, never be accomplished. For a discussion, see Robin Schuldenfrei, “The Irreproducibility of the Bauhaus Object,” \textit{Bauhaus Construct: Fashioning Identity, Discourse and Modernism}, ed. Jeffrey Saletnik and Robin Schuldenfrei, (London: Routledge, 2009): 37-60.} On the other hand, starting with the famous Address to the Students of 1919, Bauhaus documents demonstrate a clear preoccupation on Gropius’s part with the institution’s publicity or public relations in general. The \textit{Hütte} model, in fact, had another connotation—that of a “small, secret… conspiracy[y].”\footnote{Walter Gropius, “Address to the Students,” in Wingler, \textit{Bauhaus}, 36.} “I suggest,” Gropius stated to the Bauhaus community in 1919, “that, for the time being, we refrain from public exhibitions and work from a new point of departure, so that, in these turbulent times, we can collect our thoughts anew” and work out how to present the institution to “the entire people,” whose “community of spirit [artists need] as much as [they] need bread.”\footnote{Ibid.} Such logic situated the Bauhaus within the public sphere of political discourse, rather than the circuits of economic exchange.
Gropius’s strategy for the Bauhaus was identical to his concurrent program for the Arbeitsrat. “[W]e can be thankful,” he posited to that group in 1919, “that a secret mystery still hangs over the Arbeitsrat… We have to trust our strength to persevere until the day when we can stand… fully prepared before the public [Öffentlichkeit].” Such records are traces, I would like to suggest, of a shift in Gropius’s overall strategy of collective association for artistic production, from the model of organized production and economic planning that dominated prewar German discourses, to the model of political affiliation and representation. Tellingly, in a 1920 speech before a local parliamentary assembly, Gropius equated the Bauhaus’s spirit of cultural experimentation to a development… [that] already is taking place everywhere in the country… . [T]oday, adaptation to the completely changed times… means experiment in the usual sense of the word. You can certainly see this development in politics; it is exactly the same. [A]nyone who governs… must today always look upon his government as an experiment.

When, the same year, Gropius proclaimed his opinion that “each party [was] dirt,” he was echoing the ideological position of the Worker’s Councils, or Arbeitsräte, movement. Extra-
political labor organizations that had a key role in the 1918 Revolution, Workers Councils served as the explicit model for the Arbeitsrat für Kunst group. Originally conceived as a radical alternative to the bourgeois parliamentary system, the Councils movement focused on securing labor’s control of the national means of production through an independent hierarchy of temporarily elected delegates—from the factory, to the region, up to a general “economic parliament.” During the process of Weimar state formation leading from the revolutionary break to the establishment of functional governing institutions, however, the Councils underwent a strategic transition. While the “transcendence of parties and parliamentarism,” as one representative wrote in 1920, remained their ideological platform, the Councils’ political strategy now moved away from the goal of economic socialization to that of integration within the new political structure of the state. Already in 1918, the Councils fought for inclusion in the Weimar constitution, and were thus “anchored” within the parliamentary system as a quasi-party. By 1920, the Councils had largely abandoned in practice the pursuit of the socialized economy. Thus, the very institution whose radically anti-political ideology was emulated by the Arbeitsrat für Kunst—and the Bauhaus—was, in fact, undergoing a transition similar to that of the two artistic groups—from the paradigm of organized production to that of political articulation and competition.

While control of production and economic planning certainly remained central political issues during the Weimar Republic, and therefore remain key sites for the analysis of contemporaneous cultural discourses and practices, we must also explore the cultural impact of

32 Maier, Recasting Bourgeois Europe, 139.
34 Ibid., 64.
the emergence in the postwar years of what Maier has described as a new “corporatist” politics, characterized by “the displacement of power from elected representatives or a career bureaucracy to the major organized forces of… society….”\textsuperscript{35} The Weimar Workers Councils movement was one example of that transition. The same process could be traced in the parliamentary counterpart of the Councils. The Weimar Republic Reichstag at once democratized and professionalized its Kaisereich predecessor, replacing the aristocratic dominance of local “notables” (\textit{Honoratioren}) with government by alliances of centralized parties and organized interests.\textsuperscript{36} Similar processes of organization unfolded across Western Europe, and encompassed both left and right. On the left, the Marxist Third International of 1921 represented a strategic reevaluation of the new distribution of power. With its platform of party discipline and dogmatism of class unity, the Third International, as Maier puts it, “responded to the same imperatives of organized political and economic competition to which successful bourgeois groups were adapting. The communists were not prepared to play the game of interest-group politics, but unyielding opposition to the system required preserving a party that was at least as centralized and cohesive as those participating.”\textsuperscript{37}

Ideological discourses, in turn, responded to new modes of political practice. The \textit{Kultur-Zivilization} binary central to the German philosophical and cultural tradition was employed in Weimar-era discourses in service of a critique of the emergent corporatist democracy. Within that dialectic, communal bonds, tied to locality (the \textit{Heimat}) and organic national culture, were

\textsuperscript{35} The term “corporatism” is advanced by Maier with respect to contemporaneous developments in Germany, Italy, and France. See Maier, \textit{Recasting Bourgeois Europe}, 9.


\textsuperscript{37} Maier, \textit{Recasting Bourgeois Europe}, 152.
opposed to atomization, the rule of the intellect, and cosmopolitanism. Because this critique of the “Enlightenment” implicated the long-standing and overdetermined French-German antagonism (heated up by the military defeat), it was easily translated into a critique of the new Weimar constitutional system that, with its displacement of local (estatist) with centralized political organization, appeared to reproduce the “Jacobin” model of “mass democracy.” German Democratic Party member and parliament representative Theodor Heuss summarized the common themes of such critiques:

Germany has become infatuated with a couple of catchwords. Democracy ‘atomizes’ the people by turning the individual, as a fundamental elector cut off from any social estate and heritage, into a political factor. This *homo politicus*, pronounced sovereign on voting days, is regarded as a fiction; a person is not a citizen per se, but a member of a society of manifold stratifications, which is now being leveled by force of doctrine.\(^{38}\)

The same thematics was invoked by leading intellectual Thomas Mann in his, at the time sensational, embrace of Weimar as a properly “German democracy.” The Weimar regime, he wrote,

is the mean between aesthetic isolation and undignified leveling of the individual to the general; between mysticism and ethics; between inwardness and the state; between a death-bound negation of ethical and civic values and a purely ethical philistine rationalism; it is truly the German mean, the Beautiful and Human, of which our finest spirits have dreamed. … [A] unification of our political and national life…\(^{39}\)

In the name of a reformed *Kultur*, Mann proclaimed: “The State has become our business.”\(^{40}\)

The dialectical equation Dal Co outlines as the central task taken on by the avant-garde—how to arrive at a new form of community within the very medium of the *metropolis*—was translated during the Weimar Republic into a problematics of the new *polis*. Gropius was no great dialectician, but he was clearly steeped in this logic and the language that carried it. In


\(^{40}\) Ibid., 106.
America, he would frequently embrace “democracy” as a “unity in diversity”—the mediation of thought and feeling, of business and culture—and declare it the central concern of the architect. That common term of postwar American liberal democratic discourses could resonate with Gropius because its dialectical formulation recalled the political debates of the Weimar-era democracy. A 1944 letter written by Ise Gropius, the architect’s wife, demonstrates that the couple was aware at least of Mann’s position on democratic political organization. Adapting the terms of Weimar discourse to the new cultural context, Ise Gropius replaces the erstwhile Jacobin *Zivilization* with “Anglo-American civilization,” writing that

[Walter and I] have asked ourselves… how far we are capable to accept [sic] this Anglo-American civilization idea for the sake of its good sides and how far we are willing to bury our more absolute conceptions. Thomas Mann has turned this problem around already during [sic] the First World War and decided then for the other side. … Maybe we ask too much if we ask also for *Kultur* within a tamed civilization; maybe we have to make a choice? … Until then we may continue to explain to each side the disadvances [sic] of the other side. The advantages are obvious anyway.42

1.2 INTELLECTUAL LABOR

Parallel to the interest in modes of collective affiliation and public representation in the context of an emergent corporatist democracy, one can trace a rise in ideation, as opposed to material production, as a paradigm of artistic activity. This transition is typically understood in


42 Ise Gropius to Herbert Bayer, 3 February 1944, translated from the original German by Ise Gropius, Isaacs Papers, AAA, Box 7. Gropius must be referring to Mann’s famous speech of 1922, because during the war Mann was an ardent nationalist, justifying the war exactly in terms of support for German *Kultur* against the encroaching forces of civilization. That earlier position is expressed, for example, in his *Reflections of a Nonpolitical Man* (1918).
the economic context of the eclipse of handicraft production by large-scale industry. However, another important referent can be found in the contemporaneous discourse on the relationship between intellectual work and the state.

Both Franciscono and Schwartz have demonstrated that, already in the prewar Werkbund, the opposition between handicraft and industrial production was supplemented and even supplanted by a concern for the integrity of design as an intellectual practice. Older distinctions, both formal and moral, between the product of the hand and that of the machine had in the twentieth century gradually become replaced by a shared concept of *Gestaltung*, an abstract “formal conception, in respect to which the distinctive values imparted by the touch of the craftsman’s hand in execution were of secondary consequence.” As revealed by the Werkbund debate of 1914, the assumption that products of both hand and machine shared a basic relationship to conceptual form-giving processes was shared by all participants—the real issue was whether the artist or architect’s privileged position in the generation of creative insight should be maintained, or whether it should only serve as a stepping stone to the development of a broadly based aesthetic culture.

The philosophy and history of art was an important reference for the relationship between “form” and “technology” that preoccupied the discourse of German modernism. For example, in Alois Riegl’s concept of *Kunstwollen*—a primordial creative will—the history of art was seen as “a constant struggle with the material, [in which the] primary element is not the object or

---

43 Here the canonical example is perhaps that of Laszlo Moholy-Nagy’s “telephone pictures,” the specifications for which the artist claimed to have called in to be manufactured at a sign company, thus replacing craftsmanship with concept as artistic product. See, e.g., Rainer K. Wick, *Teaching at the Bauhaus* (Ostfildern: Hatje Cantz Verlag, 2000), 133-134.


45 See ibid., 64-69; Schwartz, *Werkbund*, 147-163.
technique, but rather the creative thought that tends to expand its sphere of activity….”46

Through the action of creative thought, art (and architecture) is freed from a purely “materialistic” condition, and realized as the manifestation of the “spirit.”47 Whether the artist or designer was creative agent, or merely conduit for the expression of a metaphysical drive, the discourse shifted focus from aesthetic “objects” or artifacts to a preoccupation with artistic processes, for which questions of form and material were secondary. Because the divine will to form (“göttliche Formungswille”), wrote Behne in 1919, is by definition unknowable, “art is not a matter of form, but an attitude. … Art is the uncreated-created that requites us.”48 “We know no forms,” Mies van der Rohe echoed him in 1923, “only building problems. Form is not the goal but rather the result of our work.”49

In the 1920s, an entire philosophical compendium was invoked in avant-garde circles to support a project that revolved around the notion of Gestaltung, described by Detlef Mertins as an “architectonics of becoming.”50 The “biotechnics” of Raoul Francé, Ernst Haeckel’s notion of a universal spiritual-material substance, the “biocentrism” of Ludwig Klages, the “energeticism” of Wilhelm Ostwald, and the “tektology” of Alexander Bogdanov combined to give an air of a

46 Cited in Dal Co, Figures of Architecture and Thought, 121, 123. My emphasis. As Dal Co shows, Riegl maintains here an analogy—or even a fundamental identity—between art history (a discipline of historical investigation) and the history of art as an immanent process of cultural development: “Historiography is forced to shatter the technical-material appearances of objects in order to get at their meanings, in the same way that the will, in its act of transforming the world, asserts itself independently of such appearances.” (123) Emphasis in the original.

47 Ibid., 126. This conception of art as essentially intellectual—in the sense of “geistig”—is also what aligned the Gesamtkunstwerk model of the early “expressionist” Bauhaus with the institution’s later focus on basic laws of Gestaltung, inasmuch as both could ultimately be thought as neither formal nor material expressions, but as specific manifestations of the Kunstwollen. See Francisceno, Walter Gropius, 106-118.


50 Mertins, “Architectures of Becoming,” 110.
general vitalist revival to avant-garde discourses, within which one could nevertheless detect a continuation of the earlier *Kunstwollen* thematic. The idea that design could be re-founded upon a conception of the physical world as a manifold of interactive constitutive processes—forces or energies—that organically tied the products of technology to the manifestations of nature was forcefully advanced, among others, by Laszlo Moholy-Nagy and El Lissitzky, who were, from the beginning of the 1920s, introducing Berlin to their version of “Soviet Constructivism.”

Moholy’s stratospheric ascent, from a young, destitute, and virtually unknown Hungarian artist disembarking in Berlin for the very first time in the spring of 1920, to the highly coveted teaching position at the Bauhaus in the spring of 1923, can only be explained by the convergence of his developing ideas not only with key concerns of German architectural culture, but also more specifically with Gropius’s aspirations for the Bauhaus. In fact, it is tempting to see in Gropius’s documented enthusiasm about the new hire, and Moholy’s subsequent overwhelming influence at the Bauhaus, an indication that the latter’s project offered a solution on some level to the problem of artistic collectivity Gropius confronted. For Moholy, the physical world as a system of interacting biotechnical processes was a correlate of the social world, and therefore

---

51 The notion of *Gestaltung* as “becoming” coexisted perfectly well with the neo-Kantian aesthetics and art history (Riegl, but also Heinrich Wölfflin) that grounded the thought of key figures of the avant-garde, such as Behne, Hans Richter, and Sigfried Giedion. See also ibid., 117.


53 Lyonel Feininger reported in 1925 on “the question of Moholy and his influential opinions; these [are] considered by [Gropius] to be the most important at the Bauhaus. And for him … Moholy is the only person of practical importance.” Lyonel Feininger to Julia Feininger, 12 March 1925, translated and reproduced in Wingler, *Bauhaus*, 97.
organic representations would project an image of a cooperative society to come. “I believed,” he later summed up his position circa 1922, “that abstract art not only registers contemporary problems, but projects a desirable future order… . Abstract art, I thought, creates new types of spatial relationships, new inventions of forms, new visual laws—basic and simple—as the visual counterpoint to a more purposeful, cooperative human society.”

Influenced by the concept of “pictorial architecture” (Képarchitektúra, or Bildarchitektur in German) proposed by his Hungarian avant-garde colleague Lajos Kassák, Moholy was projecting a “collective architecture of the future, which will be the pivotal art form of communist society.” Expressed as a negation of “form” and “material” in favor of “force relations” that encompass both social (“human”) and natural (“cosmic”) life, Moholy’s “collective architecture of the future” was a resounding echo of that building, “which will one day rise toward heaven from the hands of a million workers like the crystal symbol of a new faith,” pronounced as the Bauhaus telos at its founding. It did not hurt that Moholy was calling his artworks “Glass Architecture” (Glasarchitektur). (Figure 7)

The link between the emphasis on process and the projection of social collectivity was further established in Moholy’s notion of the artwork as a conceptual diagram. Judging from his statements about it, Moholy’s “collective architecture” was conceived in a way that was at once

---

54 Cited in Botar, Technical Detours, 146-7.


utopian and pragmatic. On the one hand, it would be dedicated to working out blueprints for practical “city construction”; on the other hand, such designs could be “realized only in a communist society,” and would rely on materials “not used hitherto in architecture,” possessing entirely fantastical structural properties$^{57}$—as illustrated most dramatically by his Kinetic-Constructive System model of 1922/1928, a funhouse tower that seemed more a literalization than an illustration of the energeticist notion that “matter is nothing but a spatially ordered group of various energies which do not require any material substrate.”$^{58}$ (Figure 8) First conceived in 1922, but worked out in detail with the assistance of a trained engineer working in Gropius’s Berlin office in 1928, the Kinetic-Constructive System is a perfect illustration of the intermediary status between ideation and realization that Moholy-Nagy imagined for his projects. Because no structural details were worked out, and moreover, because the design could not even have been structurally stable as drawn, Oliver Botar maintains that the model “seems to have been meant more as a conceptual diagram than as a basis for the eventual generation of blueprints.”$^{59}$

It seems that conceptual diagrams were exactly what Moholy-Nagy was after. Collective architecture, he wrote, “clearly sees the partial role it fulfils in the integrated process of social transformation at the present time”: the existing projects are “interim solutions,” “experimental demonstration devices for testing the connections between man, material forces and space.”$^{60}$ The works themselves would not bring about a free dynamic interaction of forces, at once dematerializing the natural world and collectivizing the social, but they could demonstrate it


$^{58}$ Milie Čapek, cited in Oliver Botar, Technical Detours, 171.

$^{59}$ Ibid., 173-4.

experimentally, and thereby “train” the viewers’ consciousness toward a collective accomplishment of such natural-social transformation.  

The notion of the artwork as an “experimental demonstration device” was likely influenced by the Hungarian reception of Soviet constructivism in its so-called “laboratory period.” Members of the Hungarian avant-garde Béla Uitz and Alfréd Kemény were in Moscow in 1921, where they were privy to the formation and debates of the Working Group of Constructivists at INKhUK (Institute of Artistic Culture), and saw the Second Spring Exhibition of the OBMOKhU (Society of Young Artists). In his statements of 1922, Moholy echoes the Soviet constructivists’ definition of artwork as “laboratory work” and “experimentation” in the “communistic expression of material structures.” The drawings produced as part of the debates within the INKhUK attended by Kemény—and, by extension, the works on display at the OBMOKhU exhibition—were called by the constructivists “demonstrations.” Further, the notion of “laboratory” was linked to the constructivists’ conception of Communism as essentially

---

61 “Man as a construct is the synthesis of all his functional apparatuses, i.e. man will be most perfect in his own time if the functional apparatuses of which he is composed—his cells as well as the most sophisticated organs—are conscious and trained to the limit of their capacity. Art actually performs such a training….” Laszlo Moholy-Nagy, “Production-Reproduction” (1922), translated and reprinted in Passuth, Moholy-Nagy, 289. See Chapter Five of this dissertation for a discussion of Moholy’s concept of perceptual training.

62 The famous debate on “composition versus construction” was carried out by the members of the Moscow INKhUK from January through April of 1921, in what is now considered to be the inaugural moment of Russian constructivism. During this debate in March 1921, several of its like-minded participants—Karl Ioganson, Konstantin Medunetskii, Alexandr Rodchenko, Georgii and Vladimir Stenberg, and Varvara Stepanova—joined to form the Working Group of Constructivists. See Maria Gough, The Artist as Producer: Russian Constructivism in Revolution (Berkeley: University of California Press, 2005), 25-27. A version of the “Program of the Working Group of Constructivists” was published in a 1922 number of the Hungarian avant-garde journal Egység, along with several images of works. See Christina Lodder, Russian Constructivism (New Haven: Yale University Press, 1983), 236, 281-2 n.102.

63 “Program of the Working Group of Constructivists of INKhUK” (“Programma rabochei gruppy konstruktivistov INKhUKa”) (1921), translated and cited in Lodder, Russian Constructivism, 94.

64 See Gough, Artist as Producer, 25.
“dynamic”\footnote{Aleksei Gan, \textit{Constructivism (Konstruktivizm)} (1922), translated and cited in ibid., 71.} in two senses: first, inasmuch as post-revolutionary Russia was in a “transitional”\footnote{Ibid., 70.} or “purifying period”\footnote{Aleksei Gan, \textit{Constructivism}, translated and cited in Lodder, \textit{Russian Constructivism}, 94.} of work \textit{towards} Communism; second, inasmuch as Communism in its Marxian definition was, as such, not an ideal “state of affairs” but a “real movement which abolishes the present state of things.”\footnote{Karl Marx and Friedrich Engels, \textit{The German Ideology} (1845-1846), \url{http://www.marxists.org/archive/marx/works/1845/german-ideology/index.htm}, consulted February 2, 2010.} While Moholy may have misinterpreted certain specific Constructivist works, his conception of the dynamics of “interim solutions” seems to be perfectly aligned with the status of the work of art in relation to society in “laboratory” constructivism—which, in Maria Gough’s words, “foster[ed] the momentary, transitional, flexible, and adaptable over the monumental and eternal.”\footnote{Gough, \textit{Artist as Producer}, 71. For discussion of Moholy-Nagy’s misinterpretation of Karl Ioganson’s \textit{Spatial Construction (VIII)} (1921) as kinetic in intent, while it was rather meant as a demonstration of “the process by which rigidity is established,” see ibid., 87.}

The “laboratory” artwork was part of a redefinition of the identity and function of the artist in relation to a communal or social organization that was, even for the Soviet artists, not derived exclusively from Marx. Their idea of constructivism as “intellectual production”\footnote{“Program of the Working Group of Constructivists of INKhUK,” cited in Lodder, \textit{Russian Constructivism}, 95.} was, of course, based directly on the Marxian premise of consciousness as labor (“men are the producers of their conceptions”) and the consequent definition of Communism as the eradication of the division of labor, most fundamentally the division of manual and mental labor.\footnote{Marx, \textit{The German Ideology}, n.p.} But, as Gough has argued, when it came to the translation of this idea into the terms of aesthetic analysis and formal criteria, it was the autotelic principle of “valorization of genesis over mimesis, or
process over product,” first formulated within the German romantic tradition, that the Russian artists invoked.⁷²

In 1924, Gropius was beginning to refer to the Bauhaus as an “experimental institute.”⁷³ In relation to the artifacts produced there, this would be expressed in the identification of the workshop as a laboratory for the development of product prototypes for mass production.⁷⁴ In relation to architecture, however, the notion of prototype was replaced by a much more radical revision of practice as “speculative experiment[ation].”⁷⁵ On the occasion of the 1923 Bauhaus exhibition featuring several designs inspired by the Gropius-Fred Forbat 1922-23 Baukasten im Grossen (Large-Scale Building Blocks) scheme for prefabricated housing, Gropius proposed the initiation of a “Bauhaus Research Department,” a “center for experimentation” in standardized building solutions.⁷⁶ (Figure 9) Prefabricated construction, thus, became a medium for the

---

⁷² The “shift of attention from the relationship among forms… to the process of production,” championed by critic Tzvetan Todorov on the basis of Romantic aesthetics, explained the practical results of the identification between “construction” and “production” in the “composition-and-construction” debate of 1921. Gough, Artist as Producer, 56-57. This association, in turn, brings us back full-circle to the contemporaneous theorizations of the German avant-garde that sought to found an intellectual-creative Gestaltung in a notion of “process.” In fact, Botar has suggested that Moholy-Nagy was introduced to the “energeticism” of Bogdanov and Ostwald by Kemény, who in turn was informed of the theories through the INKhUK debates he attended. See Botar, Technical Detours, 142-144.


⁷⁴ “The Bauhaus workshops,” Gropius wrote in 1926, “are essentially laboratories in which prototypes of products suitable for mass production and typical of our time are carefully developed and constantly improved.” Walter Gropius, “Bauhaus Dessau – Principles of Bauhaus Production” (March 1926), translated and reprinted in Wingler, Bauhaus, 110. As is well known, a number of utilitarian objects were indeed produced—if not exactly mass-produced—by Bauhaus workshops. For a discussion of contradictions between the goal of industrial production and the products of Bauhaus design, see Robin Schuldenfrei, “The Irreproducibility of the Bauhaus Object” in Bauhaus Construct: Fashioning Identity, Discourse and Modernism, ed. Jeffrey Saletnik and Robin Schudlenfrei (London: Routledge, 2009), 37-60. Except for the novel terminology of “laboratory,” however, the interface between the institution and industry through design “prototypes” appeared to simply reproduce the Werkbund Typisierung model.


expression of “research as a form of practice.” As a paradigm of artistic practice, moreover, “research” in this sense did not supplant or precede, but entirely replaced production, dedicated as it was to developing a kit-of-parts that would eliminate contingencies of construction, and therefore serve, in practice, as the realized design. “If architecture were conceived of as prefabrication,” Wallis Miller has observed, “students would produce drawings and models rather than concrete objects. … In this laboratory for housing types design became research into a standardized world, and drawings and models became themselves sites of experimentation.”

The models executed by Bauhaus students were not built structures, nor even finalized building designs, but rather logical diagrams of a building process. By the end of his tenure as director, Gropius formulated Bauhaus institutional identity in entirely speculative terms as “a center for the gathering of all ideas concerning the contemporary intellectual and theoretical foundations of building.” Here too, the auto-teleology of intellectual production replaced the teleology of the artistic object.

At the same time, it also presupposed and structured a specifically collective form of practice—from the Bauhaus itself as a collaborative enterprise, to the projected realization of its research findings through the organized channels of the construction industry. The reconfiguration of artistic practice as intellectual production, thus, was inextricably coupled to ideologies of community and strategies of collective association. An example of this link can also be discerned in a series of experimental building projects undertaken around 1920 by the Arbeitsrat für Kunst to “test the theory” of Arbeitsgemeinschaft, or collaborative work.

---


78 Walter Gropius, “Request for Contributions to the Bauhaus” (1927), translated and reprinted in Wingler, Bauhaus, 125.
community, among craftsmen, artists, and architects. In improvised construction without models or preliminary drawings, Behne wrote, invoking the “cathedral of socialism” paradigm, buildings were “created not so much from a ‘design’ (Entwurf) as through the free cooperation of countless anonymous hands, through the cooperation of the people.” The crucial issue, again, was that of replacing design as a trajectory from preconceived form to realized product with a focus on process and its role in reconfiguring architecture as collective labor.

Arbeitgemeinschaft would imply the entry of all participants into the realm of spiritual Kunstwollen through the active use of their imaginations—in other words, through creative work. The merging of manual and intellectual labor would mean, in that sense, intellectualized (spiritualized) manual labor—in parallel to the intellectual production of Bauhaus research.

Arbeitgemeinschaft, however, was not an invention of avant-garde practice but another extant model of political organization. Established by the earliest legislation of the revolutionary regime, a series of labor-management arbitration committees was consolidated in the Central Arbeitgemeinschaft (ZAG). Symbolizing the spirit of cooperative negotiation between labor and management, the ZAG was symptomatic of Weimar’s unfolding experiment in democratic governance. By 1924, a similar spirit of cooperation manifested itself in the construction industry with the establishment of the Gemeinnützige Heimstätten-, Spar- und Bau-Aktiengesellschaft (GEHAG) or the Public Benefit Homestead, Savings, and Building

79 Behne wrote that these were undertaken “um die theoretisch so oft vertretenen Möglichkeiten einer künstlerischen Arbeitgemeinschaft praktisch zu erproben.” Cited in Franciscono, Walter Gropius, 109 n.60.


81 Likewise, already on the occasion of the first Bauhaus student exhibition in 1919, Gropius chided students for submitting “finished pictures” rather than the preferable “sketches of projects and ideas.” In this case, the privileging of creative process over product would be reinforced through an association with “ideas” as opposed to the nature or quality of their material realization. For Gropius as for Moholy, “interim solutions” could resonate with social or collective dynamism. Gropius, “Address to the Students,” translated and cited in ibid., 140.

82 See Meier, Recasting Bourgeois Europe, 59-65.
Corporation—where the labor movement, the banks, and the socialized building trades would collaborate in the production of nonprofit low-cost housing. By 1927, yet another organizational echo of Arbeitsgemeinschaft could be discerned in the new Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen (RFG) or the Federal Society for Research in Building and Housing Economy, dedicated to work on the technical, economic, and social problems of housing that engaged representatives from the construction industry, the social sciences, and architecture in a collaborative effort that could, this time, be understood exclusively in terms of intellectual production. Gropius would actively participate in both of those organizations. It was the latter that he clearly had in mind as an analogy in describing the Bauhaus in 1927 as “a center for the gathering of all ideas concerning the contemporary intellectual and theoretical foundations of building”: the “center’s” director, Gropius pointed out, “is a member of the committee on housing types which was formed by the Reichsrat and is working in the section on modern building construction and building materials.”

The wide-scale participation of designers and artists in such centralized institutions of the corporatist state poses the problem of their group identification and representation. The retooling of artistic practice as intellectual production ultimately entailed a redefinition of the Weimar artist’s social and political identity, to which I will devote the last part of this chapter. To complete the discussion of the ideological link between processes of ideation and of collective organization, however, requires a brief detour through Hungarian avant-garde discourses.

---


84 Gropius, “Request for Contributions to the Bauhaus,” 125.
1.3 HUNGARIAN EXCURSUS

Because relationships between the Hungarian and German artistic cultures were very close, the triangulation among art, intellectual production, and politics received a parallel and particular expression in the Hungarian context, especially relevant for Moholy. That context also had a much greater influence on Kepes, by his own admission. Having entered the orbit of the Weimar avant-garde only at the tail end of its historical trajectory, Kepes later frequently emphasized the formative influence of the Hungarian artistic circles on his youthful creative development, repeating that his “bones were almost set” by the time he arrived in Berlin.85

The key figure for both Moholy and Kepes was Lajos Kassák, leader of the avant-garde group the Activists.86 Much has been made of Moholy’s influence on Kepes—undoubtedly significant—but Kepes himself tended to place Moholy rather within the larger context of the Activists group.87 “You know Moholy?” he would ask in a 1968 interview, “[Kassák] made Moholy.”88 The Activists strove to forge links with the international cultural avant-garde—in the teens, through the periodical *A Tett* (The Deed), modeled after the Berlin left-wing journal *Die* .

85 Gyorgy Kepes to Sibyl Moholy-Nagy, 8 September 1948, Kepes Papers, AAA, Reel 5303, frame 220. Kepes lived in Berlin from 1930 to early 1932, and then again in 1934-35. See Gyorgy Kepes to Francois Burkhardt, 2 July 1973, Kepes Papers, AAA, Reel 5309, frame 414. He traveled to Berlin on the invitation of Laszlo Moholy-Nagy to assist in the latter’s commercial studio, which worked in advertisement, film, photography, graphic design, and stage sets; Kepes was also introduced there to Gropius and Marcel Breuer, and briefly assisted in their joint office. See Elizabeth Finch, “Languages of Vision: Gyorgy Kepes and the ‘New Landscape’ of Art and Science” (Ph.D. diss., The City University of New York, 2005), 90-93.

86 Just eighteen years old in 1924, Kepes entered the Budapest Academy of Fine Arts, and fell under the influence of Kassak and the Activists shortly thereafter.

87 “Kassak… was a great innovator… to whose circle Moholy had belonged in his early days,” Kepes wrote to Sibyl Moholy-Nagy. Gyorgy Kepes to Sibyl Moholy-Nagy, 8 September 1948, Kepes Papers, AAA, Reel 5303, frame 220.

Aktion; and later through *Ma* (Today), published in Budapest from 1916 to 1919 and continued in Viennese exile from 1920 to 1926, for which Moholy-Nagy served as the German correspondent.\(^8^9\) It is likely that Kepes saw issues of *Ma*, smuggled into Budapest from Vienna, which would have served as his first introduction to that particularly Hungarian reading of the 1920s avant-gardes. When he later recalled his youthful reception of the “leading revolutionary artists”—“cubists, constructivists, suprematists and neo-plasticists”—he and his friends encountered reproduced on the pages of avant-garde periodicals, he recalled being “guided by the powerful Hungarian poet-artist, Lajos Kassák, whose courageous social commitments never blunted the experimental nature of his artistic spirit.”\(^9^0\) When Kassák returned to Hungary in 1926, Kepes joined his circle and went on to assist in Kassák’s new editorial venture, the journal *Munka* (Work).\(^9^1\)

As Kepes recalled his foundational artistic trajectory, it started with his enthusiastic discovery of “images of authentic intense individuality” in works by Van Gogh and Kokoschka. “But the involvement in the vigorous, subjective gestures,” he went on,

had inevitable limitations. As the adolescent’s experimentations with the not yet experienced life dimensions, sooner or later have to face the logic of the ‘common’ social life, the discipline of the social structure, so I had to recognize that my uninhibited personal excursions in limitless expressive

---

\(^8^9\) The repressive regime of Admiral Miklos Horthy after the fall of the Hungarian Soviet Republic in 1919 prompted the exile of many left-wing cultural and political figures. Many of the Activists emigrated to Vienna and Berlin; with Kassák settling in Vienna, and Moholy-Nagy in Berlin, both in 1920.


realms, without relating myself to the common social reality, could easily become a futile emotional exercise.”

Here, Kepes outlines the origins of his cardinal task to integrate the artist into society, and thus to help “harmonize [the] inner and outer vistas [of] our age.” However, the narrative of an original discovery of and subsequent disillusionment with subjective approaches that Kepes claims for his personal artistic history in fact mirrors the early twentieth century cultural history of Hungary. The turn-of-the-century flowering of Hungarian modernism was prompted by a late discovery of Western European Impressionist and Symbolist currents, interpreted as manifestations of cultural “aestheticism”—the liberation of art from all external social and ideological constraints, and the radical individualism of subjective artistic vision. While aestheticism stimulated the first breaks with academic convention, its rejection as early as 1909 grounded the platform of the first Hungarian avant-garde group, the Eight. The Eight, who considered themselves Post-Impressionists, in contrast to their predecessors, and embraced the work of Cézanne and Gauguin as their artistic heroes, would in turn become the father-figures of Kassák’s generation. It is evident that Kepes had some familiarity with this immediate history; he later recalled reading an early essay on Gauguin by Georg Lukács, who had been the unofficial spokesman and intellectual leader of the Eight, as “a revelation” and his first encounter with “a clear formulation of an artistic stand which is related to the need for social context.”


94 Kepes interview by Brown, 7 March 1972, p.5.
Lukács’s essay “Paul Gauguin” first appeared in 1907 in *Huszadik Század* (Twentieth Century), one of the two key cultural and intellectual journals of the prewar generation and an important platform for the Lukács circle. The essay presented Gauguin as an artistic model for going “beyond Impressionism,” that is, beyond the impasse of aestheticism, the tragic isolation of artistic autonomy. Having “broken its bondage to intellectual content and symbols,” Lukács wrote, art found itself deprived of an ability to communicate and thereby to constitute an organic culture where “the same instinct determines the shape and form of one’s home, one’s style of furniture, the fashion of one’s clothes and one’s artistic taste.” The result was stylistic eclecticism, with “individuality” and “originality” the only remaining criteria of cultural value. Because Gauguin was “an intellect,” “conscious and spiritually complex,” he was able to discover in the cohesive traditional culture of Tahiti a “solution to the problem [of the] relationship of art and life.” Growing “attentive to old legends…, the primitive symbols of the natives,” Gauguin found himself “restored… as a human being.”

He had found his place in society, no longer an exotic, luxury item in the hands of amateur collectors, nor a restless anarchist who threatened public safety. A primitive man pointed out to him… that he was a useful human being.

The Gauguin text is representative of Lukács’s early essays, collected in *Soul and Form* (1910), which drew on the communitarian themes of the German neo-Kantian intellectual

---


97 Ibid., 160-161.

98 Ibid., 162-163.
tradition. Influenced by Max Weber and Georg Simmel, Lukács was led to transcribe modern art’s autonomy and subjectivity as a manifestation of general cultural fragmentation brought about through the advance of a positivist and technocratic Weltanschauung. The intellectual specialization and objectivity demanded by the sciences was linked here to social alienation and loss of communal values, and both could be countered through the discovery of a new cultural metaphysics, uniting the artist and the intellectual, and integrating both in the life of society. In an essay titled “Az Utak Elváltak” (The Parting of the Roads), with which he entered the debate on Impressionism, Lukács elaborated his formulation of the relationships among art, thought, and the social world. In place of an “art of sensations”—the “art of surfaces… which signify nothing,” aligned with the atomized world of liberal individualism and bourgeois materialism—he defined Post-Impressionism as a new art that would “express the essential nature of things” in a new “order.” “Today,” he wrote, “we long to recognize order… We long for permanence… We also want to assign meaning to all our experiences… We long for evaluations. … We long for profound thought.” This union of art and the intellect in a new metaphysics was echoed by the Eight themselves, who took as their motto: “We are believers in nature, but no longer do we copy it with the eye of the academies; rather, we dip into it with our intellect.”

The postulate of fundamental dualisms between the public and private worlds, between the “rational” drive of science and the “human” content of art, entailing the need for dialectical

---

99 For Lukács’s early connections to German intellectuals, see Gluck, Georg Lukács, 141-173.

100 See ibid., 132-141.


reconciliation, would be an essential premise of Kepes’s developing philosophy as well. The search for “the total world, the common world that unites the thinking mind, the motivating heart, and the acting body,” declared by Kepes as the primary task of his mature work, also motivated his practical efforts to advance a concept of the artist as intellectual. “[I]t should be insisted,” he would write, “that the creation of a visual image in the arts is not the instinctive act of certain individuals but rather a fusion of their deepest inner workings with the messages of society, including information from the realm of knowledge and rational thought. … [T]he artist profoundly affects our world outlook.” Just such an operative role assigned to art in the creation of a Weltanschauung, and the Idealist conception of the latter’s agency in the creation of the social world, was also part of Kassák’s reimagining of the philosophical legacy of Lukács and the Eight.

“Az Utak Elváltak” was first delivered as a speech at a 1910 meeting of the Galilei Circle, a radical student group that brought together Hungarian progressive intellectuals and the avant-garde, providing the latter’s ideological foundation. Kassák and the artists who would go on to comprise the Activists group also attended Galilei Circle debates. Although he would declare a more socially radical stance than his progenitors, Kassák was clearly indebted to their

103 Kepes, “Introduction,” Visual Arts Today, 11. An elaboration of this position sustained Kepes’s project to unite art and science: “Where our age falls short is in the harmonizing of our outer and our inner wealth. We lack the depth of feeling and the range of sensibility needed to retain the riches that science and technique have brought within our grasp. The images and symbols which can truly domesticate the newly revealed aspects of nature will be developed only if we use all our faculties to the full—assimilate with the scientist’s brain, the poet’s heart, the painter’s eyes. It is an integrated vision that we need; but our awareness and understanding of the world and its realities are divided into the rational—the knowledge frozen in words and quantities—and the emotional—the knowledge vested in sensory images and feelings. Artists and poets on the one hand, scientists and engineers on the other, appear to live in two different worlds.” Gyorgy Kepes, The New Landscape in Art and Science (Chicago: Paul Theobald, 1956), 20.

104 Ibid., 6.

105 See Gluck, Georg Lukács, 139. See also Mansbach, “Revolutionary Engagements,” 52.
cultural formulations. In a notable moment of the above text, Lukács presented an architectonic metaphor for the cultural synthesis he sought:

This art [the art of the Eight] is an old art, the art of order and values; it is a constructive art. … The new art is architectonic in the old, true sense. Its colors, words and lines are merely expressions of the essence, order and harmony of things, their emphasis and their equilibrium. Everything expresses the harmony of force and substance, and can only attain expression in the equilibrium of materials and forms. Every line and every patch of color—as in architecture—is beautiful and of value only in so far as it expresses this: the equilibrium of force and substance that comprise things, in their simplest, clearest, most concentrated and essential way.\(^{106}\)

The elision of aesthetic and ethical categories in the concept of “order” was adopted by the Activists as their platform. Even as they declared themselves impatient with Post-Impressionist metaphysics, the Activists remained resolutely Idealist in their insistence on the life-transforming power of the artist’s creative concept. “Form,” wrote Lukács, “becomes a Weltanschauung, a viewpoint and a stance in face of life which brought it into existence, a possibility of transforming and recreating that itself, even if only in thought and experience…. If art were able to mould life, if goodness could become a deed – then we should be gods.”\(^{107}\) Kassák radicalized the intellectual’s measured formulation: “Art is a Weltanschauung. Creation alone is life, and life the materialization of the Weltanschauung of the world. Art is creation and therefore the most

\(^{106}\) Lukács, “The Parting of the Ways,” 171. The architectonic metaphor also appears in Lukács’s Gauguin essay, where the discovery of the artist’s social function is identified with a shift to the “functional” art of architecture as Gauguin begins to see his paintings as “decorative frescoes.” Lukács, “Paul Gauguin,”164. “[The] decorative value [of modern art].” Lukács elaborates, “is to furnish architecture with ornaments, and modern paintings have no place here. Indeed, the whole development of the architectural style of public buildings and private homes has made no allowance for the organic necessity of paintings. As a result, painting has become separate from every ‘functional’ art.” Ibid., 161. Lukács’s position not only reproduces the Gesamtkunstwerk ideal, but also echoes Kepes’s consistent privileging of architecture as the exemplary art-form of the time. See discussion in Chapter Five of this dissertation.

complete life. … From eternity art has been an ever-present force, like ethics, like revolution, like the whole world itself.”

Spurred on by the Hungarian Soviet Revolution, Kassák drew a parallel between the intellectual act of the artist and the political act of the revolutionary. At the same time, the premise that the artist’s creative concept was to reveal an essential platonic formal order was accepted and likewise radicalized by the Activists. The analytical approach to pictorial structure discerned by the Eight in the work of Cézanne was pursued by the Activists after 1918 in Cubism—which they interpreted as revealing an “inner-world construction”—in mechno-Dada, and finally in Russian constructivism. Their own artworks, reproduced in Ma, exhibited a similar tendency to progressively greater geometric abstraction, culminating with Kassák’s Képarchitektúra (pictorial architecture), first proposed in 1920. (Figure 10) “The artist of today,” wrote Kassák in Ma,

as a man with a concept of the world, again bears his art with him as a manifesto. Not his view of the world, but the essence of the world. Architecture. The synthesis of the new order. … The artist with a concept of the world can create anything. Creation is the constructive good deed. Construction is architecture. The absolute picture is Bildarchitektur. This conception of order in art as “ideological form” or “intellectual architecture” is certainly what Kepes would have taken away from his youthful engagement with the Hungarian avant-gardes.

---


109 He was influenced in this by the ideology of German Activism. See Szabó, “Ideas and Programmes,” 13-14.


112 See Béla Uitz, “Kísérlet az ideológiai formáról” (Experiment in Ideological Form), Ek (1923), cited in Szabó, “Ideas and Programmes,” 15.
1.4 THE “MAN OF MANY FUNCTIONS”

The Bauhaus, Gropius wrote in 1922, strove “to replace the principle of division of labor with that of unified collective work… The only basic contrast lies in the division of labor on the one hand and the unity of labor on the other…”\(^{113}\) The division of labor concept was pivotal for the redefinition of the artist’s social and political identity in the revision of artistic practice as intellectual production. This relationship may be traced through an exemplary text, published in the same year that Gropius wrote the statement cited above. In 1922, Behne wrote a defense of the growing constructivist turn in avant-garde discourses in an essay titled “Art, Craft, Technology.” Typically read as an argument in support of “technology” against the “crafts” as artistic model, the essay in fact presents a remarkable theorization of design as intellectual labor conceived in terms of practices—what Behne calls “actions”—and collectivities, and of the designer as a “man of many functions.”\(^{114}\)

The critic enters the Marxist debate on the industrial division of labor as the source of alienation, translating its terms for artistic production. He shifts the problematics of alienation from the relationship between the worker (or artist) and his material product, to the relationship among workers under the conditions of organized production. Although, Behne posits, the “organic” unity between the worker and his products is indeed destroyed by the industrial

\(^{113}\) Walter Gropius, “The Viability of the Bauhaus Idea” (3 February 1922), translated and reprinted in Wingler, Bauhaus, 51.

division of labor, a “higher, novel cohesion [is introduced in its place] created by the human intellect and consciousness.”115 “Conscious forming,” Behne reminds his audience, is the essence of the creative “profession.”116 The machine introduces a “lifeless, hard, and general” element into the organic unity of nature—but it is only through this element that an “enhanced vitality” emerges when the “shape” of nature is replaced by a “new immaterial body [that] consists of people’s actions.”117 One proceeds to an emancipated society, therefore, through the negation of objects, their individuality and materiality, within a collective of free (conscious) actions, practices, or “functions.”118 “During the age of the crafts,” writes Behne,

the material was distributed and each craftsman worked with it through all phases. Today it is the work that is distributed. … Thus work becomes dematerialized and functional. … Unity is… abstract and, if you wish, an intellectual construct.119

“Architects, sculptors, painters,” he concludes, “we must move forward toward the demanding service of the intellect!”120

Behne’s argument is, in fact, a nuanced reading of Marx, who had proceeded from an anthropology of man as “toolmaking animal,” and therefore conscious producer, to the observation that tools (“means of production”) require collective organization, and the


116 Ibid., 330.


118 From this perspective, Behne’s ideas in 1922 can be aligned closer with the project of “artist as a producer” defined by Gough, as opposed to the trajectory pursued by the Russian utilitarian “productivists,” who sought to invent, as Christina Kiaer has shown, a “socialist object.” See Kiaer, Imagine No Possessions: The Socialist Objects of Russian Constructivism (Cambridge, MA: MIT Press, 2005). Frederic Schwartz’s analysis of Behne’s writings in the late 1920s is very suggestive in this regard. Schwartz argues that Behne’s attempt in those works to define the Sache (thing, object) is ultimately frustrated by his inability to define its necessary correlate—the Mensch. The failure of the project “to make the thing an object of knowledge” for architecture, therefore, is a symptom of the emergence of a new and as yet unarticulated “subject” of architecture—which Schwartz identifies as “sociological man.” Schwartz, “Form Follows Fetish: Adolf Behne and the Problem of Sachlichkeit,” Oxford Art Journal 21.2 (1998): 73.


120 Ibid., 338.
conclusion that it is through their relations with each other that men produce at once their own material reality and themselves as thinking beings.\textsuperscript{121} As intellectual production, art, then, is at once the constitution, through practice, of the artist’s social identity and of the society as a whole. Behne’s analysis of the social body engages the polarity between the “individual” and the “mass” employed, as discussed earlier in this chapter, in the contemporaneous critique of Weimar democracy—but reverses the terms of that critique. Against the volkisch reading of the urban, industrial “masses” as “undistinguishable, dull, featureless … matter,” Behne advances the idea that dematerialized or intellectualized “collectively interconnected work [will] set in motion and articulate the mass [as] a community.”\textsuperscript{122} The community is mass as intellectual production—a “totality” defined through a set of processes or practices. Because each individual producer here is a part of the whole, he is no longer identified with a single form of labor. The assembly-line worker, Behne writes, who “spends his whole life making pinheads and nothing else… is stamped according to this one function”—the worker becomes identified with the product of his labor.\textsuperscript{123} But he then turns that orthodox concept of alienation on its head, asserting that it can only happen in an era of manual production. In the age of intellectual production, on the other hand, “every person carries out a variety of functions [leading] in different directions, making many different demands on him.” No longer objectified, the producer is dissolved into multiple practices; man becomes “a carrier of functions.”\textsuperscript{124} From the starting point of the classic Marxian problematic of the division of manual and mental labor,


\textsuperscript{122} Behne, “Art, Craft, Technology,” 337, 338.

\textsuperscript{123} Ibid., 333.

\textsuperscript{124} Ibid., 333.
Behne arrives at the very negation of the Marxian definition of man—and, ultimately, the artist—as *homo faber*.

Behne’s remarkable discourse may be seen to comprise a defense, in Marxist terms, of the emergent political constitution of the corporatist social democracy. In fact, while much political discourse in the Weimar Republic still proceeded under the rubric of “class,” it was becoming increasingly difficult to reconcile its terms with both the conduct of interest politics and the composition of Weimar society that those politics attempted to articulate. While the Marxian “urban masses” were coterminous with the proletariat, in Weimar that identity was beginning to dissolve. The advent of the modern service economy was reconstituting the Weimar masses into a *Mittelstand*. The fastest growing segment of the labor force by the mid-1920s, white-collar workers (*die Angestellten*) occupying a wide range of professions, were a social group defined more than anything else by heterogeneity and unassimilability within traditional class hierarchies. The new artist-worker theorized by Behne, the new mass man as “carrier of [multiple] functions,” was thus also the *Angestellte*.125

What is particularly significant about the *Angestellten* for the present context is their status as “knowledge” workers. Although white-collar occupations required different skill levels, those who were bank and corporate clerks, civil servants, managers and administrators were close in their educational background to the bourgeoisie.126 Another category of skilled white-collar workers were the former artisans who were now employed in industrial production or commerce. This additional “transitional category,” the “former artisan who today has become a

---

125 As argued by Sabine Hake, the white-collar worker was the primary referent and addressee of Weimar architectural avant-garde activities and discourses. See Hake, *Topographies of Class: Modern Architecture and Mass Society in Weimar Berlin* (Ann Arbor: The University of Michigan Press, 2008), 2.

126 See ibid., 69.
merchant of wares that were at one time self-produced but are now produced in the factory,”127 was the pivotal figure of avant-garde discourses around the relationship between “craft” and “industry.” Both in his manifestation as small merchant (in the Kleinbetriebe), and even more fundamentally as the factory Musterzeichner (the draftsman producing pattern drawings for products), the former artisan had already oriented Werkbund efforts to redefine the social and economic identity of the architect. It was precisely against the threat of the collapse of the designer’s status in industrial production into that of the Musterzeichner, as Schwartz has shown, that Werkbund architects sought to define themselves within a new legal discourse as “inventors” or claimants to “intellectual property.”128 For the designer, creative intellect was not only a philosophical preoccupation but a key politico-economic differential. Not only was the specter of the Musterzeichner still a concern for Gropius in his formulation of the Bauhaus program,129 but the problematics of “intellectual property” also continued to orient the design of industrial products at the Bauhaus throughout the 1920s.130

Although perhaps not so much “educated” as “trained,” the Musterzeichner were, in their social standing, the precursors to the salaried professionals of the Weimar era.131 But it was perhaps equally the state bureaucrat and the corporate administrator that threatened the Weimar

127 See Theodor Geiger, “The Old and New Middle Classes” (1932), translated and reprinted in Weimar Republic Sourcebook, 192.


129 “[H]ow are the factory Musterzeichner to be replaced?” Gropius wrote in his comments on Otto Bartning’s text “Bau-Kunst, -Verwaltung und –Unterricht” (1919) that served as a key influence on the Bauhaus pedagogical program. Cited in Franciscono, Walter Gropius, 134.

130 See the research in this area conducted by T’ai Smith, e.g., “The Identity of Design as Intellectual Property” in Bauhaus Construct, 226-244.

architect’s social identity as a member of the elite Bildungsbürgertum (educated classes), since through the 1920s the avant-gardes increasingly took on positions within the “new cadre of urban managers, entrepreneurs, and technocrats.”¹³² The intellectualization of the architect was, in that sense, directed at forestalling his own transformation into a (mere) paid professional.

On the other hand, Schwartz has recently argued that the technocratic professional, or “expert,” was a figure of avant-garde identification, rather than resistance. As “expert,” the Angestellte was positioned within a new mode of socio-political stratification—by occupation, or productive “function.”¹³³ Here, particularly, Moholy’s definition of “man [as] the synthesis of all his functional apparatuses” situates his discourse with respect to the emergence of the “expert” as a paradigm of artistic practice. Moholy’s idea of “function” may be compared with the effort by Behne, whose work Moholy cited approvingly, to describe the new social subject as a “man of many functions,” as opposed to the proletarian defined solely by the labor of his hands.¹³⁴ The opening pages of The New Vision (1928) demonstrate that Moholy’s ideology centered on a redefinition of work or “occupation.” Much as Behne had done, Moholy proceeds from the Marxian postulate of alienated labor. Unlike “primitive man [who] combined in one person hunter, craftsman, builder, and physician,” he writes, “the worker under the conditions of advanced capitalism “becomes a man of one calling,” which is contrary to the needs of “biological existence.”¹³⁵ This repression of man’s “biological functions” through the division of

¹³² Hake, Topographies of Class, 10.


¹³⁵ Ibid., 14.
labor is not unique to the “working class,” but is a basic condition of “all those caught within the mechanism of the present economic system.” The list of occupations Moholy offers is instructive: a cabinet-maker, a lawyer, a locksmith, and an architect. Again like Behne’s, his solution is not to oppose the division of labor in itself, but rather to supplement its role in technological progress with a countervailing “recognition of man’s organic function,” making possible work that is freely chosen rather than “imposed” by economic necessity.

“The revolutionist,” Moholy writes,

should always remain conscious that the class struggle is, in the last analysis, not about capital, nor the means of production, but actually about the right of the individual to have a satisfying occupation, a life-work that meets inner needs, a balanced way of life, and a real release of human energies. His well-known doctrine of “everyone is talented” works exactly to preclude the reduction of identity to a defined occupational function associated with oppressive division of labor:

“Everyone is equipped by nature to receive and to assimilate sensory experiences [therefore anyone] can become a musician, painter, sculptor, or architect, just as when he speaks, he is a ‘speaker.’” Moholy’s thesis that one is no longer born with a specific talent that predestines his professional identity is a pedagogical counterpart of Behne’s argument that one is no longer born into a specific estate stamping him with a social identity according to the character of his labor. It may be said that Moholy’s “new vision” is thus un-classed, a conception of socially-mobile, education-based society that ideologically resembles a liberal democracy.

136 Ibid., 14-15.

137 Ibid., 17.

138 “Our modern system of production is imposed labor, a senseless pursuit, and, in its social aspects, without plan; its motive is to squeeze out profits to the limit.” Ibid., 15.

139 Ibid., 18.

At the same time, Weimar left discourses linked the figure of the *Angestellte* to the figure of the intellectual, and attempted to construct around this alliance strategies of political organization. When Sigfried Kracauer, the ethnographer of Weimar’s “masses,” was described by Walter Benjamin as a “ragpicker at daybreak,” it was to compare him to those he chronicled.¹⁴¹ Like the classic figure of Parisian modernity, so abject as to be below class, the Weimar intellectual was a social “outsider.”¹⁴² The definition of the intelligentsia as a “socially unattached, relatively classless stratum which is not too firmly situated in the social order” was well-established in Weimar left discourses, advanced by Alfred Weber in the early 1920s and developed by Karl Mannheim.¹⁴³ An active Marxist discourse on the intellectual was also conducted in the ‘20s around the journal *Die Aktion*—well-known among the avant-garde. Here, the “intellectual” was defined—in effect, blurring the definition with that of the *Angestellte*—as “teacher, scholar, engineer, priest, doctor, judge, party leader, and artist.”¹⁴⁴ Here, also, the intellectual’s position in the class struggle was theorized through the division of labor, and particularly the division of manual and mental labor. “The exploited class,” wrote Franz Seiwert in a 1923 number of *Die Aktion*,

---


¹⁴² For a discussion of the “ragpicker” figure and its mythology, see Molly Nesbit, *Atget’s Seven Albums* (New Haven: Yale University Press, 1992), 165-175.


breaks down into two groups: the one that supplies the thinking and the other that does the work and for which the thinking is supplied. … The classless society… must transcend the precondition of exploitation, the division into the knowing and unknowing.\textsuperscript{145}

This proposition certainly resonates with the avant-gardes’ own dilemmas of “head” and “hand.”

The notion of a classless society—whose observance as a utopia is routinely claimed, since Tafuri, to have distracted the avant-gardes from political realities—was shared by all on the Weimar left as the self-evident goal of political activity. Its correlate, class identity, on the other hand, was not the entire reality of political practice, but rather one of its strategic articulations—championed by many on the left, but critiqued by others. The real politics of class in the Weimar Republic was defined by uncertainty; dissolving at times into “mass,” “class” was as frequently a strategic mode of defining political collectivity as it was an identifiable social entity. Rather than an example of ideological false consciousness, therefore, the classless utopia was a displacement of the “real” necessary to every form of political organization.\textsuperscript{146} It was the imaginary other of a politics that thought itself, for the moment, largely in terms of class, even as the social conditions within which it unfolded already prefigured the exhaustion of class as a viable strategy. That tension was encompassed in Weimar politics of knowledge and sustained by avant-garde discourses on the problem of intellectual production. Carrier of multiple functions—intellectual, artist, administrator, worker—how would the designer define himself, \textit{produce} himself, as a part of his social world? What collectivity could he form—one of class or some other one as yet vaguely defined? These were some of the critical questions of the Weimar era.

\textsuperscript{145} Ibid., 291-292.

\textsuperscript{146} Etienne Balibar locates such a displacement—a necessary “distance of all politics from the real”—in the concept of \textit{Nebenzweck} (a lateral or fictive goal) as it appears in the strategic reflections of Karl Marx and Friedrich Engels. See Etienne Balibar, “Politics and Truth” in \textit{Masses, Classes, Ideas: Studies on Politics and Philosophy Before and After Marx}, trans. James Swenson (New York: Routledge, 1994), 162.
THE METHOD OF APPROACH: GROPIUS AND THE NEW DEAL
DISCOURSE ON THE NATIONAL ECONOMY

We are, in my very confident belief … at one of those uncommon junctures of human affairs where we can be saved by the solution of an intellectual problem, and in no other way.

--John Maynard Keynes, February 1935.

Walter Gropius arrived in the United States to take on the chairmanship of the Department of Architecture at the Harvard Graduate School of Design in April of 1937. October 1937 marked the beginning of a rapid and severe economic recession, in some ways more severe than the crash of 1929 that inaugurated the Great Depression. This set of circumstances positioned the arrival of the famous European modernist technocrat at the precise moment when the program of economic planning announced by the New Deal was plunged into crisis. At a time when national attention was riveted to the solution of what John Maynard Keynes called the “intellectual problem” of the economy,1 American architects were reframing their own profession as a set of expert competences in the solution of social and economic problems. In the concrete issues to which architectural “expertise” would be addressed in the 1930s and 1940s—prefabrication, urban planning, cost management—Gropius would have found much overlap with the Weimar Republic. What changed, however, was the function of intellectual production in the project of state formation—with significant consequences for the construction of design as a practice of knowledge, and the politics of that practice. The Weimar state unfolded as a project

of political aggregation, representation, and confrontation. The legislative body of the state, the parliament, was also the emblematic site of state formation. The American state coalesced in the 1930s as an institutional mechanism for the correction, management, and perpetuation of the ailing social body identified as “the economy.” The economy was the locus of the state, the site of its agency. When set within the domain of the state, the social function of knowledge became, remarkably, juxtaposed, and even elided, with the social function of capital. The American project of state formation unfolded between the dynamic imperatives of generating capital and knowledge.

In the market collapse of 1929, the entanglement of real estate with finance capital was made glaringly apparent and, under crisis conditions, urgently problematic. The prosperity of the 1920s was carried in large part by a boom in the building industry, particularly the housing sector. While evident across the North Atlantic economy, in the United States the residential construction boom was almost exclusively a function of private, speculative building—and it was fueled by credit lending. The devastating effect on the building industry of the collapse of financial institutions following the stock market crash was, therefore, one of the more significant blows to the national economy as a whole.

---


3 For example, from within a Marxist framework, David Harvey has argued that the 1930s were the pivotal decade for the emergence of “state-monopoly capitalism” (a term coined by Rudolf Hilferding) through unprecedented direct state intervention in the economic spheres of production and exchange. See David Harvey, *The Limits to Capital* (London: Verso, 1999), 137-138, 150-153.

4 Real estate was one of the fastest growing sectors of the American economy in the 1920s, together with automobiles, electrical appliances, and chemical industries. Construction was the second largest industry (following automobiles), residential construction covered 60 percent of developed urban land, and almost 30 percent of all national job losses in 1933 were in the building trades.
building industry continued through the administration of President Franklin D. Roosevelt, who believed home building to be “the wheel within the wheel to move the whole economic engine.”

The apparent economic centrality of real estate brought the architectural profession in the 1930s into an intense confrontation with the national economy in a period when the economic appeared at the same time as the most pressing contingency and an intractable problem. Throughout the decade, major architectural journals—*Pencil Points, Architectural Record, Architectural Forum,* and *American Architect*—published a steady stream of material on the economic recovery: status updates for the private building industry, reports from Washington, advice on running a business. (Figure 11) As professional discourse kept a vigilant eye on the development of federal government policies, architecture was tapping into the discursive approaches to the economy, which in turn gave it a new set of goals and meanings. The practice of architecture and the professional identity of the architect were shifting, and this transition pivoted on an identification of design with “method.” Arriving in America, Gropius found himself at the heart of these transformations in the architectural profession. His first original statement upon arrival, published in the *Architectural Record,* outlined a notion of “method” as the foundation of a pedagogical and design identity. (Figure 12) “My intention,” he wrote, “is… to introduce a method of approach which allows one to tackle a problem according to its peculiar conditions.” Flexible and instrumental, the “method of approach” situated design along a spectrum between a technology of control and an ethic of contingency and uncertainty. In the

---


context of current architectural debates, Gropius’s programmatic position would have had a significant resonance, accounting in part for the tremendous early success of his ideology on the American scene.

The architectural and economic discourses of this period found a point of intersection in a common problem: what is the social function of expertise in a situation of fundamental uncertainty? Catalyzing a shift in dominant economic theory driving federal policy, the events of 1937 marked the end of a cycle of legislative activity and the gradual emergence of a new set of relationships between the economy and the state. A regulatory economy modeled on scientific management was abandoned and a new set of governmental techniques emerged, focused around the model of “stimulus,” which described an economy whose vitality depended on continuous exposure to risk—produced, paradoxically, through perpetual state intervention. This solution embraced the instabilities of finance capital as the foundation of the economic system. Sustained unpredictability was the given in both the economic discourse of “stimulus” and the architectural discourse of “method.” The instrumentality of knowledge had to depend on its never being able to find the solution, the general law valid for all circumstances, the empirical application of which would assure success. Although the framing of expertise in the 1930s had its roots in the “technocratic” mentality of the preceding years, it was in fact the antithesis of the latter. Contrary to what is commonly thought about the intellectual culture of this period, planning, prediction, and control were no longer its organizing concepts. The new problem was how to maintain internal limits on what could be solved, planned, and controlled; how to produce knowledge that would be in essence self-limiting in its social agency. In this sense, the intersection of such different discourses as those of architecture and economics is an index of the emergence of a new politics of knowledge. In architecture of the immediate postwar period, no one would become as
prominent or as exemplary a figure of the contradictions inherent to this politics than Walter Gropius.

2.1 ECONOMIC STIMULUS

The resolution of the post-1929 economic crisis in the establishment of the managed economy—characterized by ongoing regulatory state interventions, primarily through fiscal policy, oriented to stimulating consumption and increasing income equality—is usually credited to the influence of John Maynard Keynes. However, the eclipse of laissez-faire orthodoxy with a version of “Keynesian” economic regulation actually involved a more gradual evolution in the relationship between the economy and the state. The 1930s and early ’40s witnessed a succession of two conceptions of economic regulation, each feeding a set of changes in the federal legislative apparatus: an elevation to the national level of the program of “scientific management” in the idea of the cooperative (public-private) rationalization of the economy; and its gradual replacement by a “stimulus”-oriented model of planning as a series of flexible and reactive processes embracing economic uncertainty as a dynamic force. Keynes’s contribution was to root this conversion conceptually in a paradigm shift in economic theory based on a redefinition of the role of money in the economy of production. The agency of money opened up a constitutive maladjustment between supply and demand, income and employment, interest and investment—a glitch in the self-regulating mechanism of neoclassical economics that short-circuited the autonomous progress of the market, exposing it to contingency and open-ended strategic manipulation. The transition from the regulatory technology of control to “stimulus” as a tactic of opportunistic interventions was moved along by a series of practices that negotiated a
role for the state as the managerial center of the nation newly conceived as an integral social-economic unit.

The circuit of transactions opened up by the economic crisis of 1929 that aimed at redefining the state’s relationship to the economy around the problem of regulation has been discussed by Michel Foucault as a “crisis of governmentality,” in which a politics of danger focused around the theoretical questioning of the economy as a domain governed by fundamentally intelligible natural laws. 7 The set of power relations both symbolically localizable in the state and tactically diffused through the entire fabric of society, that Foucault describes by the term “governmentality,” is focused on both enabling and delimiting social freedoms—guaranteeing the free circulation of social and economic exchanges and constraining or annulling the risks and dangers it inevitably produces. 8 The emergence of planned economy projects across Eastern and Western Europe and North America in the 1920s, threatening to constrain the free circulation of social and economic processes to an intolerable degree, prompted a gradual mutation in the regime of “governmentality” that sought to recalibrate the interface between the economy and the state. By the 1970s, the state-economy relation shifted from the laissez-faire state that defined its limits in relation to the economy as a substratum of nature or reality to a state that modeled its operations on the logic of the economic, conceived now as a domain permeated by juridical artifice. Whereas both the laissez-faire and the planned economy were premised on the scientific intelligibility of the economic, the emergent “neo-


8 Foucault sees the eighteenth century as a point of emergence for liberal “governmentality” that regulates relationships between society and the state through a series of “apparatuses of security,” focused on the production of freedoms and the cancellation of risks. For a full discussion, see Michel Foucault, Security, Territory, Population: Lectures at the Collège de France, 1977-1978, ed. Michel Senellart, trans. Graham Burchell (Houndmills, Great Britain: Palgrave Macmillan, 2007).
“liberal” conjunction required an economy whose processes were permanently occluded, even as they no longer occurred spontaneously, but were rather produced by an active and perpetual governmental intervention, a “complete superimposition of market mechanisms… and governmental policy.”

While the “Keynesian” ideology of the New Deal has served—and continues to serve—as the point of opposition and the representation of threat for the discourses of “neo-liberalism,” the history of the New Deal arguably already demonstrates a departure from the logic of the planned economy and a realignment of the state-economy relationship similar to that described by Foucault. Prior to the New Deal, the emergence of the state as the centralized locus of political authority within the fragmented federalist system was held in check by capitalist interests legitimized by the classical doctrine of the market as natural law. The project of economic planning unfolding already under the Hoover administration did not attempt to contradict the natural course of the market, but rather to position the state as a centralized clearing house, a visibility mechanism, exposing the operation of economic processes and thus assuring their general stability and the nullification of risk effects. In contrast, the economy was only made political, in the sense of fully open to manipulation through the techniques of “governmentality,” when the project to control it through planning was finally surrendered in the later years of the New Deal. At this point, an economy whose vitality depended on its continuous exposure to risk was produced, paradoxically, through the perpetual intervention of the state—an intervention, finally, that was not oriented to the production of specific effects, of which it could never be certain, but to the maintenance of uncertainty and the guarantee of risk. In this sense,

---

the Keynesian discovery of money as the aleatory and fictional heart of the economic served to sever it from the natural and expose it to the strategies of governing.

The idea of managed production, like much in the New Deal, was an inheritance of the progressive era. It emerged as a response to the reorganization of the economic domain in the age of “managerial capitalism,” distinguished by the emergence of corporations. Colluding to exert influence on prices and the flow of goods, these massive private concerns appeared to function outside of the self-correcting mechanism of the free market, whose “invisible hand” was supposed to equilibrate the conflicting interests of private economic players. At the same time, the scale and complexity of the corporation demanded highly organized forms of administrative and managerial control. A new cadre of experts emerged to fill this need; guided by the techniques of “scientific management” modeled on Newtonian mechanics, and the ideology of the firm as a productive machine, impartial corporate managers would organize its functions, distributing human and physical elements as parts moving in concert, coordinating “inputs” and “outputs” to the objective end of the maximization of profits. While crusading against the abuses of monopoly power and the speculative excesses of laissez-faire, progressives sought to harness the organizational power of the corporation to a more comprehensive structure, expanding the model of corporate control to the collective, “society,” or “nation.” The private cartels should, they believed, submit to a super-cartel, managed by an oligarchy of disinterested experts, dedicated to ensuring efficiency and stability in the operation of the economic whole. The most plausible entity to invest with the potential for such non-partisan centralized administration in a country with a highly localized political system was the nation-state, embodied in the federal government.10

The program of “scientific management” that animated the first decades of the twentieth century came to be institutionalized at the federal state level in the 1920s through the efforts of Herbert Hoover. As secretary of commerce from 1921 until 1928, and later as president, Hoover worked to build an integrated system of rational economic management based on planning within individual firms and voluntary coordination among businesses, local governments, and welfare groups in the exchange of information and administrative decisions, facilitated by the federal government. The state would act in this capacity by establishing structures for the creation and circulation of knowledge on the variables affecting the market, such as technological innovations, efficiency methods, and investment opportunities. Through a series of committees, trade associations, and promotional conferences overseen or expedited by the state, relevant information would be gathered and disseminated, transforming the national economy into a state-sponsored empirical science, grounding rational decision-making on the part of the integrated private and public economic agents that comprise it. Thus the idea of planning as cooperative management did not involve direct intervention of the state in economic processes, but rather the invention of the nation as an autonomous economic unit, the extension of the structural model of the market to the nation as an integrated totality.11

For the American progressive economists,12 influential in the formulation of government policies and setting the tone of current academic orthodoxy in the 1920s and into the 1930s, “control” was the password of a new conception of market equilibrium, counterposed to laissez

---


12 American progressive era economic theory is identified as “institutional economics,” understood to be the legacy of Thorstein Veblen. Among institutionalists active in the New Deal were Rexford Guy Tugwell, Mordecai Ezekiel, Wesley C. Mitchell, and Gardiner C. Means.
faire as a public policy alternative, but leaving the orthodox theoretical model of the market for the most part untouched. The public agencies they advocated would replicate the power of overall coordination in the public interest performed automatically by the free market under the theoretical conditions of perfect competition. In accounting for the disruptive effects of administrative centralization in the private sphere, progressive economists did not question the self-adjusting and equilibrating function of the classical “invisible hand,” but sought instead to make it visible or intelligible by linking probability calculations to the operations of control.13 As Alvin Hansen wrote in 1932, articulating the orthodox economic position,

> It is not necessary to labor the point that we are living in an era of increasing social control. Social control includes not merely government regulation of business, but also the growth of voluntary institutions which *substitute conscious and deliberate regulation of our economic life for the impersonal and automatic regulative principles of a free market.*14

Planning through the agency of economics as an empirical social science embodied in the state meant that the collective of Adam Smith’s economic agents, each of whom selfishly “neither intends to promote the public interest, nor knows how much he is promoting it,” would simply be induced to acquire both this knowledge and this intention.15 The economic policies of

---


15 The famous passage from the *Wealth of Nations* reads: “Every individual necessarily labors to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.” Adam Smith, *The Wealth of Nations* (1776), cited in Robert B. Ekelund, Jr. and Robert F. Hébert, *A History of Economic Theory and Method*, Third Edition (New York: McGraw-Hill, 1990), 101-2. As Adelstein puts it, “[Hoover] would use the leverage of the state to encourage a vast, interconnected system of private control and trust its leaders to recognize the public interest and act on it.” Adelstein, “‘The Nation as an Economic Unit,’” 171.
the first years of the New Deal were rooted in this conception of planning inherited from the Hoover administration. (Figure 13) As Roosevelt announced in 1932, planning would ensure such balance among productive processes as will tend to a stabilization of the structure of business. … Business must think less of its own profit and more of the national function it performs. Each unit of it must think of itself as part of a greater whole; one piece in a large design.”

Although the influence of Keynes, a British economist, did not begin to be felt in the Roosevelt administration until after the publication of his *The General Theory of Employment, Interest, and Money* in 1936, he had been concerned with the unfolding economic crisis and engaged in publicizing his own recovery strategy in America at least since his famous open letter to Roosevelt, published in *The New York Times* on December 31, 1933. Keynes assaulted the classical model of the self-adjusting economic system, to which American economists remained tethered. Based on a continuous flow of goods, classical economics graphed supply and demand schedules, of which wages and prices were functions, along correlated curves, where a shift in one would cause movement along the other until equilibrium was reestablished. The equilibrium system was logically supported by the postulate of the “neutrality of money.” The classical economy functioned like a barter economy, where goods were exchanged for goods, and money was simply the medium of that exchange, or a “veil” concealing the real flow of commodities. According to Keynes, it was this postulate that enabled the theoretical equilibrium conception of the market as an intricate arrangement of precisely proportioned interdependent variables in constant movement, a Newtonian machinery of calculable causes and effects.

---

16 Cited in Adelstein, “‘The Nation as an Economic Unit,’” 178.


18 John Maynard Keynes, “A Self-Adjusting Economic System?”
Into this elegant mechanism, Keynes threw a number of wrenches. The flow of goods, he observed, was in fact interrupted by periodic holding of stocks; the circulation of money was thrown off balance by money market speculation; investment decisions were affected by expectations of return as much as by interest rates. The common thread uniting all these irregularities in market behavior was the idea that economic transactions in the present were based on estimations of future losses or profits; thus uncertainty was the structural foundation and driving force of the market.19 The economic system was built on a gamble. This recognition effectively reversed the mechanical causality model of classical economics, driving the future into the present, or opening a gap of futurity within the present, in accordance with which the functional vitality of the economic system became virtual.20 The figure of this virtuality was money, shaken from its “neutrality” and inserted directly into the operations of the productive economy.

In the modern system, Keynes wrote, money was fundamentally a process of the creation and extinguishing of debts, regulated by the willingness of economic agents to borrow and lend (what he called “liquidity preference”). Interfacing between the value of debts, attached to expectations of future cash flows, and the purchasing power of credit, money is a “subtle device for linking the present to the future.”21 Keynes’s advocacy of deficit spending by the state was based on this hypothesis. Acting like a public bank when private banks dry up, the state would institute “business confidence” in the productive powers of the economy, and therefore encourage private investment. “I lay overwhelming emphasis,” Keynes wrote in his open letter to


Roosevelt, “on the increase of national purchasing power resulting from governmental expenditure which is financed by loans… ”22 It did not particularly matter what the money was spent on (“It is beyond my province to choose particular objects of expenditure,”’ Keynes wrote23), just that it was spent, that the process of “linking the present to the future” should go on, animating the economic whole.24

Like the postulates of American progressive economists, Keynesian macroeconomics relied on an expansion of public-private agency to the level of the national whole; but whereas “control” implied state manipulation of the structural variables of the national economy toward market equilibrium, Keynesian “stimulus” was a pure operation, bypassing structural concerns. The former was focused on the goal of eradicating economic uncertainty through rational planning; the latter aimed to hijack the function of uncertainty itself, redirecting it from stagnation to growth. “Stimulus” would be a contingent, reactive manipulation of uncertainty through the targeted application of the very mechanism of uncertainty—speculation.25 You confront a gamble with a gamble. This was the expression of an economic field traversed and destabilized by aleatory strategies and therefore subject to political intervention in the mode of contingent techniques.

22 Keynes, “From Keynes to Roosevelt,” n.p.

23 Ibid.

24 According to Keynes, money by fiat, as merely a token imposed by law, was the contemporary stage in the “dematerialization” of money under the impact of the banking system. As such, it was a purely juridical fiction that performed the interchange of debt and credit—or had the power to “discharge” debts, in Keynes’s terms. (See Tymoigne, “Keynes and Commons on Money.”) This linkage between the declarative and the productive aspects of the economy in Keynes is similar to that developed by Gilles Deleuze and Felix Guattari on the model of Austin’s “performative statements” in their essay “November 20, 1923: Postulates of Linguistics,” in A Thousand Plateaus: Capitalism and Schizophrenia, trans. Brian Massumi, (Minneapolis: University of Minnesota Press, 1987), 75-110.

25 See Adelstein, “‘The Nation as an Economic Unit’”; Rosenof, Economics in the Long Run, 7-27, 66-76.
2.2 ARCHITECTURAL METHOD

Although Keynes himself did not specify the preferred targets of state spending, the circumstances and the already established policies at the end of the 1930s determined that a great percentage of it would be materialized in new construction. A move in this direction was already predicted in Keynes’s 1933 open letter to Roosevelt. It was illustrated, by contribution of *The New York Times* editors, with a photograph of an urban construction zone under the caption “Slum Clearance, a Type of Expenditure Which Mr. Keynes Recommends as the Best Sort of Recovery Measure”—misquoting the author, who had in fact suggested no such thing.26 (Figure 14) Under the auspices of economist Alvin Hansen, the “American Keynes” who dominated New Deal policy from 1937 on, the Keynesian concept of deficit spending was grounded in the historical conditions specific to the United States and itemized into appropriate specific units of investment. These would be “community consumption projects, useful public works, and the conservation and improvement of human and natural resources”; more specifically: “good public roads, hospital facilities, recreational and cultural facilities,” and, of course, housing.27 To the Keynesian analysis of the causes of the Depression, Hansen added his theory of “secular stagnation,” according to which the end of territorial expansion in America at the start of the

---

26 Keynes wrote instead: “It is beyond my province to choose particular objects of expenditure. But preference should be given to those which can be made to mature quickly on a large scale, as, for example, the rehabilitation of the physical condition of the railroads. The object is to start the ball rolling.” Keynes, “From Keynes to Roosevelt,” n.p.

twentieth century necessitated the opening of new “intensive” outlets for investment. Public works would spur an “intensive” redevelopment of America’s physical resources, translating into Keynesian speculative form this “kind of public expenditure not usually thought of as investment.”

Real estate was at the source of the current crisis; in public form, it would also be the key to recovery. Under Hansen’s watch, stimulus was equated with new construction through the notion of public or “community” expenditures. “The development of science and the requirements of modern ways of living in an urban community,” Hansen wrote,

> entail community consumption expenditures on a scale formerly not dreamed of. … Consumption in large measure, under modern conditions, requires the cooperation of large groups. We cannot enjoy good public roads, hospital facilities, recreational and cultural facilities, without community expenditures.”

From the beginning, New Deal discourses had tied building directly into the logic of the economy; by the late 1930s, the trajectory of state policy had led construction from a role within planning as a technology of control on the national scale to a position as part of a flexible public-private investment process. Encouraging capital liquidity and stimulating private investment became the preferred approach by the end of the 1930s. The other side of stimulus in the building industry was the encouragement of private development through shifting investment risk to the state. Swayed by powerful real estate lobbies, the two pieces of New Deal legislation with the most dramatic and lasting effect on the physical landscape of urban America were oriented towards encouraging its private speculative development. Both the National Housing Act of 1934 and the Wagner Act of 1937 were ad hoc measures motivated by the logic of the market rather than elements of a comprehensive plan to order the economy through control of its

---


29 Hansen, “Investment Incentives,” 84.

physical manifestations in the built environment. Buildings functioned more and more as fragments of flexible and shifting finance capital and embodiments of state strategies for open-ended economic intervention. For American architecture, these strategies and their effects were not only conditions to grapple with, a set of pragmatic opportunities and constraints; more than that, in transfiguring the very products of architectural practice, the macroeconomic suffused architecture with a new set of meanings.

Arriving in America in 1937, Gropius emerged immediately and precisely at the hub of these changes in the architectural profession. It may be said that Manfredo Tafuri’s astute diagnosis of his “refusal to remain a ‘master’ and… disappearance into the reality of American professional life” was prefigured here. Through a set of circumstances, Gropius found himself allied on arrival to those in the American architectural community advocating a tidal shift in the practice of architecture and the professional identity of the architect in response to perceived socio-economic realities of the 1930s. The curricular reform that Gropius was recruited to help carry out at Harvard under the slogan of modernization was one element of this strategy. In fact, it was through such strategies, discernable in a loose assemblage of programs and associations pivoting on an identification with “method,” that the economic was tied specifically to the idea of modern architecture.

The standard narrative of the tremendous success enjoyed by representatives of European modernism in America—under the paradigm of importation and subsequent victory—obsures the complexity of the existing domestic discourse on the meanings of modern architecture during

---

31 The National Housing Act of 1934 encouraged home ownership by enabling government sponsorship of individual mortgages; the Wagner Act of 1937 set the outlines of postwar urban renewal strategy by prioritizing slum clearance to protect inner-city land values.

and immediately prior to this period. Gropius entered a new battlefield of ideas about the modern, and his initial steps in America appear to have been conditioned by an adequate understanding of its contours. His reception of American architectural discourse would have been greatly influenced by the contacts he had made prior to arrival. The architect’s initial introduction to the American architectural community was during a 1928 research trip sponsored by the Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bauwesen (National Research Institute for Efficiency in Building Construction). Among the most significant acquaintances he made during this trip was Robert L. Davison of the Columbia University Research Institute for Economic Housing, whose research on “housing materials and methods of construction,” Gropius felt, complemented his own work in the area and was just the thing he had hoped to find in America. Davison, who went on to direct housing research for the John B. Pierce Foundation, was devoted to advancing prefabrication. At the end of his trip, Gropius met A. Lawrence Kocher and introduced him to Davison. At the time, Kocher had just been appointed managing editor of the Architectural Record, which he would go on to transform into a leading journal for modern architecture; Davison would be one of his early recruits to the editorial team. In the decade that intervened between Gropius’s first American visit and his permanent relocation, both Davison and Kocher actively corresponded with the architect, on at least one

33 More recent scholarship has pointed out the existence of a vibrant domestic discourse on the meaning of modern architecture in the 1920s and ‘30s in America, significantly complicating the narrative of an importation of a more or less clear paradigm of modernism from Europe to America. For an overview, see Gwendolyn Wright, USA: Modern Architectures in History (London: Reaktion Books, Ltd., 2008).

34 Walter Gropius to Robert L. Davison, 26 May, 1928, Isaacs Papers, AAA, Box 7. “For four weeks I searched everywhere in the United States for some person or organization actively interested in research in housing materials and methods of construction to complement the research work which I started in Germany fifteen years ago. Not until I met you and other members of the Research Institute for Economic Housing did I find the information on housing research which I had been sent to the United States to obtain.” See also Reginald R. Isaacs, Walter Gropius: An Illustrated Biography of the Creator of the Bauhaus (Boston: Bulfinch Press, 1991), 146-8.
documented occasion sending him articles from the *Record*.³⁵ Both also became active
promoters of Gropius’s work, and schemed tirelessly for ways to bring him to the United States.

One of the strategies entertained by Kocher in 1934 involved employing Gropius at Columbia, where Joseph Hudnut, as dean of the architecture school, was then engaged in developing a new modern curriculum.³⁶ Two years later, Hudnut, now at Harvard, followed up on his suggestion.

Not surprisingly, Gropius’s first original statement upon arrival at Harvard was published in the *Architectural Record*; and it was a sally in the American discourse on modernism.³⁷ The most frequently cited and most important passage of that text read:

> My intention is not to introduce a so-to-speak cut-and-dried ‘Modern Style’ from Europe, but rather to introduce a method of approach which allows one to tackle a problem according to its peculiar conditions. I want a young architect to be able to find his way in whatever circumstances; I want him independently to create true, genuine forms out of the technical, economic and social conditions in which he finds himself instead of imposing a learned formula onto surroundings which may call for an entirely different solution. It is not so much a ready-made dogma that I want to teach, but an attitude towards the problems of our generation which is unbiased, original and elastic.³⁸

The reference to a “Modern Style” was certainly meant to resonate with the Hitchcock and Johnson definition of European avant-garde architecture as an International Style. This well-publicized interpretation of recent European architecture was at the time already five years old and commonly accepted in the professional mainstream. Gropius had a chance to attest to its currency and implications at the May 1937 Convention of the American Institute of Architects (AIA), where his speech was preceded by that of Everett Meeks, Dean of the Yale School of

³⁵ Walter Gropius to Robert L. Davison, 31 October 1929. Isaacs Papers, AAA, Box 7.


³⁷ Another Gropius text was published at the same time in *American Architect and Architecture*, but it was culled from previously published material; whereas the *Architectural Record* statement was written specifically for the occasion. See Walter Gropius, “Education Toward Creative Design,” *American Architect and Architecture* (May 1937): 26-30. Compare with Walter Gropius, “Unity Between Art and Technique as the Aim of Public Education in Art,” in *Year Book of Education* (London: Faber and Faber, 1936), 493-527.

Architecture, on the “Foreign Influence on Architectural Education in America.” As cited by the Architectural Record, Meeks presented his views on the “gas pipe and cardboard” design of German (and French) modernism’s post-WWI “school of the ugly,” acceding to it nevertheless a current “sane point of view towards stylistism.”39 Gropius, “Europe’s leading modernist,” as Record reported, “made no direct reference to the style.”40 It was likely the first but certainly not the last confrontation Gropius would have with the xenophobic and conservative response to modern architecture, and not the last time he would distance himself from the idea of “style.”41 This form of the “politicization” of European modernism in America is well known; its focus on the formal elements of modernism, as synthetically identified by Hitchcock and Johnson, may have had some impact on Gropius’s rhetoric.

But the idea of the modern as a style, present in the architectural mainstream at the time, did not apply only to European architecture and did not have exclusively negative connotations. A more representative diagnosis is offered by Louis LaBeaume in a January 1938 issue of Octagon, the official journal of the AIA. “[A] change of orientation,” wrote LaBeaume, “is undoubtedly [sic] taking place with regard to architectural practice. Many architects are approaching such concrete problems as are presented to them, from a new point of view. … [W]e


40 “A.I.A. Convenes,” 36.

41 Meeks himself was not necessarily opposed to modernism, and had even invited Gropius to lecture at Yale in 1935. Nevertheless, he reproduced in this speech elements of the conservative critique that understood modernism as a challenge to the academic conventions of beauty. See Meeks, “Foreign Influences.” See also Contemporary Architecture: Report on the Symposium Held at the 63rd Convention of the AIA in Washington, DC, May 21-3, 1930, introduction by Louis LaBeaume, distributed by the AIA Committee on Education. Meeks was one of the participants, with John Galen Howard and C. Howard Walker articulating the conservative position. Cited in Paul Louis Bentel, Modernism and Professionalism in American Architecture, 1919-1933 (Ph.D diss., Massachusetts Institute of Technology, 1993), 356-7.
are even now witnessing a gradual evolution which, whether based on romantic or classical tradition, will modify the architectural scene.” As to “the term ‘modernism,’” he continued, it is “an unsatisfactory one,” and is used here as shorthand for “those more revolutionary approaches to architectural design which are manifesting themselves both in this country and in Europe.”

Thus the reading of modern architecture associated with the term “style” saw it as a continuous development, whether positive or negative, of the Beaux-Arts tradition. It could comfortably accommodate associations with the “unorthodox,” “experimental,” even “revolutionary” (or at least “more revolutionary”); rejecting the notion of “modern style” did not communicate simply that one was a progressive rather than a conservative architect. For example, in taking stock of the “modern” in 1938, *Architectural Forum*, an avowedly modernist-leaning journal at the time, also hewed closely to International Style precepts, even while acceding that the term itself is “not broad enough” to accommodate the current manifestations of modern architecture. The language used to identify the modern was still one of “functionalism,” “utilitarian purpose,” lack of ornament, “consistent architectural expression of [the building’s] purpose,” “acceptance of machine forms,” and “simplification.”

It would initially appear that in rejecting the notion of “style” in the *Architectural Record* statement, Gropius was simply repeating a previous assertion. Already in 1935, he wrote: “The object of the Bauhaus was not to propagate any ‘style,’ system, dogma, formula, or vogue, but

---


43 As Hyungmin Pai has shown in his discussion of the debate between the “modernists” and the “traditionalists” in the latter part of the 1920s and the early 1930s, both positions in fact fit comfortably within a general Beaux-Arts paradigm. Pai, *The Portfolio and the Diagram: Architecture, Discourse, and Modernity in America* (Cambridge, Mass.: MIT Press, 2002), 106-115.

simply to exert a revitalizing influence on design.”

45 Now, however, “style” was for the first time negatively counterposed specifically to “method.” More generally, the impetus to standardize or rationalize the design process was prominent at the Bauhaus after 1922. Nevertheless, one is hard-pressed to find it expressed positively through the concept of “method,” specifically. Gropius would speak, for example, of the need to “implant a clear artistic credo into the student,” or to impart universal principles of design as “objective bedrock foundations of creativity.”

46 On the other hand, he would write that “art rises above all methods.”

47 Similarly, despite the preoccupation with process, discussed in Chapter One, and the systematic approach to design education evident in the Bauhaus work of Laszlo Moholy-Nagy, it is one of his first statements on behalf of the New Bauhaus in Chicago that gives a clear articulation and emphasis to the notion of “method.” “[O]ur concern,” wrote Moholy in the 1937 New Bauhaus catalogue, “is to develop a new type of designer, able to face all kinds of requirements, not because he is a prodigy but because he has the right method of approach.”

48 The adoption of the formulation “method of approach” appears to be a product of the American context.

45 “We did not base our teaching on any preconceived ideas of form,” Gropius continued, “but sought the vital spark of life behind life’s ever-changing forms. The Bauhaus was the first institution in the world to dare to embody this principle in a definite curriculum.” Walter Gropius, *The New Architecture and the Bauhaus*, trans. P. Morton Shand (London: Faber and Faber, 1935; reprint, Cambridge: MIT Press, 1965), 92. Thus, the counterpoint to “style,” and the central pedagogical principle at this point for Gropius, was not “method of approach,” but rather the pursuit of “the vital spark of life behind life’s ever-changing forms.”


In framing his own work in terms of “method,” Gropius was in fact allying himself with a specific existing discourse on modern architecture—one represented in great part by the venue in which his text appeared, the *Architectural Record*. It was in this journal that the circuit of ideas linking modernism to the economic was most fully developed by recourse to a concept of “method.” By 1937, under the editorship of Kocher, *Record* had established itself as the leading advocate of modernism. As Hyungmin Pai has shown, from 1928 onward, *Record* was engaged in developing a definition of modern architecture that dislodged it from the channel of formal innovation, presenting it instead as an epistemological shift in the discipline of architectural design.49 Departing from the premise that mass production and “modern technics” were the fundamental conditions of modernity, and that they were expressed in all the “useful arts, including commerce and industry,” in a new experimental “method” of organizing and applying disciplinary knowledge in practice—a new “attitude of mind”—the editors claimed that the central problem of modern architecture was how to analogously “adjust” the practice of design to conditions of modern life.50 Technology and the economy were thus conceived no longer as problems fundamentally external to architecture, demanding a professional response or an

49 See Pai, *Portfolio and the Diagram*, 148-159. Pai offers a compelling reading of the distance between this modernizing discourse of the 1920s and the rationalization of architectural practice in French academic theory since the Enlightenment. (The classic analysis of the latter can be found in Alberto Pérez-Gómez, *Architecture and the Crisis of Modern Science* (Cambridge, Mass.: MIT Press, 1983).) In contrast to academic theory, the “cognitive project” represented by *Architectural Record* posited the rationalization of architectural practice as a route to its integration into a set of socio-economic conditions that were themselves understood to be rationally constituted: “[a]rchitecture could participate directly in capitalist society because it was now perceived… to have an underlying rational structure. … [C]ause, symptom, and solution were deemed to have the same epistemological structure.” Thus, modern “method” articulated architecture’s disciplinary identity no longer through a system of architectural representations, but as “a social, economic, and technical discipline.” It is in that sense that the “central task of the architect in becoming modern was defined not as an issue of form but as a cognitive and methodological problem.” Pai, *Portfolio and the Diagram*, 159. While Pai’s argument has certainly been tremendously suggestive, the intent of this chapter is not to further delineate his epistemological thesis, but rather to trace the contingent meanings of the “economic” as they oriented architectural discourse in the 1930s. More generally, this study resists the logic of periodizing historical frameworks, including that of the epistemological shift. See discussion in the Introduction.

architectural expression, but rather architecture itself was now seen to be coextensive with a social sphere understood primarily in technological and economic terms—a recognition that demanded a procedural adjustment in the design process.\(^51\) (Figure 15)

In this context, Gropius’s statement reads practically like a *Record* editorial—with its invocation of “method of approach,” an “attitude,” characterized as “unbiased, original and elastic,” that would ground architectural design in “technical, economic and social conditions.”\(^52\) Nevertheless, the set of key associations brought up by Gropius was not aligned exclusively with the *Record*’s editorial polemic. “Method” was rapidly becoming a widely-used counterpoint to the discourse of “modern style.” For example, William Lescaze, contributing with Gropius to the “Architecture Section” of the semi-annual progressive journal *Twice a Year* in 1939, wrote:

> It has been said before. Still, it needs to be said again and again: modern architecture is not just calculation—based on a rather lengthy reproduction and percentage allocation of construction industry statistics—that “we have for a number of years invested at the rate of approximately 1,500,000,000 dollars per year in heterogeneous ‘style’ architecture, from which we have earned no more than an infinitesimal interest.”\(^54\) A big part of thinking in terms of “method” in the 1930s was being able to conceive of buildings as units in the national investment pattern.


During the dramatic expansion of speculative construction in the 1920s, American architects had engaged in a collective rethinking of their disciplinary identity in confrontation with the new conditions of industrial production. In the first decades of the twentieth century, the construction industry was expanded and rationalized as part of the corporate reorganization of all sectors of production. Thus the real estate boom was an artifact of the “managerial revolution” in American capitalism, discussed earlier in this chapter, made possible in the articulation of buildings as units of finance capital actualized through the coordinated action of corporate entities. Architecture had to find its way within a new pattern of working relations within the building industry, what Paul Bentel has described as a “horizontal and interdisciplinary matrix occupied by engineers, contractors, financial experts, [and] labor representatives, which displaced the vertically hierarchical chain of authority formerly surmounted by the ‘artistic’ license of the architect.”

Drawing on the model of corporate administration and the ideology of “scientific management,” architects repositioned themselves as “experts” who could weld the coordination of industrial processes and techniques for efficiency in production to the operations of the market. “[M]ore than merely the designer of a building,” as American Architect wrote in 1929, the architect must be well-versed in such subjects as “economics, real estate values, rental problems, remodeling problems and methods, the character of materials and their possibilities, the contacting of clients, the handling of employees.”

This meant that the architectural profession was increasingly identified with its institutional processes, rather than with its material products. Specifically in contrast to a plan or a design, what an architect now offered to his client was a “service”: sustained expert attention

55 Bentel, Modernism and Professionalism, 94.

focused on a specific problem, unfolding in predetermined but flexible steps of experienced procedure or method. This temporal, flexible, and operative conception of design as “service” already reflected a more abstract, theoretical concern with systemic operations of the economy, prefiguring the correlation during the Depression years of the idea of the architect as a rationalizing agent of the building industry to the idea of national planning for recovery. (Figure 16)

“The depression has made many architects think with a new seriousness about their professional position and its relation to the whole sociological and economic present,” wrote Talbot Hamlin in 1933, “… the architect is beginning to examine with a new interest and a new point of view the whole economic basis of life. …”57 This concern for the bigger picture, the holistic social consciousness that characterized architectural discourses of the ’30s and ’40s, meant in practice a preoccupation with the national economy as an organic unit, the looming new problem to be processed and internalized by the profession. The shift in the architectural discourse of the economic during the depression from the logic of production efficiencies, construction financing costs, and profit optimization to that of national wealth, taxpayer savings, and income distribution is traceable in architectural journals of the early 1930s, and appears to have been a fait accompli by the time Gropius arrived in the States.

For example, an article on “The Minimum Building for Varying Land Values” in the April 1930 Architectural Record opened by stating: “Architecture is not only a matter of good floor plans. Rather, these must go together with the appropriate economic solution… It is the architect alone who can correlate the economic with the engineering and aesthetic interests.”

Under this general epigraph, the article went on to a lengthy summary of the financing

calculations for a “minimum building,” understood to be a corporate office building that “will
earn 10% on an equity investment of about 20% of the total cost”—the baseline version, in other
words, of Cass Gilbert’s “machine that makes the land pay.”58 (Figure 17) Just three years later,
in May 1933, Louis LaBeaume, as Chairman of the new AIA Committee on Public Works,
reported on his agitation for the involvement of private architectural firms in P.W.A. building
projects, based on the argument that “real economies [would] be achieved with resulting savings
to the taxpayer … if businesslike processes and modern practices in the specification of materials
were followed, as in our private practice.”59 The profession was adjusting its accumulated
expertise in the achievement of “appropriate economic solution[s]” to the national scale. A few
months later, Elmer Roswell Coburn was prepared to summarize the new general wisdom in the
American Architect: “Events of the past few years have emphasized the folly of considering
architecture as a thing apart from the commerce and industry of the nation…”60 (Figure 18) He
called upon his colleagues to take the “part in the economic structure that the architect should
rightfully occupy,” and assume leadership in finding a solution to problems in the national
building industry. “[A]rchitectural thought,” Coburn maintained, must now be “remoulded to
form to the pattern of our industrial life” on the national level,61 rather than being focused as

67 (April 1930): 376. The famous definition of a skyscraper as a “machine that makes the land pay” was coined by
the architect Cass Gilbert in his article “The Financial Importance of Rapid Building,” Engineering Record 41 (June
30, 1900): 624.

Business?” Architectural Record 73 (May 1933): 310.

(September 1933): 50.

61 Ibid., 53.
before on “correlate[ing] the economic with the engineering and aesthetic interests” at the level of the individual building approached as an investment.\footnote{Keast and Randall, “The Minimum Building,” 376.}

Reproducing National Industrial Conference Board statistics, reporting on the NRA, proposing ways to take advantage of new legislation for both public and private construction, lobbying in Washington, architects shadowed the economic recovery discourses and activities of the federal government, and more importantly, worked to adapt their own practices and rationalizations to the perceived effects of governmental activity. In the language of the period, architects were actively developing their new “function” within a changing socio-economic “system.”\footnote{See for example, Robert D. Kohn, “Planning for Changed Needs,” \textit{Architectural Record} (April 1933): 294. Kohn urged his “fellow-architects” to “use their latent powers to help give to the future a form in which their function will count.”} In the process, the logic of the macroeconomic became operative in the transformations taking place in the discourse and practice of architecture. Under the pressure of adjustment to the construction industry in the era of “managerial capitalism,” architecture was redefined as a “service” for the coordination and administration of disparate tasks. Architectural practice was beginning to be expressed in the concept of “method” as a set of techniques for the application of disciplinary knowledge, in turn linked in the ‘30s to the organism of the national economy.

Moving from the specifics of the individual building to the abstractions of the macroeconomic reinforced the pure instrumentality of “method,” its detachment from singular predetermined goals or outcomes—a point Gropius continued to stress in America, cloaked frequently in the language of opposition to “style.” “My own approach,” he wrote in 1958, “… has always been to shun any formalism and preconceived style idea, but to proceed instead,
empirically, not excluding anything which appears to offer genuine value; to say ‘and’ instead of ‘either-or.’”64 The goal of “method” would be one of giving structural coherence to this empiricism of contingent responses: a “unity in diversity” to animate a practice productive of “a wide variety of patterns and designs which are constantly modifying themselves to be more adaptable to changing conditions.”65 In this, Gropius’s “method” paralleled Keynesian “stimulus” that refused to project the specific targets of its agency, dissociating investment from the teleological endpoints of mechanical causality and structuring it instead as an open-ended series of contingent responses, linking the present to the future.

2.3 “METHOD” AT THE HARVARD GRADUATE SCHOOL OF DESIGN

“I regard my most important task during the next ten years,” wrote Hudnut to Gropius in 1936,

to be that of devising a system of architectural education which will be in some ways rationally related to the changing responsibilities of the architect in this country. … [T]he role of the architect in our civilization is undergoing a profound change and I feel deeply the necessity of attempting some general revision. I know of no one in the world who could be of greater help to me in this work than you.66

Hudnut thus articulated what would become the primary responsibility and preoccupation of his new hire as the establishment of a productive linkage between design pedagogy and the shifting conditions of professional practice. To further clarify his intentions, Hudnut supplied Gropius with reading materials. Among the latter was his own response to a survey on the status of the architectural profession, published in American Architect and Architecture, and a Pencil Points


66 Joseph Hudnut to Walter Gropius, 8 December, 1936, Houghton, Folder #925.

> The economic pattern of society is always changing and with it the responsibilities and opportunities for the professions, including architecture… Architects will be concerned more and more with communal enterprises; with institutions and industries, with government projects and town planning, with the housing of civic and rural populations.

He was mostly reiterating the now familiar discourse that read in macroeconomic terms an expansion of architectural work from the private scale of individual buildings to the public-private scale of national production. In fact, the next question posed by the editors, “How Can the Architect Increase His Service to Include More than the 30% He Now Serves?” prefigured Hudnut’s response in reflecting this very expansion in architectural practice as the product of shifting economic conditions: rethinking architecture away from the luxury services market was a central preoccupation since the onset of the Depression.

Pertzoff, a Harvard Architecture School alumnus, echoed the by now standard observation about the “decline of architecture from its former position of leadership to its present state of being almost a useless and irrelevant luxury” and the concomitant “decline of the social and economic usefulness of the architect,” and proposed to locate a solution in the reform of architectural education. His program pivoted on “method.” To better “adjust [students] to the reality of architectural practice,” Pertzoff believed, design problems in schools of architecture

---

67 “I read your article in the *American Architect,*” Gropius wrote to Hudnut, “and Mr. Pertzoff’s article in *Pencil Points…* It was very thoughtful to provide these articles as they are most interesting to me. I made some notes which I should like to discuss with you in April.” See Walter Gropius to Joseph Hudnut, 24 January 1937, Houghton, Folder #925.


should integrate research into the “function” of a building, understood to encompass “the social and economic field a given building serves.” This research, considered part of the formulation of the program and to be carried out by students prior to commencing design, would provide the fledgling architect with the necessary skills and knowledge to prevent his becoming “a sort of exterior decorato[ór] ordered about by engineers, sociologists, economists … as seems … to be the case with the architects employed by the government.”

Pertzoff outlined a program by means of which changing professional priorities and contingencies could become practical determinants of the design process when understood generally as social and economic facts. The process of translation between calculable socio-economic contingencies and realized design was governed by “method.” “I believe that it would be unwise and undesirable,” Pertzoff wrote,

even if it were possible, to force a student to acquire that enormous mass of detailed and unrelated information that an architect mush possess if he is to practice competently. … More truly in the province of an educator lies the teaching of the basic underlying principles and of habits and methods of work, among the latter the habit and method of acquiring information…

Lastly, this approach to design was identified with “modern architecture” and “functional architecture.”

Pertzoff, and Hudnut by implication, understood educational reform in architecture as an intervention in the cognitive processes of design modeled on the new procedural focus reflected by the professional discourse of progressive American architecture in its ubiquitous preoccupation with “service” and “method.” Gropius absorbed this process-based formulation of the educational program and reiterated it in a 1937 draft of his pedagogic intentions for Harvard:

As not all practical problems which an architect has to face in his later practice can be studied and memorized during his training, it is the method of approach to the problems, rather than the

---


71 Ibid., 541-2.

72 Ibid., 544.
solution of them, which the student must learn. In order to fit him for the task of dealing with any sort of scheme, we have to show him how to conduct his own research systematically before he starts designing. For only thorough studies of the social, technical and economical factors of his problem will enable him to find a creative conception of the functional, spatial and structural relationships of a building—a conception which will meet the spiritual and material needs of human life.  

This programmatic statement translated the practical curricular reform measures initiated at Harvard by Hudnut already in 1935 and continued after Gropius’s arrival. The basic program consisted in the administrative integration of the fields of city and regional planning, landscape architecture, and architecture under the umbrella of “design”; the modeling of the studio on the professional office; field work requirements with practicing firms and on construction sites; and an emphasis on including “scientific studies such as economics and sociology” as part of the requirements for an architect’s training.  

An example of the application of this “method” in practice can be seen in the earliest problems assigned by Gropius to his master’s studio. A residential development project, assigned to a spring semester 1937 studio, required the students to compile a program based on collaborative research into “all phases of the problem,” including financing and marketing, and a comparison with other developments in the assigned area. Aligned to a formula for calculating a 6% return for the investor published in *Architectural Forum*, the program compiled by the students included the minimum number of rooms in the overall development, percentages of rooms per apartment, average dimensions of rooms, percentages of communal circulation per

73 Walter Gropius, “Suggestions for the Curriculum of an Architect’s Training at Harvard,” manuscript, 1937, Houghton, Folder #18, p.2. The focus on process over rote learning of facts—or “solutions” in this case—was also an important element of general educational reform, discussed in Chapter Four.

total area of each floor, and total cubage of each apartment block. The following semester’s problem expanded the research phase beyond financing calculations to include “collective research into the population, needs and habits of the people, traffic conditions, etc.” In this way, the economic grounding of the design was already being augmented with the kind of large sample statistical data characteristic of later collaborative problems with regional planning and landscape architecture students. “Method” was showing its adaptability to the national economy.

Driven by the logic of financing economies and population analysis, the definition of the program, to which a full third of the student’s time was devoted, was a fundamental part of the design process as it tightly and specifically circumscribed the basic design solution. The conceptual model of the design merged with the professional model of “service” that severed the productive process from a product conceived in formal or aesthetic terms—or, in Bentel’s words, separated “work and object.” A 1941 outline for an exhibition about the GSD, likely drafted by Gropius, posited this design process as segmented into two stages—the original development of a “pattern of ideas” and its subsequent “translat[ion] into a pattern of form:”

The student begins by an analysis of the purpose of the proposed building in relation to the social unit—the family, the institution, the corporate civic body—which it is to serve. He will determine what is needed for that service and determine also what should be the essential characteristic of the facilities. He will study the more fundamental relationships which exist, or might exist, among these. The design exists as a pattern of ideas before it will assume, even in the imagination, the form of a possible building. The interface between the “pattern of ideas” and the “pattern of form” was expressed as a moment of relative destabilization, when degrees of empiricism and contingency were

75 Walter Gropius and Holmes Perkins, “An Apartment House Group,” Architecture 4d, April 12-June 5 1937, HUA, UAV 322.7.4, Subseries IV, Box 3.

76 Walter Gropius, Marcel Breuer, Holmes Perkins, “Boston Art and Recreational Center,” Architecture 4d, October 8 1937, HUA, UAV 322.7.4, Subseries IV, Box 3.

77 Bentel, Modernism and Professionalism, 225.

introduced into the design process. “The translation of ideas into form,” the draft continued, does not unfold merely through logical analysis, but equally through “experiment, … trial and error.” Success in the “process of checking and rechecking simultaneously all these relationships [in the correlation of program, structure, and space]” depends on the acquisition of design experience that allows for “freedom and breadth of thought.” But it was equally, on the other hand, a matter of mastering “the science of space” (the biological “nature of seeing” and the “problems of proportion, scale and rhythm … of light, shade and colors”) and the “science of building” (“statics and dynamics, … building materials and structures, … processes of manufacture and distribution”). Design method was conceived as a set of techniques for negotiating between the maintenance of uncertainty and the assertion of control.

The articulation of design as a dialectical process, balancing the subjective “originative creative power of the individual” with the objective laws or “foundations of creativity,” was a key aspect of Gropius’s pedagogical platform already at the Bauhaus. A similar negotiation between opposing conditions was seen to be fundamental to the design process by Moholy-Nagy. “There are,” he would write, for example, “countless cases in which the exact calculation of all the functional elements cannot as yet be made… . In every creative work there is a sphere in which a certain freedom is left to the artist. The creative problem enters at the point where this

---

79 Ibid., 10-11.

80 Ibid., 12-13.

81 Cited and discussed in Wick, Teaching at the Bauhaus, 76. There is also a notable similarity between Gropius’s formulation of program and the “functional” approach of Hannes Meyer, who posited already in 1928 that “building [is] social, technical, economical, psychological organization.” Moreover, Meyer’s definition of the architect as “a specialist in organization” also echoes Gropius’s idea of the architect as “coordinator.” Hannes Meyer, “Building” (1928), translated and reprinted in Wingler, Bauhaus, 154. For discussions of similarities between Gropius and Meyer, see Wick, Teaching at the Bauhaus, 78; Barry Bergdoll, “Bauhaus Multiplied: Paradoxes of Architecture and Design in and After the Bauhaus” in Barry Bergdoll and Leah Dickerman, eds., Bauhaus: Workshops for Modernity, 1919-1933 (New York: The Museum of Modern Art, 2010), 55.
freedom begins… “82 However, the prior origins of this conception should not obscure the specificity of its relevance and function in a new context.

The longstanding association between Gropius’s presence at Harvard and the modernization of architectural practice and education at mid-century in America, summarized in the notion of the “Harvard Bauhaus,” obscures not only the fact that the curricular reform platform and the pedagogical philosophy of the GSD were fully formed by the time Gropius arrived at the school, but also the extent to which they were in line with attitudes toward architectural practice in the profession at large and corresponded to trends in architectural education already underway in many parts of the country. The comprehensive scale of educational reform carried out at Harvard and the stature of the institution itself may have set its program apart, but neither Hudnut nor Gropius should be considered conceptual or strategic innovators in this respect. Practically any published report on the status of the architect and architecture for a profession that was constantly checking its own pulse during these years reveals correspondences to the issues addressed and measures taken at Harvard.

For example, a September 1936 report on the country’s architectural schools, published in the Record, listed the following in its Summary of Recommendations for architectural education: the institution of “a well defined and applied knowledge of construction materials, processes, and construction methods;” “knowledge of pertinent facts about economics, living conditions, building management, building codes and financing;” “practical experience in construction in the nature of field work;” provision of “town planning” training for architects.83


83 “Education of the Architect,” Architectural Record (September 1936): 214. The new GSD curriculum was presented on page 212.
Immediately preceding this overview of architectural education in the same issue, an article by R. L. Duffus reported on the results of an AIA questionnaire on the status of the profession sent out in 1934. As a reflection of contemporary professional concerns, it is particularly relevant for our purposes because Gropius studied it. The responses summarized by Duffus reflected concerns that architectural education should be integrated with “community planning” and “basic science;” “conform more closely to the demands of industrialization;” stress “the practice of architecture, its business and legal side;” include “more engineering and mathematics and more economic, political and social training” as well as education in “civic affairs” and “city planning.”

He cited Hudnut’s activities at Harvard and at Columbia as part of a long list of programs at other universities moving in this direction.

The list suggests that the reforms instituted at Harvard were not forceful innovations dedicated to clearing the way for an importation and assimilation of the principles of Bauhaus modernism, but rather one specific accretion of indigenous practices within an architectural profession in the process of adjusting itself to a transition from an economic order structured around industrial technologies, mass production and speculative business practices to one increasingly dominated by the public-private products and the organizational patterns of a


85 The list included the reorganization of the New York University College of Fine Arts as the College of Architecture and Allied Arts, including courses in construction, low-cost housing, and community planning; the integration of architectural education with professional practice at the College of Engineering and Commerce of the University of Cincinnati (underlined by Gropius in his copy of the article); the adoption at the Princeton School of Architecture of a “viewpoint of architecture as a social art,” including experience at the building site and “analysis and research [into] the reasons for the program, social, economical or psychological;” the course in Regional Planning at Cornell University, co-sponsored by the Colleges of Architecture and Engineering, and correlating the teaching of architecture with regional planning and landscape architecture; and a series of similar developments at the University of Illinois, Michigan, M.I.T., University of Oregon, University of Minnesota, and the Carnegie Institute of Technology. Ibid., 187-191.
managed economy. The new prominence of the public sector was reflected in the expansion of requisite disciplinary competences to include such characteristic elements of state bureaucracy as legislation, the political process, social sciences, and civic planning techniques; and it was also reflected discursively in a new imperative to redefine the architect’s social position and communal consciousness.

As a European “master” who had already defined himself through published statements of general philosophy as well as built work, Gropius was well-placed, and perhaps predisposed, to enter into this new discourse. The sheer number of articles and speeches published during his first years in the United States testifies to the fact that Gropius was determined to make his mark discursively even as he actively pursued architectural commissions. His notes on the Duffus article reflect this orientation. In the middle of the list of activities taking place at architectural schools across the country mentioned above, Gropius scrawled across the margin: “towards the bigger and better in the spiritual not only in the material sense of the words.” A few pages earlier, he had underlined the following statement: “There is a job for the architect to do. … He will not succeed if he is trained to imitate and to obey. He must force building into the mold of his own time. He must make it express the aspirations of a whole people. He must build into it justice, democracy, truth.” Similar sentiments were expressed in a 1939 manuscript of Gropius’s own article “Training the Architect,” eventually published in Twice a Year:

The architect of the future should be the man of new vision who will create through his work an original, constructive expression of the spiritual and material needs of human life, thus renewing the human spirit instead of rehearsing the thought and action of former times; he should act as a coordinating organizer of broadest experience, who, starting out from social conceptions of life,

---

86 As Alofsin indicates, some of the reforms at Harvard were already underway in 1932-33, before the beginning of Hudnut’s tenure. See Alofsin, Struggle for Modernism, 94-95.

87 Ibid., 190, 186.
succeeds in integrating all social, formal and technical problems of our time into new forms of organic relationships.\textsuperscript{88}

On the margins of the above passage, Gropius noted: “Duffus.”

The published version of the above passage excluded the words “man of new vision” and cut down “new forms of organic relationships” to just “organic relationships.”\textsuperscript{89} In clearing the text of this residue of Weimar-era discourse, Gropius was also performing another displacement. While Duffus understood the imperatives of the architect in the terms of “molding” and “expressing” a certain content in built form, Gropius focused on the figure of the architect as such and the architect’s social role. This displacement, and the accompanying figure of the architect as organizer, became a permanent element in Gropius’s ideology, whether in the context of a pedagogical program or in reflections of general philosophy. The specific articulation of form—its generation, quality, content, and meaning—was replaced with a general insistence on “creativity”; or the insistence on the insertion in the process of design of an exercise of creativity, a quality that could not be taught, which meant that its products could not be identified or prefigured.\textsuperscript{90} Parallel to this, the new focus would be on the designer—his relationship to his own activities in the work process, the regulation of his professional capabilities, and his structural position in society—conceived as the site for an open-ended, ongoing, and self-generating exercise of techniques.

In turn, the conception of the designer as a conduit for strategic processes and relationships was the correlate of an emphasis on the collaborative organization of practice. In its mature form, Gropius’s notion of the architect-organizer would read: “If [the architect of the


\textsuperscript{89} Walter Gropius, “Training the Architect,” \textit{Twice a Year} 2 (Spring-Summer 1939): 143.

\textsuperscript{90} For example: “Intellectual art is sterile, and no work of art can be greater than its creator. The intuitive directness, the short cut of the brilliant mind, is ever needed to create profound art.” Walter Gropius, “Is There a Science of Design?” in Walter Gropius, \textit{The Scope of Total Architecture} (New York: Collier Books, 1943), 43.
future] will build up a closely co-operating team together with the engineer, the scientist and the
builder, then design, construction and economy may again become an entity—a fusion of art,
science and business.”91 This formulation was an outgrowth of Weimar-era concerns with the
role played by the division of labor in the organization of industrial production.92 Following the
Taylorist conception of factory organization as a division between the intellectual work of
management and the manual work of production, Gropius then bemoaned the reduction of the
craftsman or artisan to the role of “an organ for carrying into effect the platonic ideas of others.
…”93 The primary danger was the “compulsory restriction of personal initiative” in the denial of
access to “independent, speculative” work; the strategic solution, to merge the figure of the
designer with that of the Taylorist manager through training oriented towards giving the former
access to the expertise and methodology of the latter.94 At the Bauhaus, the ultimate goal of this
training would still be “the creation of the generally valid type, the development towards a
standard,”95 but the stakes were already articulated not in terms of control over the form of the
final product, but in terms of the ongoing possibility, newly threatened, for the exercise of
professional agency.

In America, the preoccupation with “type” or “standard” was decisively abandoned, its
vestiges worked through in a few aborted efforts at prefabrication. (The history of the short-lived

91 Walter Gropius, “Gropius Appraises Today’s Architect,” *Architectural Forum* (May 1952), reprinted in *Scope of
Total Architecture*, 74.

92 See discussion in Chapter One of this dissertation; for another discussion of Gropius’s efforts to advance the role
of the architect in the organization of industrial production, see Walter Scheiffele, *Bauhaus, Junkers,


94 Walter Gropius, “Unity Between Art and Technique as the Aim of Public Education in Art,” *The Year Book of
Education* (London, 1936), 496-497.

95 Ibid., 493.
General Panel Corporation, founded by Gropius with Konrad Wachsmann, is instructive here for the tepid interest Gropius exhibited in his partner’s fanatical pursuit of the universal “jig,” the basic structural element and the key to standardization. Instead, it was the agency of the architect within a social world structured as a set of productive techniques and organizational relationships that continued to preoccupy Gropius for the rest of his American career. The “method of approach” was a closure to the project of 1920s revolutionary technocracy that wanted to proceed from the government of men to the administration of things. The society emerging in postwar America focused its anxieties on the practices of men.

---

“[T]he remote repercussion of [the bombs falling on England] is strongly felt,” wrote *Architectural Record* editor Douglas Haskell in March 1943. “It blew apart a whole peaceful group of charming somnolent Classical Revival towns on the seacoast of Virginia, replacing them with muck, smell, and claptrap. It made urban centers out of Wichita, Kansas, and Corpus Christi, Texas [and] pushed the Alcan Highway into the Alaska wilderness… .”¹ (Figure 19) In America, total war was fought at a distance, through massive population migrations that altered national demographics and the physical landscape of the country to produce the weapons exploding on the homefronts of Europe and Asia. Fifteen million people travelled in search of wartime employment in existing industrial plants converted for defense production and new ones strategically scattered across the vast open spaces of the American continent away from vulnerable coastlines. Entire new towns, built with extraordinary speed, commonly for as many as 50,000 inhabitants, sprung up on these remote plateaus to accommodate the migration. (Figure 20)

¹ Douglas Haskell, “Britain’s Plans are Bold,” *Architectural Record* (March 1943): 49.
For Alvin Hansen, the preeminent American Keynesian economist and federal
government consultant, the war experience appeared to prove what was already theoretically
considered during the closing years of the New Deal—that, with the right policy of state
intervention, the economy could be oriented toward unlimited growth. But mobilization also
brought out in a dramatic fashion the investment in the development and redevelopment of the
land latent to that hypothesis. Already in 1938, Hansen had tied the logic of stimulus to a version
of the frontier thesis.² The original dynamism of the American economy was catalyzed by
territorial expansion; to avoid stagnation, a new frontier now had to be reopened to investment—
space that could no longer be conquered by extension had to be re-conquered “intensively.” If
before the war, public works more generally were the answer, during the war, Hansen began to
speak of building and rebuilding cities. The Fortune article was another entry in his campaign to
promote a plan for postwar economic “reconversion,” developed together with fellow economist
and Federal Reserve Board housing consultant Guy Greer, centered on a radical federally-
sponsored reshaping of the nation’s urban fabric. Their ideas were first outlined in 1941, with the
publication of a booklet Urban Redevelopment and Housing—a Plan for Post-War. In 1943, they
drafted a “Federal Urban Redevelopment Act,” which ended up voted down in the Senate.³ The
year before, they had presented their case at an urbanism conference at Harvard, where Hansen
was Professor of Political Economy at the Littauer School of Public Administration. Together
with MIT city planning professor Frederick Adams and Littauer’s Morris Lambie, Gropius,


Hudnut, and Martin Wagner joined the conference organizing committee, chaired by Hansen himself.

Throughout the years 1940-1943, the Graduate School of Design was engaged in planning curricular reforms that focused on the role of city and regional planning within the School. At issue was the question of whether city planning should be properly affiliated with architecture or with public administration, and the attendant logistical problem of whether the administrative responsibility for it should be transferred from the GSD to Littauer. In that prosaic guise, a fierce battle unfolded at Harvard, with stakes to control the development of a disciplinary knowledge that promised, throughout the decade of the 1940s, to have strategic significance in the life of the nation—at war and at peace. Under the lead of Hudnut and Gropius, city planning was officially retained within the set of expertise comprising design—but at the cost of redefining “design” itself from the planning and arrangement of freestanding structures to a structured intervention within a social, economic, and physical “civic pattern.” The GSD solution became paradigmatic for the postwar linkage between the professional competences of architecture and planning; a pedagogical blueprint published under its auspices in 1943, John Gaus’s *The Graduate School of Design and the Education of Planners*, was so influential as to become a classic of planning education; and both Hudnut and Gropius established themselves as respected voices on city planning. With the 1940-43 GSD events at its center, this chapter addresses the city planning initiatives of Gropius and Martin Wagner in

---

the 1940s as part of architecture’s confrontation with a critical new problem of the “planning function.”

3.1 ARCHITECTURE OF THE “ADMINISTRATIVE FUNCTION”

The events at the GSD made clear that the issues of planning in the ‘40s were linked to questions not only of the professional identity of the architect, but also the social agency of architecture. On the one hand, city planning was moving away from architecture and beginning to be explicitly articulated as a practice of governing, rather than the organization of the physical characteristics of urban space. On the other hand, the demographic upheaval of war mobilization revealed to the aspiring strategists of post-New Deal governmentality the role of physical conditions and organization—the physical pattern—of settled land in what Greer called at Harvard the “gigantic task of reconstructing our society.” And thus, in the 1940s, it was architectural agency in its conventional definition as the skillful shaping of built form that was ushered for a time into the center of the politics of knowledge, linked to the techniques of governing.

The operative logic of that politics, already sketched out in the development of New Deal planning for economic recovery, was the proposition of an instrumental knowledge

---

5 Andrew Shanken discusses the wartime shift to “planning” as an architectural paradigm as “part of a larger history of professional insecurity.” Because architectural knowledge has always occupied a shifting territory of expertise, among art, engineering, and planning, architects tend to “consistently hybridize professional archetypes in their self-representations.” See Andrew Michael Shanken, From Total war to Total Living: American Architecture and the Culture of Planning, 1939-194X (Ph.D. diss., Princeton University, 1999), 20-21; see also Andrew Michael Shanken, 194X: Architecture, Planning, and Consumer Culture on the American Home Front (Minneapolis: University of Minnesota Press, 2009). Shanken traces a diffuse and overdetermined “culture of planning” that emerged during the war in American society at large and thus affected the architectural profession.

programmatically self-limiting in its applications. The discourse of city planning posited the problem in these terms: How to plan flexibly? How to offer a comprehensive blueprint that would not constrain? How to “so manage our affairs,” in the words of Hansen and Greer, that “the essentials of our institutions, freedom of the individual and freedom of enterprise, shall be preserved and strengthened as well?” The task of planning knowledge would be to discover and to implement within the urban fabric not only the perfect balance, but a symbiosis of freedom and control. “Building must work to a plan,” concluded the Architectural Forum in its 1941 issue on “Building’s Post-War Pattern”: “each building to its neighborhood, each neighborhood to its community, each community to its region—and ultimately each region to the nation.” But this plan would have to be “dynamic rather than static, … promot[ing] change [and] capable of change itself,” a “firm foundation for progress—flexible enough for all contingencies.”

Architects set about preparing for their new role in administering that plan so emphatically not set in stone.

“[This] is the nature of the architect’s work today,” wrote the Architectural Record in 1941, “to organize—organize more precisely, more comprehensively, more flexibly….” The preoccupation with processes of planning and organization on the part of the architectural profession around the nexus of WWII was, in fact, continuous with the redefinition of architectural knowledge ongoing since the New Deal. But mobilization imposed new and pressing contingencies. With civilian production and commercial construction severely curtailed by federal decree in 1942, it became increasingly apparent to architects that, as the Record put it,

---

“Uncle Sam [was], directly or indirectly, the sole surviving client.” And what Uncle Sam looked for was so-called “integrated services”—firms organized to reflect a comprehensive set of specialized skills in design, engineering, and site planning (“a complete package of architectural and engineering abilities”), equipped with sufficient personnel and an established procedure for rapidly executing large-scale, complex projects. (Figure 21) The prototype for this kind of organization was found in industrial architecture; the most commonly invoked paradigm—the firm of Albert Kahn, Inc., in practice since the turn of the century and at the outset of the war employing 400 people, with 800 million dollars worth of construction to its record. Or, for example, the firm of Smith, Hinchman & Grylls, profiled in the December 1942 Forum, established in the 1890s, specializing in schools and universities and industrial work, then in office buildings in the 1920s, and now small arms ammunition plants, for which it had produced 1,000 buildings by 1942, having grown to 1,200 people. (Figure 22) “The secret of the organization’s success,” wrote Forum,

lies… chiefly in the organization itself. Its core is a tightly integrated group of highly competent professionals whose fields run from architectural design to chemical engineering, from machine layout to site planning. With this permanent core, and with an extremely carefully worked out office procedure, such an office can expand to any required size [and] handle virtually any type of building operation. Here we have a prototype of a professional organization built to the scale of vast war and postwar responsibilities.

Flexibility was key to the successful large organization, founded on a basic procedure capable of quickly adapting to unforeseen contingencies of scale or program.

The distinct wartime advantage of such firms made their organization structures and operational techniques the focus of professional attention as smaller offices began to consolidate en masse into partnerships in search of defense commissions. The new buzzword, however, was not so much collaboration as “coordination.” Military contracts required a hierarchical organization, with a “responsible head who [could] cut through discussion and settle matters expeditiously,” Record advised. Architects were encouraged, therefore, not only to engage in inter-professional teamwork, but to take its leadership—which entailed them becoming, in the words of Edwin Bergstrom, A.I.A. President ca.1941, “Coordinating Administrators,” skilled in “bring[ing] together other technical professions with financiers, builders, and labor in a cooperative procedure for every project.” The symbolic site of architectural practice was shifting from the drafting table to the conference table: “Architecture today,” observed the Record, “is wise heads around a table.” (Figure 23) Authority in a heterogeneous team was a function of comprehensive understanding. “The leader at the table,” the Record went on, “would be the man with the widest range of comprehension regardless of his title.” If the architect was to claim this kind of administrative leadership he had to become familiar with the dispersed “factors and functions” animating the new political-economic “pattern,” to be able to discern within it the workings of an uncertain, and always potentially elusive, “plan.” (Figure 24)

The concepts of “planning” and “administration” that oriented architectural reflection during WWII had a specific genealogy, originating in the conjunction between the regulatory state and the methods and practices of city planning. Traditionally affiliated with architecture and

14 “Technical Teams,” 40.


landscape architecture—with monumental public structures and master plans—city planning moved during the 1920s to the front lines of the progressive movement for the rationalization of the laissez faire economy. It became associated with techniques of municipal administration based on the city reconceived as a system of interacting heterogeneous functional processes integrating labor, industry, housing, recreation, transportation, and services. Through planning this City Functional, governmental agents would harmonize the competing interests of individual capitalists in the interest of the system as a whole, securing the value of investments and improving industrial productivity. The theory of state economic planning thus emerged concomitantly with that of the city as a system of productive interdependencies. Under the Hoover administration (1929-1933), planning was shifted from the local to the national level, where it was institutionalized through cooperative committees and centralized data collection.17

The early years of the New Deal elaborated this relationship between methods for the administration of the urban fabric and the project of economic planning. One of President Roosevelt’s first acts upon entering office was to set up a National Land Use Planning Committee, which included American City Planning Institute members Alfred Bettman, Jacob Crane, Frederic A. Delano, Charles Eliot II, and John Nolen. Their recommendations led to the establishment in 1933 of the National Planning Board to help coordinate the activities of the Public Works Administration (PWA). The NPB progressed under various titles during its ten year existence—the National Resources Planning Board (NRPB) is the last and best known—to become the policy heart of the federal government’s philosophy of national economic recovery planning. Employing Delano as chair and Eliot as staff director, and by 1939 part of the White House Executive Office, the NRPB elevated city and regional planning to the status of what Alan

Brinkley has called “microcosmic models for a larger concept of a planned society [in which the] federal government, through a combination of public investment, public welfare, and extensive regulation, could become a major actor in the workings of the national economy.” The analogy between city planning, linked historically to architecture, and the economy as an abstract functional order subject to rational manipulation, was tangibly manifested during the New Deal in PWA building projects, such as the Tennessee Valley Authority and the new towns of the Resettlement Administration. It also held the promise of a central role for the profession at the national command centers, as The American City Magazine eagerly forecast in its description of the NPB members as “architects building a habitation for a new social order.”

Significantly, it was also the NRPB that best reflected the transition, during the late years of the New Deal and war mobilization, from the concept of planning as state regulation of the economy to the Keynesian model characterized by ongoing flexible and reactive state interventions, primarily through fiscal policy (taxation and public spending), dedicated to the maintenance of economic growth and full employment. This transition was registered in the simultaneous release in 1943 of two NRPB publications that charted the outlines of postwar economic planning: Security, Work, and Relief Policies and After the War—Full Employment. Social security was thereby implicitly joined to the promotion of economic growth through free

---


enterprise, establishing the link between security and freedom articulated the following year in Roosevelt’s “Second Bill of Rights”—widely perceived to have been inspired by the NRPB reports. The President’s January 1944 State of the Union address may be considered to be the founding document of postwar American liberalism. The speech bound the social promise of the New Deal—“security and prosperity for all, regardless of station, race, or creed”—to the Keynesian solution of full employment through perpetually-increasing productivity. “[T]rue individual freedom,” Roosevelt declared, “cannot exist without economic security and independence.” The NRPB expressed this logic in the terms of planning. Whereas previously, “planning” implied the development of a comprehensive system for the distribution of national resources, within which public projects were lodged as segments of a projected total environmental reconstruction, the new vision of “planning” involved compiling a “reserve” or “shelf” of potential public works upon which the government could draw, “at a moment’s notice,” whenever a need for compensatory spending should arise.

Professional city planning, in turn, adapted to the new conception of economic planning. It would now have to be divorced from the outline of specific objectives in the blueprint or master plan and refigured as an ongoing permanent process—an “administrative function,” as it was defined in Robert Walker’s The Planning Function in Urban Government (1941). “[C]ity planning cannot reasonably stop with mapping the physical features of a possible future city,” wrote Walker. “Functions and activities, as well as land areas, can be planned.”

---


concerned with the development and implementation of a rational design, the planning of functions would rather approach any design as tentative, “an ever changing thing.” It would be an ongoing “participation in the solution of problems as they arise,” a “continuous study and re-examination of the elements of the plan in terms of the decisions which political leaders and administrators must make in their daily work.” Installed as a subsidiary of the executive branch, this kind of operational planning would be modeled on the military “general staff,” “whose function it is to assist and advise the commanding officer but not to command in its own right.” Analogously, the new strategic planning assigned itself the task “to study administrative problems, to advise, to observe, but not to act.” In this way, the freedom of action would be assured to private enterprise. The plan, as the Record instructed architects, would be a “constant activity of projection into the future” of a state of security for ongoing private investment, a “constant adjustment of the framework within which private enterprise remains free to make decisions.” And the architect, as strategist-planner of the “administrative function,” would gather “wise heads” around his drafting table to mull over designs of programmatically delimited efficacy. (Figure 25)

3.2 THE “PHYSICAL PLANNING” PROBLEM AT THE GSD

In 1936, the GSD Official Register had this to say on the subject of planning, which comprised, together with architecture and landscape architecture, the threefold complex of the

---

23 Ibid., 120.
24 Ibid., 119.
25 Ibid., 171.
school: “Regional planning is comparatively new as a profession and the number of men who are adequately trained to practice it is very small.”27 In the Official Register of the following year, the opening sentence had been changed, to end with “the number of men who are adequately trained to practice it is much smaller than the present demand.”28 Coinciding with Gropius’s arrival at the GSD, the discipline of planning and its administration slowly began to take center stage at the school. Planning education entered Harvard in 1929, with the founding there of the first School of City Planning in America. The School was established with a seven year grant from the Laura Spellman Rockefeller Memorial Foundation and a Charles Dyer Norton endowed chair in regional planning, given to professor of landscape architecture Henry Hubbard. Under Hubbard, the School suffered from chronically low enrollments and, after the initial Rockefeller grant ran out, serious budgetary shortfalls. It was rescued from potential closing in 1936-37, when it was incorporated into the new School of Design as the Department of Regional Planning.29 Three years later, in 1940, the new Dean started a campaign to reduce the influence of Hubbard and restructure GSD planning education. After Hubbard’s resignation in 1941, the School embarked on a curricular reform in city and regional planning that was concluded in 1943.

Scholars have tended to interpret the episode as an example of Hudnut’s commitment to modern architecture (and his privileging of Gropius’s vision) at the expense of city planning and landscape architecture.30 Therefore, the personal and political relationships among the three

27 Official Register of Harvard University, Volume XXXIII, no.34, 27 June 1936, p.32.
28 Official Register of Harvard University, Volume XXXIV, no.22, 12 April 1937, p.32.
29 See Alofsin, Struggle for Modernism, 70-72, 96-105, 122-123.
30 Alofsin writes, for example, that the GSD history after 1936 “involved the effort to… establish the primacy of design over socioeconomic and policy issues.” (p.129) “The troika that constituted the GSD… did not have three equal partners—nowhere near… [Hubbard’s] departure was a statement of protest regarding the inequality among
players in these events—Hudnut, Hubbard, and Gropius—have been adequately mapped out, and have certainly been important. However, the clarity of personal alliances and rifts in this case did not translate into ideological clarity. It is impossible to say that Hubbard was on the side of planning, while Hudnut and Gropius were on the side of architecture: both “architecture” and “planning” were in transition, marked by strategic uncertainty. At issue was an instability in the disciplinary meaning of planning, specifically the role to be played in it by “physical planning.” At stake was the relationship of architecture to planning—a relationship Hudnut and Gropius saw as both newly threatened and newly important, and which they attempted to secure around a new concept of “design.”

The 1928 Columbia University conference on city and regional planning that led to the establishment of the Harvard School of City Planning in 1929 already set the outlines of the problem. While the organizers affirmed the essential interdisciplinary nature of city planning—drawing on “several arts and sciences,” with architecture listed alongside political economy, sociology, physical geography, and “the science of government”—they nevertheless asserted that the “city planner must be… trained to design the materials and objects which go to make up the physical environment of the community—ground forms and vegetation, buildings and structures of all kinds.” Therefore, the conference concluded, “even though it may be impracticable for any one man to be a master of all the aspects of city planning, a city planner should be a master of one, at least, which provides training in design.” By 1936, the issue had become more

---


complex. After 1934-35, the School of City Planning was renamed the School of City and Regional Planning. During the negotiations about the fate of the School of City Planning that followed Hudnut’s arrival at Harvard, the term “physical planning” was introduced as a special domain or sub-field—rather than the general requirement—of planning competence. Hubbard’s 1935 memo to Harvard president James B. Conant, summarizing future policy proposals, clarified the new position:

The School of City Planning has always conceived of its task [as] the improvement of the relationships among men and the relationships between men and their environment… Social and governmenal relations are primarily of the first kind. Economic relations are almost always of both kinds. The relations striven for by the engineer, the architect, and the landscape architect are primarily of the second kind. … The School of City Planning has considered that it must restrict its job… to the specific knowledge and processes and technique of planning the improvement of man’s physical environment….

For his part, Hudnut outlined in 1936 a proposal that foregrounded the idea of “regional planning.” Since regional planning dealt primarily with the formulation of policy and economic and social issues, rather than “design,” Hudnut wrote to Conant, it should be put under the jurisdiction of the newly established Littauer School of Public Administration. Hudnut was probably making a distinction here between regional planning and city planning, as his concurrent plans for the new School of Design included the latter, but made no mention of the former. Nevertheless, when Hubbard’s division—titled after 1934-35 the School of City and Regional Planning—would eventually be merged into the School of Design in 1937-38, it would be called the Department of Regional Planning. The contradictions were such that Hubbard

---

33 Henry Hubbard, *Memorandum from H.V. Hubbard to President Conant as to Research and Instruction in City Planning, November 6, 1935*, HUA, UAV 322.138, Box 3, p. 20. Emphasis in the original.

34 Joseph Hudnut to James B. Conant, 17 April 1936, HUA, UAI.5.168, Box 2, with enclosure “Memorandum on Proposed Curriculum in Regional Planning,” 28 January 1936. Littauer was established that same year.

found it necessary to emphasize in a memo to Conant that—at least at Harvard, it would appear—regional planning is “thought of as ‘physical planning.’” Evidently, the issue of the relationships among planning administration, “physical planning,” and design was the real point of irresolution—and on that point no clear sides had yet been taken.

By the end of 1939, what Conant called “a series of long discussions on the future of regional planning” was once more underway. By now, Hudnut appears to have changed his mind on the subject, and conveyed to Conant the outline of a new position taking shape:

Professor Gropius believes—and I am in accord with him—that the teaching of regional planning should be closely integrated with the teaching of architecture. … Professor Hubbard, as you know, has organized our Department of Regional Planning upon [the principle that regional planning is a profession wholly divorced from architecture.] Professor Gropius and I believe that this principle leads to an unfortunate separation in a situation where unification is most desirable. However different may be the professional responsibilities and techniques in regional planning and in architecture, the two demand for success habits of vision and of thought which are substantially identical.

For his part, Hubbard posited “the economic and governmental side” of planning as the argument against the linkage of planning to architecture:

The work [of regional planning] should not at once pretend to be more than some sort of setup which is small, reasonably unified within itself, practically useful… relatively easy to explain and to teach in essentials with a small staff. … Such a setup can be found in “physical” regional planning. … Note however that as a basic regional planning idea which is implicit in many fields… we cannot choose esthetics. … Those who say that all design of man’s environment is architecture, that regional planning is therefore architecture, and that thus the architect, as such, is the best regional planner, are carrying a dictionary definition into practical politics.

This sharpening of differences brought the key issues into focus. Hubbard believed that the foundation of regional planning was in “physical” planning, consisting of a set of techniques that were not aesthetic in nature, and therefore not fundamentally architectural. Hudnut and Gropius,

36 Henry Hubbard to James B. Conant, 21 February 1936, HUA, UAV 322.138, Box 3, p.1.

37 James B. Conant, “Conversation with Mr. Hubbard,” notes, 4 October 1939, HUA, UAI 5.168, Box 154.


39 Memorandum to President Conant from Henry V. Hubbard as to Possible Future Regional Planning Cooperation and Instruction at Harvard, 20 November 1939, HUA, UAI.5.168, Box 166, pp. 3, 16-17. Emphases in the original.
on the other hand, proposed that at the heart of planning lay “habits of vision and thought,”
shared with architecture regardless of any difference in techniques. To them, the distinction
between aesthetic and polico-economic expertise was not essential. The crucial philosophical
difference was rather that between a set of specifically-defined skills, on the one hand, and
overall patterns or processes of practice, on the other. To understand those differences requires a
detour outside of the Harvard archive.

In a 1932 issue of the journal City Planning, Hubbard and co-author Howard K.
Menhinick outlined a definition of “city planning as a professional career.” “[A] city plan,” the
authors wrote, “is the official record of the will of the community as to the use of the physical
areas which it controls.”40 The city planner was the technician of that record—someone with the
capabilities to produce it as a “workable scheme,” to record it “in words or on plans so that it
may be carried out.”41 The Harvard city planning curriculum, the authors explained, was based
on that general premise. Therefore, it consisted of a study of the “techniques” necessary to
exercise control of a delimited physical area—land, buildings, and infrastructure: the techniques
of architecture (“elementary drafting,” “theory of design,” “materials and methods of building
construction”), of civil engineering (“water supply and sewerage”), of landscape architecture
(“trees and shrubs used in municipal planting”), of financing (“capital improvement budgets”),
and of legislation (“zoning ordinances,” “municipal administration”). Problems in the application
of those techniques consisted of such units of urban organization as “thoroughfare systems,
public open spaces, zoning, land subdivision, civic centers, transit systems, railroads, ports,

40 Henry V. Hubbard and Howard K. Menhinick, “City Planning as a Professional Career,” City Planning 8 (April
1932): 80.
41 Ibid., 81.
airports, and so on,” culminating in the preparation of plans for “an ideal town.”42 Such issues in the application of regulatory techniques to physical areas were also addressed in the series of research publications overseen by Hubbard, comprising the Harvard City Planning series: *Airports, Their Location, Administration, and Legal Basis; Building Height, Bulk and Form; Neighborhoods of Small Homes: Economic Density of Low-Cost Housing in America and England;* etc.43 That was the content of “physical planning” as Hubbard understood it.

Hubbard was a practitioner of a planning conception variously identified (to distinguish it from the earlier City Beautiful movement) as City Practical, City Functional, or City Scientific. Hubbard himself called it “City Practical.”44 Concomitant with the professionalization of city planning in America, this notion of planning centered on the development and exercise of regulatory controls over land within a municipal framework.45 Starting in the 1930s, and accelerating into the 1940s, City Practical planning was itself being displaced by new currents. “During the twenties,” American Society of Planning Officials director Walter Blucher would write in 1949, “[the emphasis in city planning] was on the city practical. Today, the emphasis is on the human beings who populate a community.”46 In practice, this meant the infiltration of planning by the methods and materials of the social sciences: population analysis, general economic trends, crime and disease statistics. Two tendencies originally marked this shift: a

42 Ibid., 81, 84-85.

43 See *Statement of Past and Present Activities of the Harvard School of City Planning*, January 1932, HUA, UAV 322.138, Box 3.

44 Henry Hubbard, *Memorandum to President Conant*, 20 November 1939, HUA, UAI.5.168, Box 166, p.16.


focus on larger spatial areas lacking obvious or distinct physical or administrative boundaries—“regions” rather than cities; and a focus on processes—processes of management and administration in confrontation with the processes of social development analyzed in a historical framework. The term “function” was beginning to be used to describe this new conceptual orientation, and opposed in that context to “skill” or “technique.” All this implied that the circuit of planning knowledge directly linking applied techniques and their physical manifestation in the built fabric was loosening. “Physical planning” was becoming obsolete. In the late 1930s, the planning discipline was undergoing a tidal shift, and Hubbard was facing against the tide.

This helps explain why, in the confrontation with Hudnut and Gropius, Hubbard would appear as “conservative.” That was the opinion expressed by Henry James, a behind-the-scenes operator in Harvard planning discussions and, eventually, Hudnut and Gropius’s advocate. As a representative of the Rockefeller Foundation (whose ongoing sponsorship of planning at Harvard was at issue) and member of the Harvard Board of Overseers, James had Conant’s ear. As an erstwhile member of the Committee for the Regional Plan of New York and Its Environs, as well as of the 1928 Columbia conference sponsored by that Committee, which had led to the establishment of Harvard’s School of City Planning, James was an eminent voice on planning. In 1940, he confided to Harvard University Dean G. H. Chase: “professionally I think [Hubbard] is rather narrow-minded as well as extremely conservative.” James shared that negative  

47 Harvey Perloff, an early historian of planning as a profession in the United States, noted in relation to the described set of transitions: “The focus in this stream of development has been on a function (rather than on a professional skill)….” See Harvey S. Perloff, “Education of City Planners: Past, Present and Future,” Journal of the American Institute of Planners (Fall 1956): 189.


49 Henry James to Dean G. H. Chase, 25 March 1940, HUA, UAI 5.168, Box 166, p.2.
professional assessment with Frederic A. Delano, fellow Regional Plan of New York alumnus, chairman of the Columbia conference, and now NRPB chairman. “I do not think [Hubbard] knows a great deal about the problem of city planning as I see it,” agreed Delano.  

With respect to planning, James and Delano were not just moving with the tide, they were driving it. Published in 1929, the Regional Plan of New York was a pioneering document of a planning knowledge that thought in terms of regions and used for their analysis social sciences methods and concerns, such as population trends, industrial distribution and migration, economic development, changes in land valuation, and metropolitan growth. Since its inception in 1933, the NPB represented the development of that form of knowledge, even as it did not yet concern itself with cities. That would change in 1937, with the publication of a comprehensive NPB report titled *Our Cities, Their Role in the National Economy*. The report was rooted in the social sciences conception of planning, spelled out in its very opening sentences:

> Of all our national resources—natural and man-made—the most important, and the one in terms of which all the others have to be judged, is human life. The safety, welfare, and happiness of the men, women, and children who compose the American people constitute the only justification of government.

Now, however, the task of planning in the management and accommodation of “human life” on the national scale was linked specifically to the city, rather than the region. Prior to this moment, the American system had excluded any direct relationship between the federal and the municipal governments, with the political and economic administration of cities placed under the

50 Frederic A. Delano to Henry James, 31 January 1940, HUA, UAI 5.168, Box 166.


52 *Our Cities: Their Role in the National Economy*, Report of the Urbanism Committee to the National Resources Committee (Washington, DC: June 1937).

53 “The Urban Community in the National Scene,” *Our Cities*, 1.
jurisdiction of states. Even as America was becoming an increasingly urban society, cities were understood to be matters of local, rather than national, concern. Despite the conceptual link between city planning and government administration, spelled out in the constitution of the NPB, the board followed Roosevelt’s focus on rural areas in the early years of the New Deal. Signaling a shift in federal engagement with cities, Our Cities was the first product of a newly established NPB Urbanism Committee, and it was unequivocal in declaring its premises: “In looking at the urban problem…, we consider it… a problem of all the American Nation.” The Urbanism Committee called for direct federal investment in the cities, on everything from taxation policy, to welfare assistance, to urban land policy and public works. Although Hansen was not yet the economic mastermind behind the report, it nevertheless tied the emergence of the city as a central national concern to the closure of the frontier. “The United States can no longer be regarded as an undeveloped rural frontier country,” it stated, “If urbanization is a measure of the maturity of a country, then the United States may be said to have come of age.” The relevant question of planning was no longer whether aesthetic or technical concerns should dominate its disciplinary constitution, but how to confront the eclipse of the “region” and the emergence of the urban fabric as a national resource.

If Hubbard was rearguard in 1940, it still remained to Hudnut and Gropius to prove that their conception of planning would be progressive. The program they developed appears to have been a perfect confluence of the ideas of both men. In January of 1938, Gropius submitted “suggestions for the future policy of Harvard University regarding regional planning.” He launched right into the heart of the argument: the GSD suffers from a lack of integration; the

54 Foreword, Our Cities, v.
55 Our Cities, 4.
educational program should be unified under the basic premise of “design,” which all three component disciplines share. “In the first place,” Gropius stressed, “not [the three professions’] means of realization (i.e. materials and technical processes) should be emphasized, but the common ideal to which all are addressed.” That ideal, encompassed in the notion of “design,” does not only focus on “composition in space,” but on “social aspects.” Thus, “a constructive method of teaching should be followed which consistently would show all the students in design the relationship of their various tasks and their functions within human life…”

Gropius’s position was a combination of a developing pedagogical philosophy with general conceptions of regional planning as discussed at CIAM. What is relevant in the current context is how, in focusing on “design” as an intellectual—rather than a manual or aesthetic—practice, Gropius articulated it at the same time in relation to a discourse of the “social” or “human.”

*The New Architecture and the Bauhaus*, Gropius’s resumé-cum-statement of philosophy written during his short stay in England, and published there in 1935, gives insight to his current positions. Emphasizing the “idea of the fundamental unity underlying all branches of design,” Gropius linked it to “the principle of training the individual’s natural capacities to grasp life as a whole, a single cosmic entity.” The first element of that binary was a translation of the familiar concept of German neo-Kantian aesthetics holding form to be the manifestation of the spirit of an age. As summarized in *The New Architecture and the Bauhaus*: “the outward forms” of architecture are “simply the inevitable logical product of the intellectual, social and technical


58 See Chapter One of this dissertation.
conditions of our age.”59 Gropius’s 1938 regional planning memo restated this now in relation to “design”: “Design as history shows it is an interpretation of life itself.”60 The second element was the notion of “idea” that formed the kernel of Gropius’s educational philosophy. As stated in the 1938 memo:

to educate a designer towards independence of thought and vision, one should give him first of all a constructive idea of the tremendous creative possibilities of future design to be built up consistently from all aspects of life, social, aesthetic and technical. Not before a clear conception of such an idea—worth living up to—has begun to grow in a student’s mind will he understand, combine and absorb the manifold practical means towards its realization.61

The notion of a fundamental “idea” as a counterpoint to “techniques” continued to animate Gropius’s developing argument against specialization. In a 1941 statement of philosophy published in the GSD student journal Task, Gropius counterposed the “scientific methods of minute collecting and analyzing of all available facts” to the “spiritual method of approach,” premised on the “qualitative investigation of present life relationships.”62 If one considers “spiritual” in this case as a translation of “geistig,” a concept that implies the intellect as much as divinity, the link between fundamentals of knowledge and a “totality of life [and] its social implications”63 emerges as central to Gropius’s pedagogy of design.

The practical manifestation of design’s purview over the social “totality of life” would begin with architecture and end with national planning. The closing pages of The New Architecture and the Bauhaus summarized that trajectory:


61 Ibid.


63 Ibid., 34.
My idea of the architect as coordinator—whose business it is to unify the various formal, technical, social and economic problems that arise in connection with building—inevitably led me on step by step from study of the function of the house to that of the street; from the street to the town; and finally to the still vaster implications of regional and national planning. I believe that the New Architecture is destined to dominate a far more comprehensive sphere than building means today; and that from the investigation of its details we shall advance towards an ever-wider and profounder conception of design as one great cognate whole—the mirror of the indivisibility and immensity and underlying unity of life itself, of which it is an integral part.64

Thus, the ultimate endpoint of architectural knowledge and agency as “idea” would be at the scale of national planning, where it would affect such issues as “the readjustment of the relations between industry and agriculture and the redistribution of population on rational economic and geo-political principles.”65 Essentially a summary of the current CIAM platform, the statement is a clue to Gropius’s interpretation of “regional planning.” Not only was the version of regionalism grounding the CIAM “Functional City” derived in part from the Regional Plan of New York, its research methodology also relied on the kind of statistical analysis of large-sample social and economic data that grounded the American regional planning discipline.66 (Figure 26) Moreover, a focus on national economies was already evident at the first meeting of CIAM, where the “general economic system” was one of the main subjects of discussion, and where a “High International Commission for the extension of architecture to economics and sociology”

65 Ibid., 111.
66 It appears that the mastermind of CIAM’s conception of regionalism was Le Corbusier, whose ideas were based on his syndicalist sympathies. As Eric Mumford has shown, the work program for the inaugural CIAM meeting at La Sarraz, drafted by Le Corbusier, already included, under the rubric of “urbanism,” a proposal for the creation of regional planning bodies to coordinate urban development on a national scale. The German text of the “Declaration of La Sarraz” replaced “Urbanism” with “City and Regional Planning.” The idea of universal zoning by functions, central to the “Functional City,” was proposed in the first sections of the Regional Plan of New York. See Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, MA: MIT Press, 2000): 15, 25.
was proposed. By 1934, the emphasis at CIAM, as Eric Mumford writes, was on the “city as a
part of an economic and social whole.”

Hudnut’s conception of the relationship between architecture and planning had different
roots, but a parallel articulation. As Jill Pearlman has argued, Hudnut’s city planning ideas were
shaped during his tenure in the offices of Werner Hegemann and Elbert Peets from 1917 to 1921.
Hegemann thought of the city as a historically evolving urban organism, comprising economic,
political, and cultural factors. As such, the city was both an ethical and an aesthetic expression of
a given society, as conveyed in Hegemann’s guiding concept of “civic art.” While the “art” of
city planning consisted in formal and picturesque composition of “the aspect of the approaches”
(buildings grouped into “harmonious ensembles,” creating a “monumental unity” ideally
comprising the entire city), the “civic” meaning of that art was sustained by Hegemann’s
ethical and political reading of aesthetics as the “knowledge of good and beautiful things and
conduct” that should be “made central to all thought about policy.” That conviction grounded
Hegemann’s advocacy of architecture’s role in city planning, of “the necessity of extending the
architect’s sphere of influence.” A similar conviction was also at the heart of Hudnut’s ideas
about the relationship of architecture to city planning.

---

67 Ibid., 22-23.

68 Ibid., 94.


Hudnut translated Hegemann’s ethico-political notion of aesthetics as the intimate relationship between the “physical pattern” of cities and the historical “idea-pattern” that governs society.  

In a May 1940 article, he posited that architectural expression was guided by a “collective mind,” a “pattern of contemporary idea” that, “even without the consent of conscience, shapes and colors the interests and aptitudes of each era and [directs] its ways of making and seeing.” The contemporary era’s pattern of idea was a consequence of “the growing complexity of the social and economic pattern,” and it was characterized by “a new consciousness of collective responsibility” and of the “organic character” of society. That pattern guided not only contemporary architecture but contemporary city planning as well. “I do not despair of planned cities,” Hudnut wrote:

> by which term I mean, not cities conformable to that geometric spirit which unhappily tradition still imposes upon our civic design, but cities molded by that communal intelligence which seeks, through a recognition of the integral relation of man to society, to bend natural law to human betterment.

Architecture’s role in city planning would consist not in upholding aesthetic principles, but in the ethical and intellectual agency of design in relation to “society” as an organic unit. The polemical subtext of that position was spelled out by Hudnut in a later article. “Nothing could be more misleading,” he wrote,

> or more damaging to the cause of planning than that description of architecture… as an art of ‘physical planning’—a term intended to distinguish sharply the tangible and practical patterns of architects from the patterns of idea which occasion them and which would deny to architecture a social relevancy.

---


74 Ibid., 291, 293.

75 Ibid., 314.

For both Hudnut and Gropius, architecture could not be content in being relegated the task of shaping the physical fabric of cities—neither “Practical” nor “Beautiful”—it had to participate in decisions that shape “human life”—“from the street to the town, … to national planning”\textsuperscript{77}—and “sustain the happiness of populations.”\textsuperscript{78} To accomplish this, architects had to secure their place among those who participate in the social life of ideas. Such were the stakes of the task to “provide [both] planner and architect with a common basis of thought and habit,” taken on by the Hudnut-Gropius alliance at the GSD in 1940.\textsuperscript{79}

In March of 1940, the University announced that Hubbard would retire the following year, and in the meanwhile, an independent committee would be appointed to explore the future of regional planning instruction at Harvard. The committee was chaired by Delano, and included, in addition to Hubbard, Hudnut, and Gropius: Alfred Bettman, the nation’s foremost expert on planning and zoning law who would assist Hansen and Greer in the drafting of their urban redevelopment bill in 1943;\textsuperscript{80} GSD instructor in landscape architecture Bremer Pond; and landscape architect Gilmore D. Clarke, installed by Hubbard. The committee’s \textit{Preliminary}


\textsuperscript{78} Hudnut repeats this argument in both articles cited here: “Now what is the idea which illumines our new architecture; that new architecture whose very substance is social serviceability, whose one intention is to assist the balance and stability of the social fabric? Is it not the idea of planning, of planning not only to secure the comfort of individuals but to lift and sustain the happiness of populations?” Hudnut, “Architecture’s Place in City Planning,” 72. Emphasis in the original. “We admire with a lessening fervor private comfort, self-expression and individual splendor, … we turn for esthetic no less than spiritual satisfactions to programs of construction which are collectively undertaken. Even in our appraisal of purely formal values we are apt to admit a prejudice favorable to those enterprises which lift and sustain the happiness of populations.” Hudnut, “Architecture and the Modern Mind,” 293, 314.

\textsuperscript{79} Hudnut, “Architecture’s Place in City Planning,” 72.

\textsuperscript{80} See Gelfand, \textit{A Nation of Cities}, 127.
Report was submitted on June 26, 1940, signed by all committee members, except for Hudnut and Gropius. It opened with a general definition of planning:

Planning aims to create frames of reference, guides or instrumentalities whereby there may be brought about in the activities of the people of a city or region a greater degree of coordination and integration… For this integration and coordination in the very complex society of today… there needs to be … applied that special kind of intellectual approach, special concept and special art of technique which we mean by the term planning and which is capable of being stated and therefore of being taught.81

The “intellectual approach” of planning was to be based on familiarity with “techniques and developments” in the fields of urban and rural sociology, economics, and political science. While the committee agreed that “physical planning” did play a part in that set of techniques, the concept of “techniques” itself was now very different from the notion earlier advanced by Hubbard. “[T]he things we build upon or do with the land,” the committee wrote, “are but the media for carrying out social and economic objectives,” and therefore the decisions that guide their manifestation should be the products of “knowledge of… those social and economic forces and processes which bear upon the objectives and possibilities of planning.” Knowledge of civil engineering, budgetary, and legal procedures was no longer at issue; planning was about defining, at the scale of society as a whole, the goals and possibilities—no longer just the instruments—of control. As to the knowledge of “design,” which “played a considerable part” in the committee’s deliberations, none of its varied definitions “compe[I] the conclusion that, in the structural organization of a university, planning belongs in the department of architecture or landscape architecture.”82 The committee concluded that planning should be removed from GSD jurisdiction, and a University Professorship in planning established to coordinate a curriculum of courses distributed among the faculties of sociology, economics, and government.

---


82 Delano, Hubbard, Pond, Clark, Bettman, Norton, Preliminary Report, 3, 4.
The Preliminary Report reflected the most current conceptions of planning, identified with the NRPB; but it also demonstrated that, for the planners, contemporary architecture was not an easy fit. Hudnut and Gropius set out to prove them wrong. During committee deliberations that preceded the Preliminary Report, an NRPB speaker was invited to summarize new trends in the planning discipline. The emphasis was on concepts of “coordination,” “integration,” and “collaboration”—both with respect to disparate specialists engaged in planning projects, and the disparate disciplines of knowledge they represented. Committee minutes record Hudnut’s interjection that “the teaching of architecture has so broadened today as to provide the [necessary] training in integration,” that its basis was a discipline that could “for[m] in the student definite habits of thought,” and that “the essentials of an adequate education as a planner were inherent in the teaching of architecture at Harvard today.”

Hudnut’s confident statement reflected the current assumptions and goals of the architectural profession as a whole, oriented precisely to the practices of “coordination” and “integration,” as outlined earlier in this chapter. The battle lines were drawn. After the Preliminary Report was sent to Conant in June, Hudnut took the lead in drafting a dissenting opinion on his own and Gropius’s behalf. In August, he sent a draft of the Minority Report to Gropius for review. “I intend the report to be a ‘fighting’ document,” Hudnut wrote, “I intend it as a strong defense of the architect, i.e. the modern architect—face-to-face with the go-getters and politicians.”

Hudnut would later admit that “[t]here is undoubtedly a great difference in the concept of planning as the term is ordinarily understood and design. I have attempted to resolve this conflict

---

83 Minutes of the Second Meeting of Harvard Committee on Regional Planning, 11 April 1940, HUA, UAI 5.168, Box 192, p.3.

84 Joseph Hudnut to Walter Gropius, 10 August [1940], Houghton, File #925. Emphasis in the original.
by giving design a broader definition.\textsuperscript{85} That definition was outlined in the first draft of the 

\textit{Minority Report}:

Design, as we understand it, is organization: that certain kind of organization which comprises first an arrangement of ideas and then an arrangement of visible forms which interpret these ideas. … Design as related to the three professions with which we are concerned is a process of first apprehending the functions and factors involved in a specific problem and then finding a unified solution of that problem; and even when social, economic, or legal problems are simultaneously involved, the process always leads to a visible ensemble whose essential element is the arrangement of living space. … The essential process is the integration of ideas and physical forms.\textsuperscript{86}

On the one hand, this was an apt analysis of the governing logic within an architectural profession that had, since the 1930s, been remodeling itself as a discipline for the organization and coordination of “factors” and “functions.”\textsuperscript{87} On the other hand, it was an original defense of the traditional pursuit of architecture in the shaping of built form, carried out as a claim to authority over the knowledge represented by the social sciences. “Design” knowledge could process and synthesize “social,” “economic,” and “legal” knowledge, and manifest it in “physical forms.” Hudnut struggled to find the right term for that synthetic discipline of thought, which could distinguish it from the traditional conception of skill on the one hand, and from specialized forms of knowledge, contained in disciplinary procedures or bodies of information, on the other. In both this early draft and the final draft submitted to Conant after Gropius’s comments and revisions, that discipline was variously called “art,” “understanding,” or “creative aptitude.” But, in all cases, it would ground the planner in exactly the kind of comprehensive viewpoint deemed necessary by the Committee. “Knowledge may be acquired through precept,” stated the final draft of the \textit{Minority Report},

\begin{itemize}
\item technique through a trained intelligence, skill through practice; but all of these are only auxiliaries in the field of design. We feel that the majority of your Committee have failed to understand this
\end{itemize}

\textsuperscript{85} Joseph Hudnut to John Coolidge, 12 November, 1940, HUA, UAV 322.138, Box 3, p.1. Emphasis in the original.

\textsuperscript{86} Joseph Hudnut, \textit{Minority Report}, first draft, 7 June 1940, HUA, UAV 322.138, Box 3, p.1.

\textsuperscript{87} See Chapter Two of this dissertation.
principle. The majority appear to conceive design as a special technique and education as knowledge. Education is a discipline and a growth.\textsuperscript{88}

The comprehensive, organic, and process-based type of knowledge sought by the Committee for the education of the planner was already contained in “design.” The battle for planning in the name of architecture would be won on planning’s own turf.

3.3 THE 1942-1943 CURRICULUM REFORM

Planning remained in its position as a department within the GSD, and the task of defining its program would fall to the next chairman.\textsuperscript{89} In September of 1941, John Merriman Gaus, Professor of Political Science at the University of Wisconsin, was appointed to that position for two years. Gaus’s professional focus was on public administration, and he had overseen the preparation of an NRPB report on regional factors in national development.\textsuperscript{90}

Because of his association with the very young idea of “public administration,” Gaus was an even more forward figure within the developing planning field than either Delano or Bettman. At

\textsuperscript{88} Joseph Hudnut and Walter Gropius, \textit{Minority Report of the Harvard Committee on Regional Planning}, September 10, 1940, HUA, UAI.10.513, Box 8, p.9. Although the report is clearly a synthesis of Hudnut’s and Gropius’s current ideas, it is uncertain what specific aspects of the draft were contributed by Gropius, since the original version has minor grammatical marginalia only. However, it is clear that Hudnut and Gropius discussed the original draft, and substantive changes were made in the final version. In what appears to be a follow-up letter to that discussion, Hudnut notes to Gropius: “I think that the point you make about the \textit{breadth} of our program for ‘regional planning’ is very well-taken. … I have also made the changes in the text indicated by you.” Joseph Hudnut to Walter Gropius, 27 August 1940, Houghton, Folder 925. The issue of “breadth” has to do with the specialized subjects in the social sciences enumerated by the committee as necessary for a planner to master. The concept of “design” as a comprehensive discipline of thought was advanced by Hudnut and Gropius as a counter to that program.

\textsuperscript{89} The precise reasons for this outcome remain open to speculation. Notably, Henry James came out on the side of Hudnut and Gropius in the dispute, understanding them to be representatives of a different, “modern,” approach to architecture. The majority report, James wrote to Conant, “reflects the opinions of members of the Visiting Committee who don’t like modern architecture or Hudnut…” Henry James to James Conant, 4 December 1940. “I have received an impression,” he chastised Delano, “that it is not clearly understood by everybody that the Harvard School of Design has definitely and for an indefinite time to come adopted a modernist approach to its work.” Henry James to Frederic Delano, 6 December 1940. Both letters in HUA, UAI 5.168, Box 192.

\textsuperscript{90} See Dean Chase, \textit{Memorandum to the Corporation}, n.d., HUA, UAI 5.168, Box 178.
the same time, his intellectual disposition was in some sympathy with that of Hudnut and Gropius. “I am uneasy at the implication,” Gaus wrote to Conant, “in [the planning committee majority report] that there is a unique discipline and subject matter peculiar to planning of a professional school extent. I say uneasy, because as I don’t possess it, I would soon be out of a job in a school devoted to that peculiarity.”

While Gaus shared with Hudnut and Gropius the orientation against planning as a specialized technical discipline, he also had reservations when it came to the relationship of planning to “design.” The issue was the status of “physical planning” in the translation from the management of rural to that of urban areas. In his experience with TVA planning, Gaus explained, he had dealt with natural resources and features of the land; since there is little that is man-made in such regions as “the Cotton South,” or “the Northern and Southern Plains,” regional planning had “rarely to do with three-dimensional and space rearrangement, and much with legislation and administration.” Therefore, Gaus admitted, he thought of planning “as a part of general staff work in administration.” He granted, however, that “the European and the dweller on the Northeastern Seabord will think rather in terms of man-made autostrade and parkways when he thinks of regional planning and design.” Therefore, Gaus deferred his opinion on the status of “design” for planning the urban fabric. “[T]he design that is revealed by the naturalist and the student of institutions,” Gaus concluded, “is also and equally relevant... .

There are some architects, however, and now notably Dean Hudnut and Professor Gropius, who are sensitive to these matters, and in addition to this the teaching methods and procedures in the schools of architecture so far as I know them point the way... to develop better techniques in training for the public service generally.”

91 John Gaus to James Conant, 28 May 1941, HUA, UAI 5.168, Box 178, p.1.
92 Ibid., 2, 1, 5.
The problem of “physical planning” would continue to haunt the new phase of planning negotiations at the GSD, but it would now be weighed against the problem of “administration,” understood as the problem of governing in relation to urban, as opposed to natural, resources. That central question of the relationship between the social agency of knowledge and urban physical form would emerge in Gaus’s influential report *The Graduate School of Design and the Education of Planners* (1943), and in GSD discussions surrounding its formulation; moreover, it would continue to shape Gaus’s thinking on “public administration” after he left Harvard.

In June of 1941, Hudnut wrote to Gaus: “I have read several times the long letter which you wrote to the President. …What I should like to do is to forget [the discussions of 1940] and begin our new development without any preconceptions of any kind. I want you to feel free to re-study the whole problem and bring us your program.”93 Gaus’s arrival on the scene, however, was evidently accompanied by a round of in-depth discussions among himself, Hudnut, Gropius, and Wagner, during which both Gaus and the GSD contingent worked to change each-others’ minds. In May, Hudnut and Gropius outlined their platform, accompanied by a copy of Giedion’s *Space, Time and Architecture*. “The points you people made,” Gaus followed up, “concerning the importance of a sense and conception of form carried over from individual buildings to city and regional planning is challenging—and difficult; and I suspect that I shall be ploughed up further by Giedion on all this.”94 For his part, Hudnut observed: “I am coming more and more to realize the importance of administrative problems in this field and I should say that an architect could hardly hope to have any success in city planning if he did not take into

93 Joseph Hudnut to John Gaus, 9 June 1941, HUA, UAV 322.7.4, Subseries IB, Box 4.

94 John Gaus to Joseph Hudnut, 1 May 1941, HUA, UAV 322.7.4, Subseries IB, Box 4. Notably, Shanken proposes that Giedion’s canonical work could be interpreted as a teleological account of architecture as city planning, inasmuch as it culminates with a discussion of “space-time in city planning.” See Shanken, *From Total War to Total Living*, 59-63.
account… the administrative machinery and processes of an American city.”95 Both Gaus’s ideas as a planner and the GSD curriculum would be influenced by such give-and-take.

Gaus’s appointment to the Norton Chair in regional planning entailed an assignment to carry out a study of the current status of the planning profession to aid in a plan for the reorganization of planning education at Harvard. *The Graduate School of Design and the Education of Planners* was finished in draft form by January 1943 and submitted for discussion to the GSD curriculum committee, formed in anticipation of postwar reorganization and composed of Hudnut, Gaus, Gropius, Pond, and architecture professor Henry Atherton Frost.

Gaus’s assessment of the planning discipline followed the general outlines of the events traced in this chapter. He noted the distance traveled by the profession from the original conception of planning as an essentially aesthetic enterprise to the current dominant modes of “administrative planning” and “social research.” “Administrative planning,” he explained, was a function of coordinating “social research” into a complex of procedures—“work schedules and priorities”—directed toward the guidance of policy-formation. “Administrative planners” were members of the “general staff” who had “no operating authority as such, but [were], so to speak, extensions of the eyes and ears and mind of the responsible directive heads of an enterprise…, staffs attached to presidents, governors, prime ministers, city managers, and committees of legislatures.”96 To be such a planner was to exercise the purely strategic function of coordination and integration. Since this form of planning was situated at a remove from “operating authority as such,” the administrator could be the expert as purveyor of scientific autonomy and objectivity. Further, and crucially, the administrative planner’s strategic position militated

---

95 Joseph Hudnut to Frederic Delano, 25 April 1941, HUA, UAV 322.7.4, Subseries IB, Box 4.

96 Gaus, *Education of Planners*, 27.
against conceiving of urban form as a totality articulated in the “master plan.” Citing Walker’s *The Planning Function in Urban Government*, discussed earlier in this chapter, Gaus explained that the “plan” as an abstractly ordered finality was being replaced with “planning” as a permanent “function” of a dynamic governmental organism. “The older popular view,” wrote Gaus, “that a city… could hire an ‘expert’ to prepare its plan and that the job was then done is giving way to the view that there should be a continuing appraisal of the problems of the city and the means of meeting them.”

In all this, however, the training of designers had, paradoxically, “become more [and not less] important.” The planning profession, Gaus insisted, should be seen as divided into two areas: the activity of governing and the production of urban form. This resurrection of “physical planning” at the culmination of such an inauspicious analysis was prompted by the belief that the operations of government should at some point “of necessity be registered in physical change.”

Thus, planning, which had originated as part of the professional activity of architecture, was given back to the field of design—but not before undergoing a series of mediations, which the GSD was given the imperative to sort out as a condition of asserting its authority over the range of planning’s professional competences.

Throughout the years 1942 and 1943, the GSD’s Committee on Curricula and the Pamphlet addressed that challenge, among others. First, it was decided that the school should lay an exclusive claim to the concept of “city planning,” while sharing the responsibility for “regional planning” education with the Faculty of Arts and Sciences. This was not fundamentally an issue of metropolitan versus regional scale, but rather of negotiating the limits of the school’s

97 Ibid., 30.

98 Ibid., 39.
authority in confrontation with the technical machinery of “administrative planning.” In fact, when the “committee on regional planning,” first resolved to be formed during one of these meetings, finally took shape in 1946 as the Council of the Department of Regional Planning, it was almost evenly divided between GSD and Littauer faculties. Second, it was decided to extend “collaboration” on city planning problems to members of other departments of the University as well as to “outside agencies.” It was decided that the GSD should provide an introductory course on planning for undergraduates, to be called “Site, Shelter and the Community”—conceived as a “propaganda course,” and a part of “an effort to reach the laymen.” Finally, the relationships among the three GSD disciplines were reassessed, as Gaus addressed the city planning proficiencies to be required of architects and landscape architects:

Start with work on analysis of community, relation of population group to its hinterland, why it is located there, how changes in techniques and commodities tend to bring a lot of people, etc… Acquaint the students with the larger regions of the continent… constitution and legal powers, organizations and personnel for dealing with these problems, public services, etc… These are some of the things that will impinge on the architect and the landscape architect when he thinks about the future site and shelter in our communities.

Because Gaus’s contribution to the reorganization of the GSD curriculum came at a moment of internal transition in the discipline of planning, it was also a moment when the relationship of planning to architecture had the potential to be secured anew. From the point of view of architecture, engagement with planning re-conceiving itself as a vital discipline of

99 See Meeting of the Committee on Curricula and the Pamphlet of the School of Design, Harvard University, 26 January 1943, HUA, UAV 322.7.4.11A, Box 6, p.7.


101 Meeting of the Committee on Curricula and the Pamphlet of the School of Design, 6 April 1943, HUA, UAV 322.7.4.11A, Box 6, pp.11, 1.

102 To clarify the concept of planning implied by those requirements, Gaus elaborated: “I should like this man (the city planner) to be not merely the shaper, the planner of physical things, but also to possess the sort of realism that Professor Wagner has—studying every scheme from the economic viewpoint, from financial set-ups, etc. This training should be part of the city planner’s curriculum.” Curriculum Committee Meeting – Memorandum, 3 November 1942, HUA, UAV 322.7.4.11A, Box 6, pp. 4-5.
governance at the national scale promised new social agency—provided that architectural knowledge could be retooled to incorporate the techniques of planning at its very heart. The GSD responded by drawing closer to the discourses of management and the sciences on the level of professional education, while engaging in the popularization of physical planning at the general education level. From planning’s point of view, the possibility of securing a direct relationship between state agency and the nation’s urban fabric still appeared strong. The notion of “physical planning” and its future encompassed both of those wagers, imparting strategic significance to its definition. In her study of the American planning profession, M. Christine Boyer has demonstrated that the integration of planning into the bureaucratic state apparatus during the New Deal did not necessarily lead to the implementation of planning’s proposals. It rather, ironically, institutionalized the removal of planning from the arena of politics, where state control of the economy was set at odds to a plurality of special interests. The result was, on the one hand, an intensification of disciplinary techniques—as planning “turned inwards toward abstract policy formation, research, and information collection”—and on the other, efforts to fill a “void” in agency through the creation of a “popular sentiment” or “public will” in support of official intervention. However, during the mid-1940s, that outcome was not yet assured; and, possibly, the opposite would have appeared more likely. In 1943, Gaus’s claim that the operations of policy will “of necessity be registered in physical change” was a very educated guess.

In December 1941, Alvin Hansen teamed up with Federal Reserve Board economic consultant Guy Greer to produce a plan for postwar cities, titled *Urban Redevelopment and*

---


Housing. The Hansen-Greer proposals were widely publicized between 1941 and 1943, and correspondence between Gaus and Hudnut indicates that they were also discussed at the GSD.105 Hansen and Greer outlined a plan for a comprehensive rebuilding of the nation’s urban fabric, organized by state-municipality partnerships, and carried out by private enterprise with a substantial input of federal funds. It was the task of “society as a whole” to clean up “the social and economic mess left by past generations,” manifested in the physical form of cities. The solution would involve tying the nation-state to the locality through both financing and comprehensive coordination. A new national planning agency would determine “the proper and desirable role of each metropolitan area in the State or larger region and in the Nation as a whole” and would likely prescribe “changing the structure of the existing metropolitan areas,” as well as some “dispersal of populations.” New local planning commissions would prepare master plans in accordance with the national plan. The program would involve “planning of a character and on a scale heretofore unknown in this country,” and its outcome would be registered in the physical urban fabric. “Covering the whole metropolitan area,” Hansen and Greer wrote, “[the scope of the plan] would include virtually everything connected with the physical layout of the urban community.”106

During the New Deal, professional planning at the national level had appeared as an administrative function guiding the distribution of natural resources for economic recovery. Now, following the new emphasis on urban resources introduced in NRPB’s Our Cities report, Hansen and Greer found a way to put physical planning on the national economic agenda.

105 See correspondence between Joseph Hudnut and John Gaus of 30 December 1941, 2 February 1942, and 11 February 1942, in HUA, UAV 322.7.4, Subseries IB, Box 4. The letters also indicate that Gaus discussed Hansen’s proposals with Gropius.

106 Alvin Hansen and Guy Greer, Urban Redevelopment and Housing (Chicago: The Urban Land Institute, December 31, 1941), 6, 4, 5, 8.
through the concept of “urban redevelopment.” However, in accordance with Hansen’s conception of “stimulus,” a certain amount of ambiguity was introduced into the structures of agency implied in that physical plan: throughout the document, the authors emphasized that government aid should be extended “in such a manner as to induce the maximum possible construction and reconstruction by private enterprise,” and government control should be exercised primarily to the end of removing “certain legal and financial obstacles [that] stand in the way” of redevelopment by private enterprise.\(^{107}\) Hansen and Greer’s idea of physical planning was not so much the exercise of governmental control over the nation’s urban fabric, but rather, the provision of a national public administrative framework that would enable and sustain the exercise of local and private agency. Gaus’s thinking would also continue to develop around the relationship between planning’s administrative function and the nation’s built fabric as a product of the relationship between private initiative and public organization. His prominence in the field of administration would guarantee an important legacy for the Harvard deliberations on the role of “physical planning.”

Back at the University of Wisconsin in 1944, Gaus reflected to Henry James on his experience at the GSD:

I think that now… the importance of some education in the essentials of civic design for many types of administration is being discovered. [At Wisconsin we have moved] to include in a central place in our program a course… in which the element of conscious design in various relations will be studied. … I think I may properly say to you that I shall apply various things that I absorbed in my very happy year at Cambridge in my future work here or wherever it may be.\(^{108}\)

At the end of 1945, Gaus delivered a series of lectures at the University of Alabama, published as *Reflections on Public Administration* (1947). Evoking a mixture of the modernist position advanced by Hudnut and Gropius and the social sciences approach of the NRPB, Gaus proposed

\(^{107}\) Ibid., 1, 2.

\(^{108}\) John Gaus to Henry James, 19 August 1944, HUA, UAI 5.168, Box 258.
an “ecology of government.” The ecological approach to public administration, he wrote, builds “quite literally from the ground up; from the elements of a place—soils, climate, location, for example—to the people who live there—their numbers and ages and knowledge, and the ways of physical and social technology by which from the place and in relationships with one another, they get their living.” Through a case study of highway construction, Gaus charted a complex interplay of social, economic, cultural, and technological interactions put in motion by the invention of the automobile as a factor of “environmental change.” Legislative and administrative decisions intervened within this network to respond to various factors, and affect others in turn. “At last,” Gaus wrote,

at a specific point in the landscape, a shovel bites into the earth.... The road is completed. The process of government has come ‘round at last to complete a circle, and now returns to the original invention, the automobile, and presents it with a paved highway on which to operate. ... [Then the circle recommences as the] collective act, the highway program... itself becomes a new factor in the environment.”

The work of government was thus an ongoing process of both responding to and producing (physical) environmental change. But the ultimate goal of governing was to assure that such ecological transformations were truly “collective”; that is, that they integrated at every level governmental controls and local agency: from the nation-state to the municipality, from the municipality to the individual citizen. Only in such a way could the ultimate ends of

---


110 Ibid., 8-9.

111 Ibid., 55-57.
administration be realized in the maintenance of civil liberty.\textsuperscript{112} “The multiplying of services,” Gaus wrote,

has made the individual citizen… a participant. Even where no formal procedures and organization enlist him in the more obvious aspects of the administration of the laws, his consent and indeed his positive contribution of knowledge… are necessary for successful government. I have seen this to be true in small village communities, where face-to-face relations are easy; but I have noted it as well in cities, where a groping toward some kind of neighborhood life even under the most difficult conditions asserts itself… .\textsuperscript{113}

From the socio-historical givens to the shovel biting into the earth, from the administrative function to the realization of participatory democracy, planning would be a process of balancing control and freedom.

Gropius’s developing discourse on planning was another iteration of the same conceptual formula, focused on interrelating design and administration. In \textit{Rebuilding Our Communities} (1945), Gropius outlined his idea of planning as a function of participatory democracy. Based on his “lifelong conviction that the future of architecture and building stands upon a sound reorientation of the entire community set-up,” Gropius declared himself to be part of a “generation of architects who are developing a set of standards focused on contemporary social conceptions, and who have therefore joined hands with the professional planners.”\textsuperscript{114} On those stated credentials, he outlined a set of premises to guide postwar urban development. The basic concept was the direct relationship between the organization of the urban “pattern” and the quality of “community life,” the determining variable of which was whether “a citizen [has] personal contact with his elected officials.” Gropius’s well-known vision of a close-knit or “integrated” community, modeled on the medieval town square or the New England village,  

\begin{footnotesize}
\begin{enumerate}
  \item \textsuperscript{112} “I must risk the heretical statement that a good budget staff and a good personnel office will do more to preserve the liberties of the people than a good court, because they will be in operation long before a potential wrong is done.” Ibid., 115.
  \item \textsuperscript{113} Ibid., 120.
  \item \textsuperscript{114} Walter Gropius, \textit{Rebuilding Our Communities} (Chicago: Paul Theobald, 1945), 13.
\end{enumerate}
\end{footnotesize}
proceeded from the ability of “every one of us [to be] instrumental in the formation of his own environment” to the general defeat of metropolitan anomie.\textsuperscript{115} To that end, effective urban redevelopment would rely first and foremost on the reorganization of the nation’s “administrative framework” to enable participatory forms of government. Thus, the basic urban unit would also be the basic administrative unit of national government: a half-mile radius “neighborhood” with five to six thousand inhabitants. From the neighborhood, the “administrative area” would expand to the county or city precinct, then the state, and finally the federal government. In this way, “the social initiative of the people would… originate at a local level and gradually reach out into a wider region.”\textsuperscript{116} Thus, postwar physical planning would be premised on a direct relationship between a module of the urban fabric—the township—and a unit of government scaled to enable participatory democracy. Establishing the role of physical planning in regulating the interface between public controls and private freedoms would be the new task of architectural knowledge defined as “a flexible method of approach.”\textsuperscript{117}

3.4 THE COLLABORATION BETWEEN GROPIUS AND MARTIN WAGNER

The concrete details of Gropius’s proposals focused on outlining an institutional structure that would enable architecture’s participation in realizing flexible redevelopment. The two-part

\textsuperscript{115} Ibid., 16, 26.

\textsuperscript{116} Ibid., 20.

\textsuperscript{117} In this context, Gropius writes: “We badly lack legal instruments to channel any development—privately or publicly undertaken—into a controlled and well-balanced communal organism. We cannot blame the real estate man who simply follows his business; it is up to the community to keep him from running wild. … The end of this war will offer a challenge to replan society, to coordinate the achievements of the specialists, and embrace all phases of life. But life is a floating process and the essence of it is change. We need to fix upon a flexible method of approach before we can physically plan for the future.” Ibid., 25. See also Chapter Two of this dissertation.
organization would consist, first, of an Institute of Building Integration that would “become an adjustable link between private enterprise and governmental control.” It would oversee a “synchronized [research] effort on the part of all those involved in building operations—administrators, industrialists, financiers, realtors, architects, contractors, engineers, and workers”—yielding a plan for postwar reconstruction by private enterprise, to be submitted to the government for legislative action. The main task of such a plan would be to gradually eliminate government housing subsidies by “solving the housing problem economically”—that is, to reduce free market housing costs through “industrializing” the residential building process to make home ownership accessible to “the average income.” “Only such a plan,” wrote Gropius, “could, without infringing upon individual freedom, eliminate the bugaboo of excessive governmental control.” Individual dwellings would be given over entirely to the regime of freedom.\(^\text{118}\)

On the other hand, land would be gradually taken out of the systems of private ownership and dispersed agency. Localities should be given the power not only to zone already developed land, but to “regulate subdivisions” on outlying vacant land. The ultimate endpoint, although only suggested as a possible outcome, would be nationalization of the land. “[W]ithout undermining the basic conceptions of property,” Gropius wrote, “the ownership and use of land must be regulated by legislation so that the right of the community gradually rises above that of the individual when vital public problems are concerned.”\(^\text{119}\) In bifurcating the urban economic unit of land and building, each of the two elements could be given over to an opposing side in the

\(^{118}\) Ibid., 34-5.

\(^{119}\) Ibid., 32.
dialectic of freedom and control. That logic would underlie a series of collaborative projects Gropius carried out with Martin Wagner in the 1940s.

Arriving at the GSD in 1938 as assistant professor of regional planning, Wagner brought with him a fully forged planning methodology and experience as Stadtbaurat of Weimar-era Greater Berlin. The central physical unit of the soon unfolding Gropius-Wagner planning conception—the “township”—was, most directly, a translation of the Siedlungen built in the suburbs of Berlin and Frankfurt under the planning authorities of Wagner and Ernst May, respectively. Both the Siedlung and the township were settlements of a few thousand inhabitants each, set within park or garden spaces, and provided with the basic social facilities and services necessary to maintain self-sufficient community life. (Figure 27) Its lineage in the international “garden city” conception made the township an entirely plausible intervention in the contemporary American planning discourse, buttressed by the recent examples of TVA Greenbelt towns and wartime defense housing settlements—not to mention the highly influential 1920s RPAA model communities. (Figure 28) However, the Wagner-Gropius township would be grounded in an ideology of planning removed from both the anti-urban social utopias of the garden city and the socialist ideals of the Siedlung. Instead, it clearly resonated with positions developed by Wagner in the early 1930s, at the end of his career as Berlin’s Stadtbaurat.120

As analyzed by Manfredo Tafuri, Wagner’s 1931 break with the Social Democratic Party (SPD), under whose auspices he had carried out most of the settlement projects around Berlin, was premised on linking an economic analysis of industrial decentralization to the imperative of centralized economic planning. Both the growth of corporate industrial concerns and the

---

120 Wagner was active in the GEHAG (Gemeinnützige Heimstätten-Aktiengesellschaft), one of the two biggest building cooperatives operating in Berlin, since its foundation in 1924; he was appointed Stadtbaurat (director of central building administration) in 1927, and stayed in that position until 1933.
increasing mechanization of factory work, Wagner now argued, augured the end of the nineteenth-century metropolis as the city of production. The metropolis was becoming increasingly the city of administration and “services,” while industrial production, freed by advancing mechanization of reliance on the skilled labor pool concentrated in the city, moved to the outskirts in search of cheaper unskilled labor. No longer contained by the *Grossstadt*, production had expanded to the territorial scale of the region, and, ultimately, the nation. Therefore, the SPD policy of municipal urban planning was no longer sufficient, and had to encompass national economic management. In the urban field, centralized planning was ultimately premised upon nationalization of the land—the only way to control the new territorial mobility of places of production and of residential communities that spring up around them. *Das wachsende Haus* (1932), Wagner’s contribution to the contemporaneous prefabrication debate, tied rationalization of the residential building industry to an efficient urban plan premised upon the eventual socialization of the land.

However, Wagner’s proposals were driven by a technocratic rather than a radical socialist imperative. The point of centralized planning was not to guarantee labor’s control of production, but rather the increased efficiency of economic administration. In his analysis of the concept of *Sozialisierung* in Weimar Republic politics, historian Charles Maier points out the ambiguity and flexibility of “socialism” as a policy objective, which, ultimately, “allowed even conservatives and business leaders to design a socialism that they could accept.” In the negotiations leading up to the drafting of the Weimar constitution, for example, the SPD tended to define socialism as

---

121 This is the more contemporary term that Wagner uses in his English texts; Tafuri’s terminology has been translated as “tertiary work.” See Manfredo Tafuri, “Sozialpolitik and the City in Weimar Germany,” *The Sphere and the Labyrinth: Avant-Gardes and Architecture from Piranesi to the 1970s*, trans. Pellegrino d’Acierno and Robert Connolly (Cambridge, MA: MIT Press, 1987), 213, 225.

122 Ibid., 224-229.
“the maximization of the general welfare,” rather than a redistribution of economic power. Correspondingly, the economic policy that would come to define Weimar democracy was founded in the idea of *Gemeinwirtschaft*—common or collective economy—premised upon industrial self-management by associations of labor unions, business leaders, and consumer and government representatives, to the end of the enhancement of overall national productivity. This version of economic management for more efficient production, leading to the presumed furthering of communal welfare, was also the basic premise of 1920s managerial technocracies throughout Europe and America.\(^{123}\) The conception of *Wirtschaftsdemokratie* (economic democracy) advanced by the DEWOG was an extension of *Gemeinwirtschaft* into the field of housing production.\(^{124}\) Wagner’s writings of the period repeatedly engaged the two economic concepts, and his “community economy,” proposed as the model of nationalization in *Das wachsende Haus*, took off from the same ground.\(^{125}\)

The *Siedlung*, Tafuri maintains, was conceived as a model city of labor, an enclave within a capitalist world, in which socialism could take hold and bide its time. That is the model Wagner rejected, after years of attempting to advance it, as unworkable in practice because sapped at the center by a multitude of compromises with private interests, bureaucratic inefficiencies, and wasted funds. The solution was to centralize and depoliticize decision-making, to focus it in the hands of an architect-technician, whose task would no longer be that of providing ideal models of social organization at the scale of the city, but that of administering

\(^{123}\) However, the participation of the *Räte*, or Workers’ Councils, in economic decisions under the collective economy was received as a promise of an eventual syndicalist redistribution of power. See Charles S. Maier, *Recasting Bourgeois Europe: Stabilization in France, Germany, and Italy in the Decade after World War I* (Princeton: Princeton University Press, 1988), 138-146.

\(^{124}\) Tafuri, “Sozialpolitik,” 204-205.

\(^{125}\) See ibid., 228; Barbara Miller Lane, *Architecture and Politics in Germany 1918-1945* (Cambridge, MA: Harvard University Press, 1985), 250, n.16.
territory at the scale of the nation. So the new “technical-intellectual role,” as Tafuri puts it, that Weimar Republic architect-city planners found themselves called upon to perform, led Wagner from the city as the endpoint of organization, to the city as a mere mediating point between building as the site of individual freedom and national land as the locus of control and social agency. The wachsende Haus was the physical expression of that new relationship: the freestanding modular unit that dramatically displaced the collective row-house model of the Siedlungen, growing or shrinking to fit the changing needs of the inhabitant, and bypassing any intermediary municipal infrastructure to focus on the relationship between the dwelling and “our mother the land, which the good God has given to all the children of the universe.”

The Gropius archive preserves a letter Wagner wrote to Gropius in 1940, on the eve of their first public collaborative intervention in American planning discourse. The letter is a fragment of what must have already been an ongoing conversation between the two, and it concerns the question of prefabrication. Departing from his observation of Gropius’s reluctance to assign the development of new prefabrication systems in his student problems, Wagner advanced a passionate polemic on the need for ongoing technical and aesthetic research in that area. Has “my old Weimar- and Dessau-fighter Walter Gropius,” wrote Wagner, “lost his fighting power of 1924… ?” In urging Gropius to think back to his 1924 article on prefabrication

---


128 Martin Wagner to Walter Gropius, 8 September 1940, Houghton, Folder 1681. In his residential problems, Gropius would normally specify that the house(s) be designed “on the basis of prefabrication.” However, since the short duration of the problem made it impossible, as one assignment text explained, to “attempt to conceive a new system and to make it workable,” students were required to “adopt for their design an approved system of prefabrication and then to exercise their imagination towards attaining flexibility and variability of plan and elevation in spite of the limitations imposed by the standards of the chosen system.” See Walter Gropius, The Post-War Shelter for the Average Family, Architecture 2d, Problem III, 1 February to 18 March 1943, HUA, UAV 322.7.4, Subseries IV, Box 3, pp.1-2.
in housing, Wagner, however, appeared to be aware of Gropius’s current thoughts on the issue. As Wagner knew, Gropius had not abandoned his interest in prefabrication for housing, but he did shift focus in the late 1930s from technical to organizational issues, and moreover, had started to emphasize different aspects of that logistics.

The 1924 article focused on issues of construction technology, but organization was addressed as well. Gropius had premised the viability of industrialization in housing first on the involvement of a major corporation (a “large enterpris[e] involving all the separate branches [of production] under a single ownership… whose financial strength would be adequate to ensure the realization of such a major project”), and second, on public investment at the research and development stage (carried out by cooperative “consumer organizations”). In a 1938 article, on the other hand, Gropius no longer saw prefabrication as a problem primarily of standardization and mechanization in the building industry. “Surely,” he now wrote, “mass production methods must eventually permeate the building trade; but deep changes in the economic structure are indispensable before the market will be ready for prefabrication on a large scale.” Early experiments had demonstrated that “no single person or single firm alone can solve that gigantic task as Ford solved it for the automobile.” The solution had to be sought instead in “integration,” carried out by a “public institute” that could coordinate private research efforts in the various sectors of the building industry and “their practicability for the good of the

---

129 Since prefabrication was the subject of his letter, Wagner must have been referring to Gropius’s essay “Wohnhaus-Industrie,” Bauhausbücher 3 (1925). The first Bauhaus Books were planned to come out in 1924, but the publication of volumes one through eight was delayed for logistical reasons until the following year. Notably, the article appeared dated to 1924 in a 1943 collection of essays selected and edited by Gropius himself. See Walter Gropius, “Housing Industry,” The Scope of Total Architecture (New York: Collier Books, 1943), 128-135.

130 Gropius did not start his collaboration with Konrad Wachsmann on a new prefabrication system until 1941; and even then, the technological innovation was driven by Wachsmann, while Gropius largely took on the role of manager. See Gilbert Herbert, The Dream of the Factory-Made House: Walter Gropius and Konrad Wachsmann (Cambridge, MA: MIT Press, 1984).

131 Gropius, “Housing Industry,” 130, 134.
commonwealth,” and come up with a “guiding key plan [to] direct the future efforts toward housing.” That appeared to be the real point of contention for Wagner. “You do not believe anymore in a Henry Ford for housing the masses?” he wrote,

You believe still in a ‘clearing house for building integration,’ and so on? … I have passed through that stage of belief when I made [sic] my special experience with that famous ‘clearing house,’ called ‘Reichsforschungsgesellschaft,’ and when I encountered our double crossed and double cooked [sic] contractors in Germany. … No, let me out, Gropius, my belief is finally founded in deeds and deeds are inseparably connected with personalities, with creative personalities and characters, and thus I think that the Wright Brothers and Henry Fords have not yet grown old fashioned, they will continue to rule over industries… .

The problem of the dwelling now turned primarily around the question of administrative control, rather than building technology. Disenchanted by his experience with Weimar special interests, Wagner advocated centralized private control of housing production. On the other hand, Gropius envisioned a more diffuse cooperative system—perhaps chastened, for his part, by the failure of his 1931-32 collaboration with the German firm of Hirsch Kupfer in the production of a prefabricated Copper House model.

By July 1941, that disagreement was apparently resolved, as Gropius and Wagner presented their first collaborative proposal for low-cost housing. Remarkably, this initial venture was submitted as a report, titled “How to Bring Forth an Ideal Solution of the Defense Housing Problem,” to the 77th Congress of the House of Representatives that examined the effects of wartime demographic shifts on the labor market, the distribution of industrial activity, and the economic conditions of specific regions. The Gropius-Wagner proposal focused on those

---


133 Martin Wagner to Walter Gropius, 8 September 1940, Houghton, Folder 1681, pp.2-3.


135 Walter Gropius and Martin Wagner, “How to Bring Forth an Ideal Solution of the Defense Housing Problem?” *Hearings before the Select Committee Investigating National Defense Migration*, House of Representatives,
“deep changes in the economic structure” broached by Gropius’s 1938 text. “[T]he time has come,” wrote the authors, “to mobilize a powerful attempt to rebuild the country on a large scale, employing a] farsighted cooperation and coordination of all public and private agencies to be directed by a national key plan.” The plan would guide the development of a “town pattern” premised upon ongoing population migration, which the authors understood to be the basic condition of both wartime mobilization and postwar demobilization. This was a restatement of Wagner’s 1931 conclusions on the relocation of industries, necessitating the migration of workers, as a fundamental characteristic of the “Twentieth Century machine age.” The challenge was to channel and accommodate that permanent flux, rather than leaving it to the “so-called free play of forces,” the “automatic solutions following supply and demand of the free market.”

The proposed organization, combining public and private initiative, would consist of a new regional framework of settlement adapted to industrial decentralization and a new housing industry based on the production of mobile dwellings. The whole undertaking would be managed and supported through a national research Institute of Building Integration, centralizing all existing public and private institutions of housing research.

It is evident and remarkable that the problem of large-scale territorial organization introduced by total war mobilization appeared to precisely parallel the problem of territorial expansion in Weimar-era settlements. Although the congressional hearings report of 1941 was the first Gropius-Wagner intervention in America, it was not their first collaborative planning proposal. In 1934, the two sent an unsolicited proposal for regional development in East Prussia

---


136 Ibid., 6955.
137 Ibid., 6955, 6953.
to the new government of the Reich. Their attention focused on how to effectively counteract urban concentrations in the region—how to carry out an “interior colonization” across the territory of East Prussia’s “Space without People.” That, and no longer the provision of affordable housing, was the goal. The solution of a “new synthesis” of city and country in a low-density fabric of “city-country-city” (Stadt-Land-Stadt), in turn, dictated the “single family house” as the preferred residential unit.138 The formal relationship between the house and the land was not, however, emphasized. The goals of “interior colonization” would be the enhancement of industrial productivity through mechanization and the regulation of the workday, and the increase of per-capita purchasing power. “The problem of modern settlements,” wrote Gropius and Wagner then, “is far less a problem of physical planning than a problem of economic and technological planning.” 139

In the 1941 proposal, on the other hand, the key issue would be the relationship between the demountable dwelling—the “new type of house, [which is] not definitely fixed to the site during its whole life-span”—as a basic physical unit, and a new national socio-economic “pattern” as the basic organizational structure. “Being built as demountable units,” Gropius and Wagner wrote, “such factory-built houses would have also the advantages… of being bought and sold second hand and third hand: hence of being produced and traded as a commodity. As long as the house was inseparably fixed to the noncommodity ‘land,’ it could not be traded as a commodity.”140 In a 1939 GSD lecture, Wagner had likewise sketched out a fundamental


139 Gropius and Wagner, open letter to the government of East Prussia, 8. Emphases in the original.

opposition between land and commodities. The basic economic attributes of commodities—
mobility, reproducibility, and interchangeability—were the opposites of the attributes of land.
Therefore, Wagner called for “a special kind of land politics and an exceptional position for land
in ordinary economics and politics.”141 The severing of the economic link between building and
land, central to the concept of real estate, would become crucial to the Gropius-Wagner
intervention, even as it foretold the eventual failure of that intervention as a national planning
solution in the American context. Beyond its immediate sphere of application, however, the
caesura introduced between the set of competences having to do with the distribution and
regulation of the land, and those having to do with the production of buildings, would become a
strategic boundary erected within the domain of architectural knowledge.

In the spring of 1942, Hudnut and Gaus corresponded about Hansen’s urbanism
conference, held at Harvard in March, mentioning particularly a “flirtation between Mr. Wagner
and Mr. Hansen over post-war planning.”142 For both Wagner and Gropius, the Hansen-Greer
proposals became a point of great interest, and also of contention. To recall, Hansen and Greer
advanced a plan for catalyzing private investment through government-sponsored, planned
redevelopment of urban areas – “cities and towns.” While their interpretation of city planning as
a problem of the national economy would have been close to Wagner’s and Gropius’s own
developing ideas, the element of the Greer-Hansen proposal that appears to have most attracted
Wagner’s attention was the centrality they assigned to the issue of land costs. According to
Hansen and Greer, overpriced urban land in “blighted” areas was one of the two major
“obstacles” to redevelopment by private enterprise that planning had to remove. The second, and

142 John Gaus to Joseph Hudnut, 19 May 1942, HUA, UAV 322.7.4, Subseries IB, Box 4.
related, obstacle was the lack of municipal authority for large-scale redevelopment. Therefore, Hansen and Greer argued, cities should be empowered to purchase large tracts of overvalued land with federal subsidy, and then sell it (at a much reduced cost) to be redeveloped in accordance with a new master plan. In this way, “such portion of the present market value of slum and blighted land as is not sustained by the proposed future use [would be] eliminated.”

During discussion of the issue at Harvard, Wagner is recorded to have spoken up in support of a “new modern town planning law, either national or State,” that would make land acquisition a function of physical planning—both centralized in the planning board.

Although Wagner’s conception seems entirely aligned with that of Hansen and Greer, his vision of centralized public control over land exercised through the physical plan was not at all what the American economists had in mind. Hansen and Greer continuously emphasized the protection of “local initiative” and the flexibility of public controls. Planners, they wrote, should know full well that [cities] are living organisms, changing and adapting themselves to conditions many of which we can neither foresee nor control. … For each community, we must conceive of the master plan itself, not as a static thing but rather as a dynamic system of procedure subject to constant revision. About the most that we can reasonably expect is to proceed from a state of virtually unplanned chaos to one which is at all events less chaotic…”

Therefore, while Wagner must have felt encouraged by Hansen and Greer’s putative embrace of “what in America may seem a wide departure from traditional concepts of land ownership and control, [but follows] principles long established [on] the continent of Europe,” their conception of control was rather different from his.

---

143 The Problem of the Cities and Towns, 61-2.
144 Ibid., 75-6.
145 Ibid., 71, 64-5.
146 Ibid., 88-9.
To assure inclusion of “a point of view inadequately discussed at the conference,” Gropius and Wagner contributed a co-authored text to the published proceedings.\(^\text{147}\) The Gropius-Wagner “epilogue” opened with a plea for physical planning, situating it firmly in line with the concurrent GSD efforts to advance the role of “design” in planning discourse. “[E]ven the most perfect tools,” wrote the authors, “with which to organize life in the towns and cities—legislative, administrative, economic or technical—are only the means of forming the living space of the people into a whole, organic, cultural entity.”\(^\text{148}\) However, the physical paradigms—“models” or “blueprints for rebuilding our cities”—Gropius and Wagner proposed were only derivations of a vision of the political economy centered on control of the land. Self-contained “townships,” aggregated as needed into larger cities or regions, would “form the basic units of the new town pattern,” premised on a regional conception of “country-cities in city-countries.”\(^\text{149}\) This physical blueprint for regional development could only be put into effect through a neat reversal of the land-acquisition policy proposed by Hansen and Greer: rather than using public funds to “eliminate” excess market valuations on overdeveloped land, public funds should be used to buy up cheap underdeveloped land. The community would then “gradually redeem land” for higher values through infrastructural development—“public improvements,” rather than speculation. Citing a contemporaneous, and clearly Hansen-influenced, NRPB report, Gropius and Wagner embraced the goal to “make urban land fluid again.” But the significance they assigned to that conception was strikingly different from that of the source. “The land,” they wrote, “has been traded across the counter of real estate offices as though it were a commodity.

\(^{147}\) Alvin H. Hansen, “Foreword,” *The Problem of the Cities and Towns*, x.


\(^{149}\) Ibid., 111, 102.
But land is not a commodity; for, unlike buildings, it cannot be produced nor moved nor replaced. Land is of such a peculiar nature that it should be owned by the communities which will become increasingly the constant element of our society, with a more or less fluctuating population.”

Finally, the commodification of the individual dwelling was spelled out as the necessary counterpart to the public ownership of the land: “As soon as the non-commodity land can be legally detached from the commodity house, industrial plants producing modern shelter units on the assembly line basis will flourish.” Because land would no longer be the catalyst of flexible endogenous growth, it would be housing that would provide the essential element of “flexibility” in the master plan, spelled out in all capital letters for emphasis: “the foremost principle of planning—FLEXIBILITY… conditions must be kept fluid!” The point was clarified in a collaborative problem given by Gropius and Wagner at the GSD in January, several months prior to the Hansen conference, and published as an article in the *Architectural Forum* in July of 1943. Assuming increased population mobility as the composition of the workforce changes with the changing needs of the industry, the boundaries of the “township” must be

---

150 Ibid., 110. As detailed in other contemporaneous texts by Gropius and Wagner, the logistics of carrying out communal land ownership and development would be very similar to the process established in 1920s Germany: A “Metropolitan Reconstruction Finance Corporation” would be set up and funded through proceeds from imposed “amortization quota” on all existing city structures, publicly and privately owned. This replicates the model of land acquisition with proceeds from the *Hauszinsteuer*, and development by building corporations, such as the GEHAG. As Wagner and Gropius were careful to point out, “[s]uch a regulation would not mean the compulsory expropriation of private property; on the contrary, it would mean conservation of private property, and the owners would be duly credited with the annual quotas but would be entitled to spend them only for the renewal and rebuilding of city structures.” Martin Wagner and Walter Gropius, “Cities’ Renaissance,” *The Kenyon Review* 5 (Winter 1943): 28. See also Walter Gropius and Martin Wagner, “A Program for City Reconstruction,” *Architectural Forum* (July 1943): 76-7, 86. This reuse of Weimar-era models serves to remind that the new element in Wagner’s thinking was not the goal of communal land ownership itself, but rather its progressive expansion from the municipality to the nation at large.


allowed to grow or shrink over time. That flexibility would be accomplished “by making the housing facilities elastic.” Different housing types should be offered: permanent units adaptable to the evolution of the family (the wachsende Haus model), demountable units, and mobile units (trailer homes) for migratory workers.153 (Figure 29) With the functions of control and freedom thus distributed, respectively, between the master plan and the dwellings, a caesura was introduced in the practical development of the overall scheme.

The Forum article presented an elaboration of the Gropius-Wagner national planning proposal, detailing the economic and administrative set-up, illustrated with student designs for a model township in the Boston metropolitan area. The project was illustrated on a scale sequence from the region to the individual dwelling: a geographical survey map of the area proposed for redevelopment; a map of the regional traffic distribution; a set of typological permutations of the “elementary features of a ‘township’”; the plan of the final layout; and, finally, several studies for dwelling units.154 (Figure 30) The presentation materials make visible both the continuity of development from the regional to the township scale and the disjunction between the township plan and the dwelling units. While the plan presupposes the use of single-family freestanding houses, it does not dictate the variability of type or treatment; in fact, the latter is excessive with regard to the requirements of the former.

The break may be further illustrated through a comparison with RPAA studies, which Gropius and Wagner referenced as precedents for their own proposal. As Francesco Dal Co has pointed out, RPAA garden city designs presented “an organic fusion of plan and dwelling;” there was a conceptual continuity between the city layout and the building types, so much so that the

---


154 Ibid., 80.
buildings became simply an architectural expression of the urban plan. Building was conceived by the RPAA at the urban scale because, like the city itself, it was a product of a systematic application of economic standards and the calculation of efficiencies of services. Thus, architectural form was a matter of “indifference;” the formal rigor of the garden city was not in the “façades,” but in the functional urban organism itself. Such organic integration between the urban and the architectural scales is missing in the Wagner-Gropius “township.” As in the RPAA studies, the design of the dwellings begins here with an economic calculation tying it programmatically into the logic of the overall town (in this case, the calculation coordinates anticipated income of residents with per capita space apportionment, based on maximum feasible rental costs). But that is only the starting point; the ultimate task is to provide a “maximum of flexibility in housing design” so as to “fit the family in any state of its size, its age-composition, its income, and its other varying demands.” Such flexibility must extend not only to size and use, but also to appearance. “The more standardization and prefabrication is used,” write Gropius and Wagner, “the more will be needed the vision of the designer to secure individual variety, in spite of the increasingly limited number of types to be used.”

Although intimately tied, building and land were autonomous functions both in concept and in practice:

The town planner cannot make a site… ‘flexible,’ and he cannot [relocate a] neighborhood quarter…; he knows that not the land and not the landscape, but the man-made shelter form and shelter

---


156 Ibid., 243.

157 See Walter Gropius and Martin Wagner, Housing as a Townbuilding Problem: A Post-War Housing Problem for the students of the Graduate School of Design, Harvard University, February-March, 1942 (Cambridge, 20 January 1942), 31-32, 33.

158 Ibid., 44.
construction grows obsolete… in the struggle with time and technological progress. … [T]he building of new settlements will in the future be based on planning principles that emphasize lasting site values in contrast to more flexible building values…. 159

The distinction between the evolution of the master plan and the dwelling, notably, did not also divide the competences of the architects from those of the planners. As per standard practice, the GSD problem was divided into three contiguous phases: “fact-finding” research, master plan and site layout, and design of housing types. While the planning studies were to be carried out collaboratively by architects, planners, and landscape architects, the design of housing units was assigned to individual students. 160 Up to a point, “group work” linked planning and architectural knowledge; but a space of individual responsibility and invention was reserved for architectural design at the end.

In March of 1942, Gropius wrote to Giedion putatively summarizing his impressions of the Hansen conference, but clearly also reflecting the impact of his ongoing confrontation with American planning discourse. There was a “fundamental change” in the political economics of planning afoot: “The economical and administrative aspect [of] our problem is of outstanding importance and cannot be separated from the social and technical points of view which we have been interested about so far mostly.” The CIAM model suffered from an insufficient emphasis on “the problem of administration.” A closer integration was needed between the administrative knowledge of the contemporary planner and the social and aesthetic technologies of architecture: “…our endeavor should be to bring them closer together because I see clearly that the solution can only be a simultaneous approach from all these fields.”161 Gropius’s practice in the 1940s

159 Ibid., 30, 45. Emphasis in the original.

160 Ibid., 1-3.

elaborates the following strategic proposition: if architectural methodology was to join with planning knowledge, the task of rebalancing freedom and control set by planning’s “administrative function” would have to find an architectural equivalent. On the one hand, Gropius’s institutional collaboration with Hudnut aimed at the preservation of architecture at the heart of planning through recasting “design” as a form of knowledge fundamentally akin to that of the social sciences. His contemporaneous engagement with Wagner focused on the invention of a paradigm of that knowledge that could balance administrative control of the political economy with a relative freedom of its physical manifestations in the urban fabric. The bifurcation of land and building was its formal outcome. The preservation of “unity in diversity,” or the individual within the group, that Gropius would repeatedly promote as an architectural translation of “democracy,” would be the ideological expression of the same imperative. The design process that produced the superficial appearance of a “decorated diagram” was premised upon the maintenance within control’s necessary rigors of an integument of freedom.

The closing of the NRPB in 1943 put an end to a phase of American planning policy that articulated a link between state control of the urban fabric and national economic planning, even of the limited and “fluid” type envisioned by Hansen. With the demise of the NRPB, federal policy began to circumscribe its range of agency to the provision of housing. The National Housing Administration (NHA), which displaced the NRPB as the center of urban study in Washington, had as its task “to build houses, as many houses as it could.” But it was not until the passing of Title I in 1949 that urban redevelopment was finally severed from the Keynesian logic of economic management at the national scale and given over to the task of preserving local real estate values. By the late 1940s, Gropius’s attempts to intervene in planning policy were over, and he was focused on building up a practice with The Architects’ Collaborative

102 Gelfand, A Nation of Cities, 104.
(TAC). The 1940s, however, had also set the scope of his ideological influence in American architecture.
“I wonder whether you have come across Kepes’s new book, *The Language of Vision,*” wrote Gropius to Alexander Dorner in 1945. “At last, after all our endeavours [sic] in the Bauhaus, someone has taken up again this problem of formulating in definite terms a language of design, making objective fact statements instead of talking in terms like ‘wonderful’ and ‘beautiful.’”¹ In the two previous chapters, I have argued that Gropius’s conceptions of design practice were oriented to the task of sustaining a balance of freedom and control, played out across different areas of design expertise. His notion of design “method,” discussed in Chapter Two, stressed the import of spontaneous or unprogrammed decisions within a process otherwise constrained by the outcomes of functional and financial analysis. With respect to city planning, as discussed in the previous chapter, that essential fraction of freedom was extended to the production of residential buildings when set within the urban fabric subject to overall state control and regulation. The interest in a “language of vision,” which Gropius proclaimed to share

¹ Walter Gropius to Alexander Dorner, 20 March 1945, HUA, UAV 322.138, Box 2.
with Kepes, was similarly motivated by the need to establish a “controlling agent within the [otherwise intuitive] creative act.”²

The need for such an agent was expressed by Gropius in a 1947 essay that may be taken as the most complete statement of his thoughts on the subject. Setting in a wider context his reaction to Kepes’s book cited above, Gropius wrote: “today, after a long, chaotic period of l’art pour l’art—so utterly unrelated to the collective life of man—a new language of vision is slowly replacing individualistic terms like ‘taste’ or ‘feeling’ with terms of objective validity.”³ A basic perceptual grammar, he continued, or an “optical ‘counterpoint’” similar to the twelve-note musical key, this language of vision was “based on biological facts—both physical and psychological”—and at the same time reflected the “impersonal cumulative experience of successive generations.” Instituted as a fundamental part of design education, it would also serve as a “common bond” linking the designer to the rest of society, enhancing his “stature as a responsible man and citizen.”⁴ The notion of design based on optical rules subject to objective analysis harkens back to the Bauhaus; and Gropius focused his practical efforts on behalf of the “language of vision” at Harvard on a struggle to set up a Basic Design program, modeled after the Bauhaus Vorkurs.⁵ Much like the Vorkurs, Basic Design as Gropius envisioned it would involve exploration of the properties of materials and abstract formal relationships.

---

² Walter Gropius, “Design Topics,” *The Magazine of Art* 40 (October 1947): 304. Gropius and Kepes were friendly, and discussed issues of visual perception when they spoke. See, e.g., a 1968 letter to Gropius in which Kepes writes: “I promised I would send you some titles and… some books that might help you get some information on perceptual problems, and in particular problems of scale.” Gyorgy Kepes to Walter Gropius, 22 January 1968, AAA, Kepes Papers, Reel 5305, frame 573.


⁴ Ibid., 304.

However, the educational rationale for the course no longer focused on the student’s ability to manipulate form and material, but rather on his ability to influence the psychological reception of design. “This is the task of [design] education,” Gropius now maintained: “to learn what influences the psyche of man in terms of light, scale, form, and color”; because, in possession of such knowledge, the designer could “organize the psychological effects of his creation at will,” and “create new and stimulating sensations which will make us more receptive and more active.”⁶ The relationship to the Vorkurs was, thus, ultimately superficial. The primary targets for Gropius’s interest in optical rules were, on the one hand, the receptive mind, and on the other, its counterpart in forms of community identified with citizenship. This remarkable overlap between perceptual psychology and socio-political identity belonged to the discursive environment of the 1940s and 1950s. It will be the task of this chapter to untangle its logic, as it was in the work of Kepes, rather than of Gropius, that this discourse would find its fullest articulation with respect to design practice. Nevertheless, it is instructive, by way of introduction, to pursue for a moment longer the impact of that discourse on Gropius.

In 1947, when Gropius wrote the essay cited above, a preoccupation with psychology in general, and the psychology of perception in particular, was evident in both academic and popular culture.⁷ *Life* magazine, from which Gropius borrowed illustrations of optical illusions he frequently used in lectures and also included in his essay, ran multiple articles on perceptual psychology during the 1940s and 1950s, culminating in an entire three-issue series titled “The

---

⁶ Gropius, “Design Topics,” 300, 301, 303.

Age of Psychology in the U.S.” (Figure 32) But perhaps the crucial reference for Gropius’s reflections on perception was an influential and enormously popular book *Education for What is Real* (1947), written by education professor Earl C. Kelley. Gropius evidently read the book as soon as it came out, and proceeded to make it a required reading for his GSD students. As will be seen later in this chapter, Kelley argued that education should focus on the effects of the social environment on the psychological and ethical constitution of democratic citizens. Gropius adopted that premise and translated it into a two-pronged reflection on the educational role of perception, encompassing both the education of the citizen through design and the education of the designer as a good citizen.

As Gropius conveyed it, Kelley’s message was that “sensation comes from us, not from the object which we see.” Perception’s grounding in a complex of understanding, memory, anticipation, and other psycho-cognitive faculties called for a shift of focus from the aesthetic or functional properties of design to the psycho-social effects of its reception. “If we can understand the nature of what we see and the way we perceive it,” Gropius summarized, “then we will know more about the potential influence of man-made design on human feeling and thinking.” As some GSD student problems assigned by Gropius demonstrate, the practical application of

---


10 Pearlman observes that it was perhaps the sole required reading Gropius ever assigned to students. Pearlman, *Inventing American Modernism*, 224.


12 Ibid.
perceptual research in the design process could involve the production of optical illusions through texture and color. (Figure 33) Gropius also developed for use in his courses a list of optical illusions with direct consequences in architectural design. He observed, for example, that “architectural lines may be disturbed by irregular or diagonal textures of materials, for instance, wood grains or marble patterns, therefore the texture of materials must be a part of the intended composition”; and that a “diagonal poché effect on a wall changes its direction in space, from ‘static’ to ‘dynamic.’”

13 “Colors can be active or passive,” Gropius explained in an article, planes or walls can be made to advance or recede by color treatment. The dimensions of a room thus appear to be different from what the actual measurement tells us. In fact the designer—if he masters these means—can create illusions which seem to belie the facts of measurement and construction.

14 The production of such effects, which he called “the artist’s magic,” was one example of the influence the postwar discourse of vision had on Gropius’s design pedagogy and practice.

15 Another can perhaps be traced in the design for the Harvard Graduate Center (Harkness Commons) of 1949, which Gropius executed with The Architects Collaborative (TAC). A dormitory complex with dining and recreational facilities on the northern edge of the Harvard campus, Harkness Commons consists of eight buildings grouped around open courtyards and connected by covered walkways or pergolas. Ever since William Jordy juxtaposed images of the complex with those of the Dessau Bauhaus in his canonical essay of 1968, Harkness Commons

13 [Walter Gropius], “Optical Illusions To Be Considered in Design Training,” 3 April 1940, Houghton, Folder 36.
15 Ibid., 303. It is notable that this influence also illuminates the departure from a premise of truth to materials that has been repeatedly traced in the treatment of the building envelope in Gropius’s postwar design. The classic argument for this aspect of his design approach as an aesthetic failing remains that of Klaus Herdeg. See Addendum to the Introduction of this dissertation for an extensive discussion. But it is, of course, an ideological position long associated with modern architecture, equating the aesthetic expression of the building’s structural and material properties with moral rectitude—a position that Gropius himself perhaps never held—that can, in turn, serve to link the presumed aesthetic failure of his work with an implied moral failure. Most recently, this association has been rehearsed, for example, in an observation made by Alan Colquihoun about a 1928 apartment block designed by Gropius for Siemensstadt, Berlin: “Note the use of brick to give the impression of longer spans in windows and balconies. These kinds of trompe l’oeil effects are typical of Gropius, a man of compromise, both aesthetic and political.” Alan Colquihoun, Modern Architecture (Oxford: Oxford University Press, 2002), 167.
has served as a telling example of the decline in quality in Gropius’s postwar design production.\(^{16}\) (Figure 34) Adjoining the striking axonometric, in which the Bauhaus floats like an abstract composition of sliding geometrical shapes suspended in a weightless Cartesian matrix, the Graduate Center in aerial view certainly appears formally stilted, at once rigid and diffuse. The images TAC chose to illustrate Harkness Commons, however, convey an entirely different perspective. They are evidence of a design conception that all but excluded consideration of the building as object. One is offered street-level, pedestrian-eye views, in which the architecture is glimpsed in fragments, as though by a casual observer, the occupant or the passerby.\(^{17}\) (Figure 35)

This conception of the building as a framing device, with respect to which the open spaces of the courtyards are brought into focus, is evident in TAC narratives of the design process. The concept was to replicate the “spatial theme of the Harvard Yard,” which is laid out in a sequence of quadrangles framed by buildings.\(^{18}\) “[T]he shaping of well-proportioned open spaces between buildings,” the architects wrote, “is as important as the form of the buildings surrounding them.” Those interstices, moreover, were not treated as shapes or volumes, but rather as orchestrated spatial experiences. The recreation of the mobile viewer’s experience was then an essential part of the design process: “Emphasis was laid on creating an illusion of motion from one open space to another… The open spaces… flow into each other. The onlooker


\(^{17}\) Though these photographs convey none of the drama and dynamism of 1920s urban cityscapes by Laszlo Moholy-Nagy and other New Photographers, they share a similar intent to capture the architecture as seen by the mobile embodied eye.

becomes aware of more interlocking spaces beyond and is tempted to walk into the next space and another range of vision.”

Gropius himself applied to his discussion of Harkness Commons exactly the terms he had earlier derived from Kelley’s text. “To understand design,” he wrote in an outline for a 1949 talk,

we must realize… how much of what we think we see is actually the result of experience. Sensation comes from us, not from the object which we see. … The artist or designer, then, must compromise between reality and illusion; he must know and make use of the multitudinous optical and psychological peculiarities of the human being.

That agenda was extended in the Harkness Commons design, tailored to “the human capacity to experience and sense harmonious space and scale.” Finally, as such, the Harkness Commons would also contribute to the ethical education of the Harvard student through the perceptual properties of the university environment. “The impact of environment on a young man is decisive,” Gropius wrote, linking the physical environment to Kelley’s notion of the social environment, “[s]timulating environment is just as important as vigorous teaching.”

In Harkness Commons, design’s educational role would be sustained precisely through the dissolution of the architectural project into an environmental experience.

In spite of his best efforts, Gropius never succeeded in establishing a program of perceptual education at the GSD. Had he done so, it would have likely been linked to the general education program planned at the same time for Harvard University as a whole. However, the

---

19 Ibid., 63.


21 Ibid., 1.

22 The artist Richard Filipowski was hired to teach a trial program in Basic Design, under the heading of Design Fundamentals, for 1950-1951. At that time, GSD faculty discussed linking the Design Fundamentals courses to Harvard’s core curriculum in general education. Having been met with staunch opposition from Hudnut, such efforts were abandoned. See Pearlman, *Inventing American Modernism*, 218-222.
discourse linking vision, education, and citizenship through recourse to the interiority of the thinking and perceiving subject only gained momentum into the 1950s. Shortly after Gropius retired from the GSD in 1951, Harvard embarked on a university-wide program to advance the education of vision as a fundamental part of general education—realized eventually in great part through the efforts of Dean Hudnut’s successor at the GSD, Jose Luis Sert. That history will be traced later in this chapter. The part played in it by Gropius, however limited, already reveals a shift of attention in design practices from the physical attributes of design to their effects on the interiority of the receiving subject, always placed in a social context. It is not, of course, that aesthetic or functional decisions cease to matter in such instances, but that the designer’s material production ceases to be seen as the exclusive end goal of practice, and emerges rather as a medium for interventions that take place in entirely less tangible terrain. To that territory Kepes dedicated the greater part of his career.

It may be said that Gropius’s activities as an educator during the 1930s and 1940s, traced in the previous two chapters, prefigured the disciplinary logic of educational discourses pursued by Kepes, inasmuch as they tended to shift from a concern with design processes to a preoccupation with design capacities, the faculties of the trained designer. The discourse of vision, however, indexed the emergence during and immediately after the war of a set of issues that exceeded the institutional and rhetorical structures of professional knowledge. Steeped in this larger discourse, Kepes increasingly moved away from concern with the training of the designer toward the problem of cultivating a collective subject he would refer to as the “social man.” His project, in turn, reflected design’s response to changing imperatives within the politics of knowledge traced in this dissertation as it shifted from the relationship between the professional and the state to that between the nation and its citizens.
At the end of the 1930s, it may be recalled, economists heralded the advent of a new “intensive” development of America’s physical resources after the closing of the frontier, in which entrepreneurial freedom would have to be balanced against the constraints of state control.

As late as November 1944, for example, The New Republic editors proclaimed the need for a new postwar frontier that “government and the people together can create… not by extension of the nation but by intensive improvement of what we have.” The magazine’s ideas still focused on “great new regional developments and the rebuilding of cities.”

In postwar discourses and federal policies, however, another vision of the reopened frontier came to displace that late New Deal formulation, one whose dimensions were no longer measured against the geography of the continent. The same month The New Republic editorial posed the question “Is There a New Frontier?” President Franklin D. Roosevelt privately suggested: “new frontiers of the mind are before us.”

The vast expansion of federal investment in educational and research institutions heralded in that formulation relied on the same economic rationale that had previously defined federal funding of infrastructure and urban redevelopment projects. This is made clear in the language with which the state communicated its goals. The mind was declared in 1947 the nation’s “most precious natural resource,” its cultivation measured against the gross national product. Education was identified in 1956 as a “careful mining and refining of all human talents in the land.” The schools, it was said, “by providing a channel for ambition… have taken

---


the place of the frontier, and… have preserved the independent spirit of a pioneer nation.”

By the early 1960s, President John F. Kennedy crystallized this rationale with unrivalled precision. “The human mind,” he announced, “is our fundamental resource. A balanced Federal program must [include], beyond incentives for investment in plant and equipment,… determined measures to invest in human beings.” But such measures would be “selective, stimulative and, where possible, transitional.” According to the logic of “stimulus” spending, investment in the nation’s minds was “Federal assistance without Federal control.”

This chapter will argue that the displacement from material to intellectual resources in the emergence of education as an important channel of postwar state formation was paralleled by a similar displacement from production to reception in the discourses of those who sought a role for design in the postwar educational enterprise. Kepes’s work during and immediately after the war manifests this displacement in a project to define what might be called the citizen’s mind as the endpoint of design practice. For Kepes, the (politically mediated) intellect, rather than the aesthetic artifact, is the ultimate product of the designer’s work. The problem becomes that of how to define the role of design practices in the cultivation of desirable intellectual characteristics. It is across the field circumscribed by that problem that the interface of freedom and constraint will be played out.

---


“Art transforms us,” wrote Kepes’s mentor, the Hungarian avant-garde artist Lajos Kassak, “and we become capable of transforming our surroundings.”29 We have seen in Chapter One how Moholy-Nagy articulated that revolutionary premise through his dual role as the maker of objects that perform a visual training and as the educator of aptitudes for the new knowledge worker, the “man of many functions.” The distinction, perhaps, is subtle; and, inasmuch as it can be claimed, the latter role was for Moholy subservient to the former. Throughout his practice, he maintained a focus on the metaphorical “architecture” defined at Weimar, in whatever visual medium it may have appeared, as the goal of the designer’s creative activity. In his last position statement, published in 1947, Moholy still rehearsed the notion of art as a “Weltanschauung [that] registers contemporary problems [and] projects a desirable future order,” a “visual counterpart to a more purposeful, cooperative human society.” Thus, art objects acquired “an educational… function” largely metaphorically.30 Extending that model to industrial production, his New Bauhaus in Chicago functioned as a laboratory of practical inventions or prototypes.31 The focus of the school’s curriculum—even as it paid heed to the “whole man,” introducing the student to humanistic and scientific subjects—was unambiguously the “designe[r] of handmade and machine-made products.”32 The training of “new men with fresh mentality,” of the “new


31 Founded in 1937, the New Bauhaus went through several institutional changes during Moholy’s tenure: it was reorganized in 1939 as the Chicago School of Design, and became in 1944 the Institute of Design. When referring to practices and policies that spanned those transitions, I will herewith use the “New Bauhaus” as an umbrella title.

type of designer, able to face all kinds of requirements,” interested Moholy to the extent that it ultimately bore fruit in new commercial applications.  

33 The designer as a flexibly skilled innovator was, in that sense, the counterpart of the artist who represents a possible future in the work of art. Artists, Moholy commented in 1943, “are always far ahead. … [They] were using chromium and aluminum long before manufacturers could find much use for those materials. The artist sees beauty in a new material, and then others see it.”

34 Reflecting on the differences between his approach and that of Moholy, Kepes emphasized his own interest in “organizing [the Bauhaus’s] new findings” in “materials, techniques, and sensory fields,” as well as his focus on “the meaning of order in the visual experience in its present social context.”

35 The activity he described—that of consolidation, articulation, definition of meaning and relevance—is more akin to scholarship than it is to artistic exploration. In another context, Kepes would summarize: “Moholy was more interested in… express[ing] an achievement, …the last moment of artistic ideas. … I had... a very different basic attitude to both education and art than he had.”

36 The statement again affirmed Kepes’s distance from the project of artistic innovation.

33 Ibid., 65. Laszlo Moholy-Nagy, New Bauhaus Catalog, 1937, cited in Allison, “Perception and Pedagogy,” 57-58. In his first public address in Chicago, Moholy declared “to you—the industrialists—we offer our services for research. We shall work on your problems. In our workshops we shall provide research possibilities for synthetic fibers, fashion, dying, printing on textiles, wallpaper design, mural painting, the use of varnishes, lacquers, sprays, and color combinations in decorating; we shall explore for you typography, layout, commercial and portrait photography, microphotography, motion pictures in color and black-and-white, commercial art in posters and packages. We shall design stage display, window and shop display, exposition architecture, and all other architectural structures from a prefabricated bungalow to a factory; and we shall work with stone, glass, metal, wood, clay, and all plastics in the product design and sculpture classes.” László Moholy-Nagy, untitled public address, 23 September 1937, Knickerbocker Hotel, Chicago, IL, reprinted in Sibyl Moholy-Nagy, Experiment in Totality (Cambridge, MA: MIT Press, 1969), 148-149.


35 Gyorgy Kepes to Sibyl Moholy-Nagy, 8 September 1948, Kepes Papers, AAA, Reel 5303, frame 220.

The fundamental difference in approach to design practice between Kepes and Moholy may be measured by comparing two remarkably similar hypothetical institutions or organizations, combining precisely art and education, imagined by each within a few years of each other. Writing in 1937, Moholy proposed establishing an Academy of Light, whose task would be to explore light as a “creative factor,” stemming from new technologies of photography and film. The “theoretical and practical study of the uses of light” pursued at this Academy “from the historical, physical, physiological and other points of view,” would then be put to use in various commercial applications—“press photos, book illustrations, theatrical lighting, advertising of films and illuminated advertising.”37 It is true that, employed a year later at Moholy’s New Bauhaus, Kepes carried out precisely that kind of project as instructor of the “Drawing and Light Studio” (and eventually, by 1942, head of the “Light and Color Workshop”).38 Documented in his first book Language of Vision (1944), Kepes’s workshops entailed explorations in various photographic techniques.39 (Figure 36) As indicated by the predominance of advertising design illustrations in the book, many using innovative photographic techniques much like those evident in the work of Kepes’s students, the explorations of light and color pursued in his courses were destined overwhelmingly for advertising applications, actively pursued in Chicago by Kepes himself with his work for the Container Corporation of America. (Figure 37)


However, an undated note made by Kepes sometime after America’s entry into the Second World War indicates a different set of ambitions and educational aims. Here, he sketches out a proposal for a “University of Vision” that would marshal “history, sociology, political science, geography, [and] economics” to the end of “examining critically the impact of the war upon society”—including such topics as “unemployment, market, public opinion”; and targeting such outcomes as “intelligent citizenship [and] industrial safety.” It is a scheme that appears to be quite distant from the professional concerns of the artist or designer. Envisioned instead is a knowledge and information clearinghouse, organized for the cultivation of a subject constituted politically and economically in relation to the state. As notes further down on the same page suggest, Kepes conceived his “university of vision” by analogy to wartime public service initiatives, such as Disney films “designed to instruct soldiers… in the proper handling of their weapons, and to teach civilians how to combat disease [sic], improve sanitation and to perform other functions contributing to war efforts.”

As the School of Design explored ways to participate in the “war effort,” Kepes reflected that the designer was being called upon to “reorient” into “new fields of activity.” “Most of these new activities,” he observed,

are based on the raw materials of knowledge acquired in various peace-time professions. … Many experts were selected by the armed forces for these duties, while many are voluntarily selecting and preparing themselves for war-time jobs in which their skills and talents may be most useful.

In another set of notes that appear to be related to his proposal for a University of Vision Kepes again explored this reorientation of design expertise into new channels. Here, the “new fields of

---

40 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, AAA, Reel 5312, Frame 902.
41 Ibid.
activity” opened up for knowledge workers by the war effort were linked to a wholesale re-
conception of the battlefield. “Not war of techniques,” Kepes ventured, “but war of human
resources. War of morale. The mobilization of morale is the first step in the full mobilization.” 43
Inasmuch as it witnessed an unprecedented acceleration of technological warfare, the Second
World War was precisely a war of techniques. That would also have been the likelier insight
from the point of view of design practice. On the home front, the constraints of wartime material
shortages and the imperatives of rapid large-scale construction led many designers to experiment
in the use of new materials and production techniques. The School of Design eagerly participated
in this rush to innovate, inventing mattresses made of paper and new methods for repairing holes
in gunner’s hoods on bombers, redesigning barbed wire and chairs. 44 In that context, Kepes’s
redefinition of mobilization imperatives in terms of morale rather than technological innovation
was significant, and consequential for his practice beyond the war emergency. “Morale is
condition for victory,” he wrote in a related note, “in war and peace.” 45 I would argue that the
wartime context and the reflections it prompted was notably important for Kepes’s developing
conception of design as a medium in the formation of what he called here the “social man”—but
would perhaps be more accurately called, in the context of the discourses he engaged, the
individual as citizen.

To pursue for a moment longer the logic of Kepes’s operative redefinition of
mobilization, keeping in mind that its ultimate goal was the redefinition of the designer’s role in
wartime, its first step was to shift the battlefield from the exteriority of objects (weapons) to the

43 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, AAA, Reel 5312, frame 582.
44 For descriptions of wartime inventions at the School of Design, see Yoder, “Are You Contemporary?”; Betty
45 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, AAA, Reel 5312, frame 609.
psycho-physical interiority of the individual. “Morale,” Kepes wrote, “is a mental state or condition as evidenced in the readiness to endure in spite of the most testing circumstances.” “The endurance of [the] individual,” he proceeded to elaborate,

gets reinforcement from a faith in something outside his personal existence. Morale is a social phenomenon characteristic of social man—[it] is based on recognition that the survival of himself is indivisible from the survival of the group, nation or other forms of social ties.46 Finally, it was vis-à-vis this complex subject that the task of design would be specified: “show this identification of the individual with a more embracing dimension.”47 In the second note on the subject of “morale” preserved in the archives, Kepes began to explore the possible roles of design expertise more concretely: “The cultivation and maintenance of morale by propaganda. Propaganda uses language—verbal + visual… Pictures are the most easily understood language in the [primitive] level. … Poster is the main vehicle of picture expression.”48 What is the role of images in inspiring good morale, Kepes posits here, in the psycho-physiological reshaping, in other words, of the individual as “social man”? That was the implied goal of the University of Vision. “Propaganda” would only be a limited and transitional solution.

Kepes would have encountered the term “morale” at least by 1942, when he and Moholy served on a Chicago metropolitan committee for civilian morale among Americans of Hungarian descent.49 However, the term had a much wider relevance. It was borrowed from the disciplinary discourse of psychology—a field of “expertise” contributing in unprecedented numbers and

46 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, AAA, Reel 5312, frame 582.
47 Ibid.
48 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, AAA, Reel 5312, frame 609.
49 See Office of Civilian Defense, Chicago Metropolitan Area to Gyorgy Kepes, 13 March 1942, Kepes Papers, Reel 5303, frame 155.
ways to the war effort. The reflections on the proper meaning of mobilization found in Kepes’s notes, in fact, reproduced a pervasive argument grounding the relevance of psychological knowledge in the prosecution of the war. “Moods, attitudes, and feelings,” as one historian summarized that argument,

were not simply appropriate objects of military policy; they were the most appropriate…. The naïve idea that wars could be won simply by perfecting weapons technology to kill one’s opponents, it was noted frequently, was incorrect. By far the most effective road to victory was to destroy enemy morale while bolstering one’s own.

Within the range of both governmental agencies and privately-funded projects engaged in examining the problem of morale, some dealt specifically with public communications and propaganda analysis—including, for example, the Rockefeller Foundation Communications Group, which sponsored a number of university-based centers dedicated to the analysis of radio broadcasts, newspapers, and public opinion formation. Prominent among the latter was the Columbia University Office of Radio Research, where the Gestalt psychologist Rudolf Arnheim worked for seven months in 1941, examining, as he reported, “the psychological, sociological and economic conditions under which art, entertainment, popular instruction, propaganda, etc. are produced and consumed in contemporary American society.”

50 As Ellen Herman asserts in her study of the discipline in the first postwar decades, the growth, prestige, and popular presence of psychology was catalyzed by the wartime activities of psychologists in Washington. By the close of the Second World War, nearly 3,000 psychiatrists and around 1,700 psychologists worked in war-related government agencies; between 1920 and 1946, membership in the American Psychiatric Association grew more than fourfold, and membership in the American Psychological Association more than elevenfold. See Ellen Herman, The Romance of American Psychology: Political Culture in the Age of Experts (Berkeley: University of California Press, 1995), 17-20.

51 Ibid., 29.

52 Rudolf Arnheim to John Marshall, 1 October 1941, Arnheim Papers, AAA, Box 1, Folder: Correspondence, 1941, p.2. Arnheim’s official subject of study was dramatized radio serials. See also Roy Behrens, “Rudolf Arnheim: The Little Owl on the Shoulder of Athene,” Leonardo 31 (1998): 231-3. The Office of Radio Research was led by former Frankfurt School sociologist Paul Lazarsfeld. Among other prominent initiatives of the Communications Group were the Wartime Communications Research Project and the Experimental Division for the Study of Wartime Communications at the Library of Congress, the Public Opinion Research Project at Princeton University, and a project analyzing newspaper communications at the University of Chicago. See Herman, The Romance of American Psychology, 32; see also Christopher Simpson, The Science of Coercion: Communication Research and Psychological Warfare 1945-1960 (Oxford University Press, 1994), 22.
acquaintance with Arnheim, which would eventually grow into a friendship; in 1941, the latter would certainly have been a key reference for Kepes’s developing conception of the image.53 Around this time, both were thinking about relationships between art and the media of mass communications—the de facto subject of Language of Vision, for which Gestalt psychology would be credited as the conceptual groundwork.54 However, the central problem of morale research—the relationship between the individual and the group, and its mediation in the public sphere—preoccupied many key figures in Kepes’s orbit during the early 1940s.

Judging by the frequency of Moholy’s references in Vision in Motion (1947), which chronicles the work of the New Bauhaus, the school was suffused with the language of psychology and psychoanalysis. During the war, the school held sessions in “rehabilitation” and “occupational therapy,” initiatives that accorded with the conception of public service Kepes accessed in his notes. Sponsored by the Illinois Welfare Department, these were addressed, Moholy explained, to “the psychological aftermath of [the] war and the social and physical


54 In his acknowledgements, Kepes credited the Gestalt psychologists Max Wertheimer, Kurt Koffka, and Wolfgang Köhler for providing him with “many of the inspiring ideas and concrete illustrations… to explain the laws of visual organization.” Kepes, Language of Vision, 4. Arnheim studied with those three founders of Gestalt psychology, as well as Kurt Lewin, at the University of Berlin Psychological Institute. During his years in Berlin, he focused his studies on film and radio. His work at the Columbia University Office of Radio Research, he wrote, “provided the link between [his] former activities in the field of film and radio and the more abstract research in the field of the psychology of art” he intended to pursue afterwards. Arnheim to John Marshall, 1 October 1941, Arnheim Papers, AAA, Box 1, Folder: Correspondence, 1941, p.2.
effects of its machines and weapons.”

Intended not only for wounded or shell-shocked war veterans, but also for victims of industrial accidents amplified by wartime hyper-productivity, the sessions adapted Bauhaus educational strategies of creative exploration to the rehabilitation of “patients,” rather than the training of designers. Moholy described the process as the release of “buried [creative] energies… for contemporary orientation, … to overcome… old habits, ideas, and judgments not any longer applicable to our age”; and the final goal, as “the reincorporation of the handicapped as a creative and responsible member into society.”

But he also drew on the authority of an Illinois Mental Hygiene Service Deputy Director, who likened the sessions to psychoanalysis, which likewise “reaches down into the unconscious.” The participants, wrote the Mental Hygiene administrator,

found in their ability to navigate in this new field the kind of enriched and strengthened character that is analogous to what happens in psychoanalytic therapy, wherein a patient replaces the rigid, unconsciously motivated inhibitions of the past with a conscious direction of his life, making social use of all his potentialities.

For Moholy, however, the endpoint of this “practical rehabilitation” was ultimately located within the industrial “production process” The “patient” may not have been a designer, but he was, nevertheless, still a maker of objects; and the social milieu into which he would have to be “reincorporated,” following the optimization of his “productive level,” was still that of “the

---


56 As School of Design student Jack Waldheim explained: “We stress letting the patient discover his own creative abilities. We don’t aim to make a designer of him, but to make him conscious of form and space and touch. Perhaps he can operate [a] small jigsaw at his bedside, or do sculpture or painting.” Cited in Prosser, “Design for Wartime Living.”


58 Conrad Sommer, M.D., Deputy Director, Mental Hygiene Service, State of Illinois, cited in Moholy-Nagy, Vision in Motion, 72.

industrial world.” 60 The idea was brought home in the sequence of images Moholy chose to illustrate an article on rehabilitation he wrote in 1943: a photograph of a “hand sculpture” class for the blind at the School of Design was followed by an example of a pebble-shaped “hand sculpture,” which in turn morphed on the next page into images of a similarly ergonomic design for a telephone handset and its mass production prototype. 61 (Figure 38) Part of that sequence was also reproduced on the pages of Vision in Motion, where “occupational therapy” sessions were linked to the New Bauhaus basic course as “aptitude tests” for “vocational guidance.” (Figure 39) The declared rationale of both was to “free the student… from possible regressions and hindrances,” and the goal of both was enhanced productivity. 62

However, there was another therapeutic paradigm in circulation at the New Bauhaus, whose utility was not ultimately realized on the assembly line. Moholy’s choice of words in a passage of his 1943 article gestured toward that model. “Creative work and conscious personality development,” he wrote, “can overcome maladjustments or feelings of inferiority in the competitive and heterosexual relationships…” 63 Such more diffuse and less vocational “maladjustments” were the primary concern of the general semantics movement, which was conceived, precisely, as a “therapy of attitudes.” 64 General semantics was part of the “scientific and humanistic studies” sequence at the New Bauhaus. One of its most prominent

---

60 Ibid., 23.

61 A “hand sculpture” was a sculpture meant to be held rather than seen.

62 Moholy-Nagy, Vision in Motion, 72.


representatives, S. I. (Samuel Ichiye) Hayakawa, lectured at the school. He apparently made a rather significant impression on Kepes, who would later ask him to both review the manuscript for *Language of Vision* and write an introduction to the book. It is general semantics that provides the point of intersection among psychological discourses, the problem of propaganda, and the concept of language.

Founded by Alfred Korzybski, an eccentric Polish-American thinker, general semantics was a quasi-science dedicated to cognitive and behavioral modification. Influenced in part by analytic philosophy and pragmatism, Korzybski advanced the idea that linguistic abstractions create a pernicious “Aristotelian” mindset at the source of a multitude of social psychological problems. Systematic recognition of the context-dependent nature of meaning, he proposed, could counter such ills. The Institute of General Semantics, established in 1938, claimed to provide training in the elimination of “semantogenic difficulties,” to be followed by “unpredictable psychosomatic results of a beneficial character,” such as the clearing of “different blockages, ‘inhibitions,’ excessive drinking,” and the improvement of intelligence and “creative capacities.” A central concern of Korzybski and his followers, however, was that the misrecognition of the abstract nature of linguistic constructs left the public vulnerable to propaganda. The “humanly harmful” abuses of communication, Korzybski wrote in 1933, “breed such ‘führers’ as different Hitlers, Mussolinis, Stalins, etc., whether in political, financial,

---

65 See Moholy-Nagy, *Vision in Motion*, 70.


industrial, scientific, medical, educational, or even publishing, etc., fields.”

Best-sellers such as Stuart Chase’s *The Tyranny of Words* (1938) and Hayakawa’s *Language in Action* (1944) popularized general semantics in great measure by addressing wide-spread concerns about the political effects of propaganda, which escalated during the war.

The problem of mass communications—the public circulation of information and its effects on the body politic—was familiar also to the philosopher Charles Morris, Hayakawa’s University of Chicago colleague and an important presence at the New Bauhaus. Morris’s more technical and academic work in semiotics drew on the same sources in logical positivism and pragmatist philosophy as had the general semanticists’. The impact of Morris on Kepes was, evidently, significant. The interdisciplinary synthesis of knowledge sketched out by Kepes as the backbone of his University of Vision echoed the course in “intellectual integration” Morris taught at the New Bauhaus, which introduced students to scientific and humanistic subjects in order to “reintegra[te] the artist into the common life.”

Morris would be credited as the second reader and adviser for *The Language of Vision*, and it is his writings of the period that outline the idea of art as a “language of value,” a fundamental conceptual building block of Kepes’s first book.

Morris’s presence at the New Bauhaus was a product of his affiliation with the Vienna Circle of logical positivists, for which he acted as the “American clearinghouse” during the

---


The Dessau Bauhaus had found points of ideological affinity and established contacts with the Vienna Circle—contacts that were renewed in Chicago, where both Morris and Vienna Circle founding member Rudolf Carnap now taught. At the New Bauhaus, “intellectual integration” proceeded under the philosophical auspices of the Vienna Circle, reconvened in America as the Unity of Science movement. Morris understood the New Bauhaus as part of that larger project to found a synthesis of all knowledge in a universally valid, objective and empirical “language,” free of metaphysical or aesthetic abstractions. “[W]e need desperately,” he wrote in the New Bauhaus prospectus,

>a simplified and purified language in which to talk about art… in the same simple and direct way in which we talk about the world in scientific terms. For the purposes of intellectual understanding art must be talked about in the language of scientific philosophy and not in the language of art.73

It was the realization of this very ambition that Gropius would approvingly identify in Kepes’s *Language of Vision*—the solution to the “problem of formulating in definite terms a language of design, making objective fact statements instead of talking in terms like ‘wonderful’ and ‘beautiful.’”74 Kepes scholars have focused on the themes of structure, order, and integration that pervade the linguistic analogy as it was employed by both Kepes and Morris.75 The model of language engaged by Kepes through his association with Morris and Hayakawa, however, also outlined a particular instrumentality that established a circuit of relations among design, knowledge production, and political formations. It is that instrumentality that I pursue here.

---


74 Walter Gropius to Alexander Dorner, 20 March 1945, HUA, UAV 322.138, Box 2.

The logical positivist enterprise of the 1920s and early 1930s was motivated by opposition to “blood and soil” ideologies of the right, which the Vienna Circle viewed as pernicious metaphysical mystifications, to be dispelled through the promotion of scientific philosophy.\textsuperscript{76} Thus their search for a purified language of logic was already marked by an awareness of the political power of language, its role in the construction of a menacing—because irrational—social body: the masses. The role of ideology or propaganda in the formation of the masses as a threatening political agent, defined by its irrationality and volatility, was a central preoccupation of political discourse in the first decades of the twentieth century. Its key referent was in the antidemocratic sociology of Gustave Le Bon, whose writings were well known in Vienna. In progressive era America, Le Bon’s warnings about the irrationality of mass behavior were cleansed of their illiberal elitism and elaborated into a discourse on the formation of public opinion and its effects on democratic politics. Books like Walter Lippmann’s \textit{Public Opinion} (1922) pointed to the effectiveness of World War I propaganda as a lesson in the gullibility and emotionalism of the masses and advocated shielding public policy decisions from public opinion so as to maintain the grounding of democracy in rational deliberation. Theories of the public and its manipulation were in turn operative in the foundation of American social psychology and, in the guise of “crowd psychology,” returned during the Second World War to support the discourse of morale invoked by Kepes.\textsuperscript{77}

But the problem of how a social and political unit, “the public,” is constituted through language, or discourse, was also fundamental to American pragmatism. In his celebrated response to Lippmann, \textit{The Public and Its Problems} (1928), John Dewey formulated a notion of

\textsuperscript{76} See Galison, “Aufbau/Bauhaus,” 710.

\textsuperscript{77} For the brief history of American discourse on the masses as outlined above, see Herman, \textit{The Romance of American Psychology}, 23.
what has been called “the social self,” constituted in both its material interests and mental orientations through participation in democratic debate. If the “public” could emerge in a convergence of irrational drives, it could also be brought into being through rational deliberation. The democratic commonwealth was a collective political subject constituted in the “social education” of citizens through argument. Likewise, Morris argued in a 1934 essay "Pragmatism and the Crisis of Democracy" that the effects of totalitarian ideology on the masses should be combated through “the marriage of the scientific habit of mind with the moral ideal of democracy.” In fact, the notion that a democratic polity was constituted through the rationalization of public discourse was a hallmark of the period’s political philosophy, and it was linked to more fundamental assumptions about the intersubjective structure of political formations. Because the polity was thought of as a collection of individuals, the psychological, ideological, and intellectual qualities of the individual could be seen to determine the soundness of the political institution. The focus on language and its educational or therapeutic instrumentality derived from this set of assumptions. Like the social psychology of the period, they “melded the understanding of individual and collective behavior [and joined] the comprehension and change of self to the comprehension and change of society.”

The notion of collective subjecthood constructed through language, and the educational tasks it opened up for democracy, also deeply informed the American re-conception of the Vienna Circle. The Unity of Science movement embraced Dewey as one of its prominent

---


81 Herman, *Romance of American Psychology*, 12.
spokesmen, and pragmatism in general as the new counterpoint to logical positivism in its epistemology. Morris in particular explicitly devoted his work to the articulation of links between the two philosophies. The physicist and philosopher Philipp Frank, as Chair of the Institute for the Unity of Science, also remarked on the affinity between, for example, Carnap’s ideas and the pragmatist postulate that “the meaning of any statement is given by… what it means as a direction for human behavior.” In 1950, Frank would highlight this “pragmatic” emphasis on social scientific instrumentality as the defining element of the Unity of Science’s pursuit of the “integration of knowledge.” “[I]t has turned out more and more,” he wrote,

that [all] problems cannot be settled definitely on the basis of logical and semantical analysis. … [Some] problems put the question whether a certain formal system, as a whole, with the addition of a semantical interpretation, is useful for the orientation of man in the world of experience. Here we turn from the logical and semantical to the pragmatical viewpoint. … [The latter] consider[s] science as a human enterprise by which man tries to adapt himself to the external world. Then a “pragmatic” criterion means… the introduction of psychological and sociological considerations into every science…. [T]he sociology of science… has to be connected in a very tight way with every consideration which one may call logical or semantical.

It was the kind of instrumentality that Language of Vision also tried to access in a project oriented to the construction of social subjectivity, models for which Kepes sought among the available discourses of perceptual psychology, social psychology, and semantics.

Lippmann had described public opinion as “the pictures in our heads.” Among the Vienna Circle, Otto Neurath was dedicated to outlining the role of images in mass

---


83 Philipp Frank, introduction to the first national conference of the Institute for the Unity of Science, held at the American Academy of Arts and Sciences, April 1950, cited in Holton, “From the Vienna Circle,” 66-67.

84 Cited in Herman, The Romance of American Psychology, 23.
communication.\textsuperscript{85} The *Encyclopedia of Unified Science*, a never- completed Unity of Science initiative, was projected to include a supplemental “Visual Thesaurus.”\textsuperscript{86} In a sense, the systematic articulation of vision as a language was both anticipated by and lacking in the discursive context Kepes entered. His introduction to *Language of Vision* rehearsed the focus of that discourse on the public circulation of language: “The visual language,” he wrote, “is capable of disseminating knowledge more effectively than almost any other vehicle of communication. … Visual communication is universal and international…”\textsuperscript{87} The link between the communicative properties of images and the social instrumentality of art was then supplied by the concept of “value.” Values, Kepes wrote, expressed the “potential ‘order’ in man’s relationship to nature and to his fellow man,” and were therefore “recognized directives toward a more satisfactory human life.”\textsuperscript{88} As a carrier of value, the artistic image represented “a symbolic order of [man’s] psychological and intellectual experiences” that “directed and inspired him toward materializing the potential order inherent in each stage of history.”\textsuperscript{89}

Kepes cited as his source Whitehead’s observation that art was the “enjoy[ment] of vivid values”;\textsuperscript{90} but his discussion of art’s potential instrumentality was much closer to Morris’s ideas. As previously mentioned, Morris based his New Bauhaus program on the premise that art was a


\textsuperscript{86} Neurath was the originator of the idea and its principal champion until his death in 1945. See Holton, “From the Vienna Circle,” 62.


\textsuperscript{88} Ibid., 201.

\textsuperscript{89} Ibid., 14.

\textsuperscript{90} Ibid., 201.
“language of value.” That concept was elaborated in his 1939 article on the subject of relationships among art, science, and technology.91 The three disciplines were treated here as different types of discourse, understood according to the pragmatist tradition in terms of their social “functions”—or as “sign-sustained and sign-sustaining activities.” The “aesthetic sign” was defined as that which “designates the value properties of actual or possible situations.” As such, aesthetics was a discourse that “presents values for direct experience,” or a “language of value.” 92 It was thus distinguished from both the language of science (statements of fact or prediction) and the language of technology (statements of command), even as all three were seen to be “mutually supporting.”93 Kepes’s notion of value, however, collapsed the distinction Morris maintained between the languages of art and of technology. The purpose of the former for Morris was to “present a value,” that of the latter—“to induce a mode of action.” Unlike the language of art, therefore, technological discourse had “an irreducible… imperative component.” 94 For Kepes, on the other hand, the artistic image shared that imperative dimension—the image itself was a “directive.”95 In transcribing vision as a language, therefore, Kepes invested art with the direct instrumentality typically reserved by the discourses around him for other linguistic forms. If “the creative imagination” could be thought of as a visual technology, Kepes reasoned, it could then be mobilized “for positive social action.”96

91 Charles W. Morris, “Science, Art and Technology,” The Kenyon Review 1 (Fall 1939): 409-423. This essay is also noted in Finch, “Languages of Vision,” 159-160.

92 Ibid., 410, 415, 416.

93 Ibid., 420. Based on that premise, Morris’s hope that artists “may gain release for [their] activity in an age of science” (p. 423) coincided with Kepes’s position that art should access the “new dimension” opened up by “advances in science and technology.” Kepes, Language of Vision, 12.


95 Kepes, Language of Vision, 201.

96 Ibid., 14.
Language of Vision closed with a full-page reproduction of a 1940 poster distributed by the Office of Emergency Management (OEM), a division of the Executive branch set up to coordinate national defense measures. (Figure 40) In a dynamic composition inspired by constructivist agit-prop it announced that “production” was “America’s answer,” presumably to the question of war mobilization. It was an apt metaphor for the kind of creative productivity that Kepes’s book sought both to describe and to incite. Reminiscent in both form and function of the posters produced by Kepes’s Hungarian avant-garde forefathers for the revolutionary regime, the OEM poster was a contemporary example of their notion of art as a political intervention in the public sphere. It was also an example of design as a language of public communication, the ultimate referent of the discourses on language Kepes encountered in early 1940s America.

Accordingly, Kepes posited “visual publicity”—the “innumerable” forms of which included “posters on the streets, picture magazines, picture books, container labels, [and] window displays”—at the apex of the language of vision he sought to define. The other name he gave to that public visual language was “advertising art.” As advertisement, however, it had only the most tenuous connection to the process of consumption, and none at all to the consumer object. Kepes’s discussion of advertisement made a nod, in passing, to the “eye [of the] customer,” so important to Moholy. Language of Vision, however, was distinguished from both The New Vision and Vision in Motion by the total absence of industrial design objects among its illustrations. Even the “advertising designs” reproduced by Kepes rarely included images of the products they were presumably intended to sell. The social sphere within which Kepes situated

---

97 Ibid., 221.

his intervention was not commercial—the sphere of production and exchange—but properly speaking political—the sphere of communication and the constitution of the collective subject. The “purpose” of “visual publicity” images would be twofold: to “disseminate socially useful messages”; and to “train the eye, and thus the mind, with the necessary discipline of seeing beyond the surface of visible things, to recognize and enjoy values necessary for an integrated life.”

Thus, *Language of Vision* was less a primer on the production of commercially effective visual communication than it was a reflection on the social contingencies and effects of public visual reception. It captured the concerns of a nation-state at war and refracted them through the medium of aesthetic discourse. With the end of hostilities, the problem of morale, centered as it was on communications, was displaced by new national goals in the disciplining of the citizen—centered, this time, on knowledge production.

### 4.2 CREATIVE INTELLIGENCE

Much of the technical content in *Language of Vision* was worked out in an evening course program of Visual Fundamentals, which Kepes ran during his tenure in Chicago. If art’s language of value implied a certain plenitude of form and meaning, in which the moral constitution of society found its perceptual equivalent, Visual Fundamentals entailed, on the contrary, an analytic decomposition of the image to reveal its basic substructure. For example, a 1940 outline for a class on the relationship between color and brightness instructed the student to translate a color reproduction of a “great master” painting as a grouping of black-and-white

---

units. The book was, likewise, divided into sections on various optical constituents of the image, and its illustrations frequently juxtaposed student work focused on the articulation of such elements with the works of established artists. (Figure 41)

Kepes’s strategy invites immediate comparison with the Bauhaus preliminary course, the basic principle of which, as Moholy put it, was “to break down complex tasks into fundamental components so that they can be digested one after the other.” Preliminary course exercises in Chicago also occasionally referred the student to the “intuitive research” of artists, whose works could inspire those basic explorations “in a simplified version”—as the collages of Kurt Schwitters, for example, inspired student “texture exercises.” Moholy, however, insisted on the essential discontinuity between the fundamentals of creative exploration and the work of art, which enjoyed a privileged status. “[O]nce the elementary course,” he wrote, “has brought [the student’s] emotional and intellectual power into activity, he will be able to do creative work. This does not mean necessarily that it will be ‘art.’ Art is the expression on the highest level of a cultural epoch…” Likewise, Moholy segregated his discussions of art and of design in Vision in Motion as separate areas of professional activity, and emphasized the New Bauhaus goal to educate “designers and craftsmen” as opposed to “free artist[s].”

---


101 Moholy-Nagy, Vision in Motion, 66.

102 Ibid., 65.


Kepes’s thought goes against the grain of such discriminations. “From the simplest form of [spatial] orientation to the most embracing plastic unity of a work of art,” he wrote in *Language of Vision*,

there is a common significant basis. … A typographical design, scribbling on paper, color spots on a canvas, a photograph, a simple haphazard manipulation of light or a painting with an explosive emotional message—all these are spatial expressions by virtue of the process through which the eye organizes their visible differences into a whole."105

At the same time, even as Kepes observed that his findings would be important in the “training for visual expression,” his main goal was neither the definition of works of art and design nor the education of their producers, but the elaboration of what may be defined as the process of visual cognition.106 Thus, although his discussion was bracketed—in the introduction and the conclusion—by a concern with the aesthetic properties of the material environment, at the heart of his project was a shift of attention from the exteriority of visible forms to the interiority of the viewing subject; and specifically, the viewing subject as a *thinking* subject. Crucial to that shift, the notion of “organization” or “order” emerged as the driving force of the language of vision.

“The experiencing of every image,” wrote Kepes,

is the result of an interaction [sic] between external physical forces and internal forces of the individual as he assimilates, orders, and molds external forces to his own measure. … Sight is more than pure sensation, for light rays reaching the eye have no intrinsic order as such. They are only a haphazard, chaotic panorama of mobile, independent light-happenings. As soon as they reach the retina, the mind organizes and molds them into meaningful spatial units.107

A conception of vision as the interaction between “external” physical stimuli and “internal” cognitive schemas was a basic tenet of Gestalt perceptual psychology. Kepes cited its founders Max Wertheimer, Kurt Koffka, and Wolfgang Kohler as the sources of his insight into the “laws

---

106 Ibid., 23.
107 Ibid., 16, 31.
of visual organization.” Gestalt theory allows us to understand both Kepes’s focus on mental processes—the relationship between vision and the constitution of meaning—and the peculiar form of direct social instrumentality he assigned to images by eliding the natural and the social forms of stimulus.

The dominant paradigm of early twentieth-century German experimental psychology, Gestalt theory was familiar at the Bauhaus, where it was engaged by Paul Klee, Wassily Kandinsky, and Josef Albers, among others. The idea that perception is based on unified irreducible wholes or Gestalten, and equally the striking diagrammatic illustrations found in Gestalt psychology treatises, influenced Bauhaus artists’ search for an abstract aesthetics of elementary forms. Language of Vision also embraced notions similar to those proposed by Kandinsky’s aesthetic theory—for example, that “visual balances” or “tensions” among basic aesthetic units such as the point or the line are linked to psychological or mental energies. The concept of formal Gestalten certainly remained a central element of Gestalt perceptual psychology in America, where the triumvirate of its founders emigrated in the 1930s, accompanied by a number of prominent students, such as Arnheim and social psychologist Kurt Lewin. In the new context, however, Gestalt psychologists found themselves having to defend a more fundamental premise of their approach: their “introspectionist” methodology that dealt with cognitive experience, or “mental life,” discredited as objectively unknowable and therefore scientifically irrelevant by the positivist and empiricist doctrines of behaviorism, the dominant


110 Wassily Kandinsky, Point and Line to Plane (1926), cited in ibid., 135. See also “Wassily Kandinsky (1866-1944)” in Rainer K. Wick, Teaching at the Bauhaus (Ostfildern-Ruit: Hatje Cantz Verlag, 2000), 188-224.
school of American psychology. Since the accessibility of mental processes was now the main point of contention, Gestalt psychology in America became known primarily as the theory of “complex mental organization.”

The American writings of Arnheim, to whom Kepes was closest personally, emphasized specifically the connection between cognitive and perceptual processes, between images and thought, expressed in the Gestaltist concept of “organization” or “order.” “Gestalt theory,” wrote Arnheim in 1943,

> uses as its method… the description of the structural features… of those natural things or happenings in which the character and function of any part is determined by the total situation. The method, however, must be understood as deriving from a more basic attitude which… emphasizes the formative powers and, if I may say so, the ‘intelligence’ of the peripheral sensory processes, vision, hearing, touch, etc., which had been reduced by traditional theory to the task of carrying the bricks of experience to the architect in the inner sanctuary of the mind.

This latter notion also constituted Arnheim’s basic insight into artistic production in general—the focus of his work in America. If perception was the organization of physical stimuli into meaningful units, then the work of art had to be seen as a cognitive, rather than a purely aesthetic, product; in fact, a clear difference between aesthetic perception and cognition could no longer be sustained. That was the theoretical foundation of his canonical 1954 book *Art and Visual Perception*. “[T]he same mechanisms,” wrote Arnheim, “operate on both the perceptual and the intellectual level…”

Recent psychological thinking, then, encourages us to call vision a creative activity of the human mind. Perceiving accomplishes at the sensory level what in the realm of reasoning is known as understanding. Every man’s eyesight anticipates in a modest way the justly admired capacity of the

---


112 Jean Matter Mandler and George Mandler, “The Diaspora of Experimental Psychology: The Gestaltists and Others” in *The Intellectual Migration: Europe and America, 1930-1960*, ed. Donald Fleming and Bernard Bailyn (Cambridge, MA: Harvard University Press, 1969): 417-418. “By thinking the unthinkable,” Mandler and Mandler write, “by saying things that outraged the behaviorists, the German immigrants maintained a point of view which said that despite the behaviorist rejection of complex mental organization and cognitive processes, perhaps there was something to such ideas after all.” Ibid., 417-418.

artist to produce patterns that validly interpret experience by means of organized form. Eyesight is insight.\textsuperscript{114}

Equating formal organization with intellectual comprehension as the “apprehension of significant structural patterns,” therefore, allowed Arnheim to activate vision as a creative process, rather than a static reflection of physical reality.\textsuperscript{115} The premise that to see an order \textit{in} the world was at once to give an order \textit{to} the world also grounded the particular agency Kepes assigned to the image. “To perceive a visual image,” he wrote in \textit{Language of Vision}, “implies the beholder’s participation in a process of organization. The experience of an image is thus a creative act of integration.”\textsuperscript{116} Unlike Arnheim, though, Kepes invested his conception of vision’s agency with an explicitly social dimension. If vision’s cognitive patterning was an essentially creative process, Kepes’s goal, as may be recalled, would be to “mobilize the creative imagination for positive social action.”\textsuperscript{117}

The connection between visual and intellectual processes was still rather implicit in \textit{Language of Vision}. In accordance with its linguistic model, the book focused more on the communication rather than the production of visual meaning. In Kepes’s subsequent work, however, the cognitive investment of the image would come to the foreground to shape the project he pursued from the 1950s forward: that of bridging the visual disciplines of art and design and the intellectual disciplines of the physical and social sciences. His next book, \textit{The New Landscape in Art and Science} (1956) stated in no uncertain terms as early as the second

\begin{footnotesize}
\begin{itemize}
    \item \textsuperscript{115} Ibid., 6.
    \item \textsuperscript{116} Kepes, \textit{Language of Vision}, 13.
    \item \textsuperscript{117} Ibid., 14.
\end{itemize}
\end{footnotesize}
paragraph of the Preface: “vision is itself a mode of thinking.”\textsuperscript{118} When he returned to Language of Vision in 1973 with the task to write a new introduction for a reprint edition of the book, Kepes also chose to emphasize what perhaps now appeared latent or submerged in the original argument: “The patterning of the welter of optical signals coming from outside to make perceptual images is a basic form of comprehending… Intellectual life emerges from the life of the senses…”\textsuperscript{119}

As the title of one indicates unambiguously, “Image and Thought” was also the focus of several essays Arnheim was invited to contribute to Kepes’s anthology series Vision and Value, published in the mid-1960s under the imprint of George Braziller.\textsuperscript{120} Twenty years after his initial forays into the perceptual psychology of art, Arnheim was working on a book on “visual thinking,” engaged with the question of how “to discover the best methods of training the mind for its profession.”\textsuperscript{121} But by then Arnheim was far from alone in dedicating his attention to the latter question. As demonstrated by the overall contributions to another Vision and Value volume, The Education of Vision (1965), the problem of aesthetic education was now identified with the problem of vision’s role in the training of cognition. “All the contributors to this volume,” wrote Kepes in the introduction “agree on two points. First, that there is a fundamental interdependence between perception and conception, between the visual and the rational… the sensory and the intellectual … And second, that… there is an urgent need today for a re-


\textsuperscript{121}Arnheim, “Image and Thought,” 63. The essay was a draft of a chapter later included in Rudolf Arnheim, Visual Thinking (Berkeley: University of California Press, 1969).
evaluation of the education of vision.”\footnote{Gyorgy Kepes, “Introduction,” \textit{Education of Vision} (New York: George Braziller, 1965), vii.} In fact, the training of the creative intellect in general emerged in the postwar period as a key item of the national agenda, framing and motivating discourses on perception and aesthetics, among others, and opening up a channel for the further development of Kepes’s project.

Starting in the 1940s, the federal government vastly expanded its activities in the area of education, implementing a series of studies, legislation, and funding initiatives that accelerated into the 1960s. Such measures indexed a tidal shift in the relationship between education and the state as schools moved from a matter of parochial concern and jurisdiction to the forefront of national attention, and universities emerged as important centers of knowledge production and training. The conception of the identity and goals of education as a national priority, however, changed dramatically in the span of this short period.

Its inaugural moments before the end of the war were framed by the social contract logic of Roosevelt’s Economic Bill of Rights, discussed in the previous chapter. The Servicemen’s Readjustment Act (the “G.I. Bill of Rights”) of 1944 presented education as a civil right, a matter of equal opportunity, of social security and economic mobility. In that way, it was a continuation and expansion of the 1943 Vocational Rehabilitation Act, which provided for the vocational training of disabled veterans to reenter the productive economy.\footnote{See Sol Cohen, “Introduction,” Sol Cohen, ed., \textit{Education in the United States: A Documentary History}, volume 4 (Los Angeles: University of California Press, 1974), xxviii.} The rehabilitation program at the School of Design discussed earlier in this chapter may well have benefitted from federal allocations under that act. More generally, the social contract language of the mid-1940s was invoked by Moholy’s Chicago reflections on education that promised “to add to the politico-social a \textit{biological ‘bill of rights’} asserting the interrelatedness of man’s fundamental qualities,
… of his psychological well-being and his physical health.”\(^ {124}\) Moholy’s focus on the functional psycho-physical “integration” of the “whole man” as the goal of education for “a social organization in which everyone is utilized to his highest capacity” resonated with American progressive positions on education still dominant in the mid-1940s that combined a faith in human engineering with visions of planned cooperative society.\(^ {125}\) Similarities have long been pointed out between the Bauhaus educational approach, with its stress on exploration and self-discovery and mistrust of received knowledge, and the progressive educational platform. The connection became explicit at the New Bauhaus. “The general [intellectual program of the New Bauhaus],” reflected Charles Morris in 1937, for example, “accords with the deepest American insights and needs—the dovetailing of Bauhaus plans with Dewey’s *Art as Experience*.”\(^ {126}\) John Dewey, the intellectual guiding light of progressivism, saw education as the ethical preparation for life in a democratic commonwealth, rather than as intellectual or occupational training. During the 1940s, the classic Deweyan premise of education in the “methods of living”\(^ {127}\) was translated into an educational philosophy of “life adjustment” that emphasized the development of personality, mental, emotional and physical health, and social skills. Outlined in reports published between 1938 and 1954 by education commissions set up within the NEA and the


\(^{125}\) Moholy-Nagy, *Vision in Motion*, 10-11. Moholy’s writings bear references to progressive educational models. See, e.g., ibid., 22-23.


Office of Education, “life adjustment” was the national model of secondary education, received as the practical embodiment of progressive doctrine.128

Kepes’s writings of the 1940s adopt the signposts of “integration”—both on the psycho-sensorial level of individual capacities and the inter-subjective level of social organization—and identify them with the political ideology of progressivism. “Integration,” he wrote in Language of Vision, “planning and form are the key words of all progressive efforts today. … Education on an unprecedented scale is imperative if man… is to be really contemporary.”129 He would retain this focus on integration even as its relationship to “planning” would fall away in the changing postwar ideological context. However, despite such similarities, Kepes did not embrace elements of both Bauhaus and progressive educational philosophy that placed those doctrines in opposition, specifically, to acquired knowledge. On the contrary, the desired integration would proceed, in Kepes’s subsequent work, precisely and exclusively by means of knowledge production and acquisition. After Language of Vision, Kepes turned his attention to making the education of vision exactly coterminous with an education of the mind.

At the turn of the 1950s, the tenets of progressivism started to come under attack as the social welfare goals that initially drove state involvement in education gave way to new imperatives. The coming transition can perhaps be traced already in the language of President Truman’s Commission on Higher Education report of 1947. The Commission paid heed to the social contract position that “the democratic creed assumes to be [the] birthright [of individuals] an equal chance with all others to make the most of their native abilities”; but immediately afterward introduced a new argument: “in this day… the complexity of life and of social


129 Kepes, Language of Vision, 12.
problems means that we need desperately every bit of trained intelligence we can assemble. … [T]alent [is] our most precious natural resource in a democracy.”130 The practical task of the Commission, to evaluate the current state of American higher education, arose with the influx of veterans into colleges and universities under G.I. Bill provisions. However, the attendant growth of the national higher education plant was only the more visible sign of a general shift in the status of knowledge that this dissertation has been tracing. The emergence of a political economy of knowledge production, signaled by the Commission’s declaration of intelligence as a national “resource,” necessitated measures for its cultivation, organization, and definition with respect to the state. Education was a key site for their elaboration. The training of intelligence increasingly replaced the promotion of the “whole man” as the goal of education across its full spectrum.

Secondary education oriented its responsibilities to the “deliberate cultivation of the ability to think” as preparation for higher education, where the same process would accelerate on an advanced level.131 Throughout the 1950s and most of the 1960s, this new credo was elaborated across a series of widely-read texts where it was linked explicitly to the concept of the American nation-state; and it was echoed in a succession of federal initiatives that advanced legislative control to every corner of American education and funneled massive funds into its promotion.132

---


132 One of the most influential commentators on the state of national education was Harvard president James B. Conant. Among the list of 1950s and 1960s publications promoting the improvement of intellectual training in education Cohen cites Albert Lynd, Quackery in the Public Schools (1951), Mortimer Smith, The Diminished Mind (1954), John Keats, Schools Without Scholars (1958), James D. Koerner, The Mis-Education of American Teachers (1963). Some of the federal initiatives related to education during the same period were the National Defense Education Act, the Higher Education Act, the Library Services Act, the Vocational and Technical Education Act, the Economic Opportunity Act, the Civil Rights Act, the International Education Act, and the Elementary and Secondary Education Act. See Cohen, Education in the United States, volume 4, p. xxx, xli-xlvi. See also Church and Sedlak, Education in the United States, 404-428; S. Alexander Rippa, Education in a Free Society: An American History (New York: David McKay Company, 1967), 290-298; Richard Hofstadter and C. DeWitt Hardy,
The fostering of the mind required the definition of its desired characteristics and the elaboration of methods for advancing them. Of particular concern was the scientific mind, especially after the Sputnik launch of 1957 escalated national defense concerns. One of the most influential among the many voices speculating on the nation’s education problems, therefore, was that of Admiral Hyman G. Rickover, a physicist who had directed the production of the first nuclear submarines. In a series of public speeches and congressional testimonies, Rickover sounded an alarm about the national shortage of technical personnel equipped to deal with the unforeseen challenges of defense research and development. From that matter of seemingly local concern, he extrapolated to a historic geo- and bio-political shift. The closing of the frontier, the exhaustion of raw natural resources, and exploding population growth necessitated a focus on new channels for growth and development and gave rise to a new model of the productive citizen. “[T]he kind of American,” wrote Rickover, “who thoroughly mastered his environment on the frontier in the muscle, wind, and water state of technology would be totally ineffective in the atomic age…. The consequence of technological progress is that man must use his mind more and his body less.” The focus of national policy should be investment in such new “human resources” as a substitute for the shrinking industrial materials base. The nation must use “far more effectively than heretofore our natural resources in brain power; we must substitute intellectual resources for diminishing materials resources.” Significantly, the

---

133 On Rickover, see also Church and Sedlak, Education in the United States, 407.


135 Ibid., 29.

defining characteristic of “brain power,” according to Rickover, was creativity. The “brainworker” was, above all, a “creative worker”: “venturesome,” improvising, “inner-directed,” “obstreperous,” a “troublesome maverick,” a “sworn enemy” of routine and the status quo, always ready to upset the applecart by thinking up new and better ways of doing things.”\textsuperscript{137} The intellectual worker, in other words, was the very opposite of the organization man. Rickover’s opposition to the “life-adjustment fallacy” of current pedagogy stemmed from his belief that education should promote “the ability to think independently,” rather than produce the “well-adjusted” conformist.\textsuperscript{138}

Even as Rickover and some other influential contemporary commentators on education derived their authority from a scientific background and its relevance to the defense establishment, they did not delimit their area of educational concern to the training for scientific innovation. “We need creative thinkers in the humanities,” Rickover wrote, “no less than in the sciences.”\textsuperscript{139} The important point is that, contrary to general assumptions about the Cold War period, the productive scientist or technocrat was not the exclusive, perhaps not even the primary, focus of national interest.\textsuperscript{140} The creative mind was to be sponsored in view of the widest possible applications and areas of activity—in fact, much of the political and economic


\textsuperscript{138} Ibid., 24, 23.

\textsuperscript{139} Ibid., 31.

\textsuperscript{140} Building the science and technology labor force was certainly a central imperative of national human resources policies and discourses. For their effects in the field of physics, see David Kaiser, “Cold War Requisitions, Scientific Manpower, and the Production of American Physicists After World War II,” \textit{Historical Studies in the Physical and Biological Sciences} 33 (2002): 131-159. Interestingly, the disciplinary contingencies created by that “at times hysterical” preoccupation with increasing the supply of trained physicists had the opposite consequences to those projected by the educational discourses traced in this chapter—reinforcing an emphasis on “efficient, repeatable—and thereby trainable—techniques” in physics PhD programs, as opposed to creative theoretical exploration. Ibid., 132, 153.
capital was invested in the mind’s potential, unforeseen by definition. For example in 1951, Columbia University School of Business, in collaboration with General Dwight D. Eisenhower, set up a Conservation of Human Resources Project to study “changing patterns of work in a dynamic economy,” as well as to identify “the factors contributing to the development of talent and superior performance,” and “the factors leading to the wastage of human resources growing out of failure to make effective use of the potential of highly talented individuals.”

While growing out of the experience of war mobilization and attendant requirements for technological expertise, the problem of “human resources” or “manpower” quickly shifted to a concern with the cultivation of “talent” and its “potential” on the widest national scale.

By the mid-to-late-1950s, discourses on intellectual creativity and the methods for its pedagogical production were widespread, and frequently intersected with Kepes’s professional trajectory. In the spring of 1958, he was invited to contribute to a Cooper Union lecture series “entirely devoted to the problems of creativity,” where he appeared in an interdisciplinary line-up with, among others, the sociologist C. Wright Mills, and the government scholar Herbert J.

---

141 Douglas W. Bray, “The Conservation of Human Resources Project,” *American Psychologist* 6 (December 1951), 688. Eisenhower, who was President of Columbia University from 1948 to 1953, was at the time on leave, serving as Supreme Commander of NATO between 1950 and 1952.

142 The Conservation of Human Resources Project was sponsored by “several government agencies especially within the Department of Defense,” as well as a group of industrial firms and foundations. Its other task was to examine the military and civilian experience of the war with respect to vocational “inadequacy and maladjustment.” Ibid., 688. It was also linked to Columbia’s Ford Foundation-financed National Manpower Council, tasked with “identifying and analyzing the major short-run and long-run manpower problems which face the United States” and advising on policy with regard to such issues as the “utilization of the older worker, worker education and training, the development and use of "woman-power," and military manpower policy.” Henry David, “Columbia University’s National Manpower Council,” *Industrial and Labor Relations Review* 5 (April 1952): 479.

143 Historian Jamie Cohen-Cole has traced the discourse on creative intelligence in the postwar American academy at large, and particularly in the social sciences. He argues that the concept of the creative mind both articulated a normative political vision of democratic citizenship in the Cold War context and translated into ideological terms the actual conditions of practice in the postwar academy. The model of the “thinking self,” in which creativity played a central role, was thus at once a political and an academic ideal. Jamie Cohen-Cole, *Thinking About Thinking in Cold War America* (Ph.D. dissertation, Princeton University, 2003). 4. See also Jamie Cohen-Cole, “The Creative American: Cold War Salons, Social Science, and the Cure for Modern Society,” *Isis* (June 2009): 219-262.
Muller—as well as Lewis Mumford and James Johnson Sweeney. Around 1956, he was among a number of prominent figures interviewed for a radio program “exploring the nature of creativeness in American arts, sciences, and professions,” which was transcribed and published in 1960 as *The Creative Mind and Method*. Lyman Bryson, Professor of Education at Columbia University’s Teachers College, who acted as host and commentator, posed such questions as: “how does the level of artistic and scientific creativeness in America compare with that of other cultures and other times?” and “can the creative mind be trained and the creative method developed?” The closing program ended with a panel discussion, featuring Arnheim and Margaret Mead, during which the question of creativity was posed even more explicitly in terms of what Mead referred to as America’s “educational crisis.” Bryson opened by inviting the panelists to think about the social conditions favorable to “a high productivity of creativeness”: “we’re going to look at the problem of how in a society like ours… we can discover the conditions that make creative work more likely, make it a little better harvesting of whatever genius we can produce in our population.” Again, the question of creativity revolved around the imperative of training the “creative worker.”

---

144 See Johnson E. Fairchild to Gyorgy Kepes, 7 May 1958, Kepes Papers, AAA, Reel 5303, frame 421; *Some Thoughts on Creativity*, Cooper Union for the Advancement of Science and Art, The Division of Adult Education, listing of lectures for 1958/59, brochure, Kepes Papers, AAA, Reel 5313, frame 15.


146 Ibid., ix-x.

147 “In the United States,” Mead maintained, “we are in an ‘educational crisis,’ or we call it that so we can think about it. We’re very much interested in the state of the arts in this country and the state of the sciences. We’re worried as to whether the most creative, original ideas in science come from Europe and whether we’re not merely assembly-line producers.” Margaret Mead in “The Conditions for Creativity,” *The Creative Mind*, 107. The third member of the panel was Milton Nahm.


For his own part, Kepes spoke about “creative thinking in the field of design,” defining it as the “solution of problems”—a process not unlike the instrumental innovation of Rickover’s “thinking up new and better ways of doing things.”\(^{150}\) His main interest, Kepes reported, was “to redress human needs, and to try to apply whatever I know to give the optimum solution for it.”\(^{151}\) Bryson observed that those were “not quite the terms that most creative artists use in talking about their work.”\(^{152}\) However, in the discourse on creativity traced here, visual art was defined exactly not by its distance from utilitarian applications, but rather by the utility it could bear as an intellectual process in the training of the knowledge worker. While it was assumed that art had a privileged position with respect to creativity, the career artist was not the primary concern of those who worried about creativity and its training. The definition of art as creative thought was, rather, groundwork for its introduction into the system of general education.\(^{153}\)

In 1949, the Committee on Art Education of the Museum of Modern Art in New York (MoMA) held its seventh annual conference, dedicated to the question of creativity. The immediate motivation for the discussion was the 1948 resolution of the United Nations Educational, Scientific and Cultural Organization (UNESCO) to facilitate efforts by member states to integrate the arts into general education.\(^{154}\) MoMA Director René D’Harnoncourt had

---


\(^{153}\) There are two important scholarly texts that deal with postwar discourses linking aesthetic and intellectual processes, however both address exclusively their impact on the professional education of artists. See Howard Singerman, *Art Subjects: Making Artists in the American University* (Berkeley: University of California Press, 1999); David Deitcher, “Teaching the Late Modern Artist: From Mnemonics to the Technology of Gestalt” (Ph.D. diss., City University of New York, 1989).

been involved in UNESCO discussions on this issue and proposed that the Committee send an enthusiastic endorsement of the organization’s actions. “[T]he release of man’s creative faculties,” stated the Committee’s resolution

through practice and appreciation of the arts is considered an important factor in the formation of mature and well balanced individuals capable of becoming useful members of a society dedicated to the constructive pursuits of peace.

… [The] practice and appreciation of the arts contributes substantially to the individual’s sympathetic understanding of the concepts and aspirations of his fellow men.155

Arnheim and artist Robert J. Wolff, Kepes’s New Bauhaus colleague, were among the conference participants, and both embraced and extended in their contributions the notion that art could have a formative role in general education—even though their panel was actually dedicated to the problem of training the professional artist.156 According to the conference report, Wolff “emphasized the necessity for a general achievement of visual selectivity and concluded by saying that he was more interested in the college freshman than in Picasso.”157 The occasion was more than apt for Arnheim to advance his developing ideas on art as a form of thought. “Any creative activity,” he reportedly maintained, “is the result of the training of the mind as a whole.” Those positions became a matter of consensus in the discussion that followed, which affirmed that “technical problems were of less pressing importance than those involved in making creative activity a part of the general learning process, and that emphasis should be


156 After leaving Chicago, Kepes and Wolff also briefly taught together at Brooklyn College in New York, before Kepes moved on to M.I.T. in 1945.

157 Art Education 1949, 13.
transferred from the teaching of artists to the creation of a more general sensitivity to the values of art.”

The MoMA conference was an early example of what would become through the 1950s and into the ‘60s a widespread preoccupation of educators. A 1953 Columbia Teacher’s College study by Ernest Ziegfeld, *Art in the College Program of General Education*, frequently cited by historians of education, pointed to the escalation of efforts to include studio art courses in the basic liberal studies curriculum. The author’s explanation of the pedagogical rationale relied on a definition of the “aesthetic experience” remarkably close to Kepes’s own—and indeed drew on a set of writers influenced by Gestalt psychology, such as Susanne Langer and Robert Ogden. The aesthetic experience, wrote Ziegfeld, is defined by a “quality of organization, of interrelatedness of parts in the formation of a unified totality.” As such, it is the “intuitive” and “emotional” counterpart to intellectual understanding, which is what defines its privileged position with respect to creativity—a key desired product of general education:

[T]he pattern of creative skills is closely related to an imaginative capacity which enables the individual to see in given data the possibilities for new relationships. This… is as closely allied to intuition and feeling as to pure intellect. … Of equal importance is the disposition and eagerness to experiment, to seek… new patterns and relationships.

Thus “intellect,” Ziegfeld observed this time citing Herbert Read, another close acquaintance of Kepes’s, should be supplemented by a “wider concept—which includes sensibility and insight as well as intellect and reasoning, the perception of a pattern in relational cognition, and not merely the awareness of discrete relations, the *raison sensitive* as well as the *raison intellectuelle*.”

---

158 Ibid., 14.
160 Ibid., 80. See also pp. 57-58 on the fostering of the “creative approach” as the goal of general education.
Increasingly, such ideas were becoming the lingua franca of supporters of the role of art in general education. When Kepes invited Wolff to contribute to his *Vision and Value* series in 1965, the latter was still posing the question: “how can visual studies serve general education at the college level?”\(^{162}\) The task of studio courses in higher education, he offered echoing both Read and Ziegfeld, was to engage and foster “sensory intelligence” or “visual intelligence,” in turn essential to the development of the “independent, courageously exploratory mind.”\(^{163}\) Wolff’s contribution was generously illustrated with examples of student work from his own courses at Brooklyn College, where he had taught since 1946, revealing his debt to Bauhaus approaches absorbed during his tenure in Chicago. (Figure 42) The pedagogical logic driving such exercises, however, was now entirely different. They were to engage the student in an “intense and complex visual exertion” that would become a new “habit of the mind,” both augmenting and counteracting the effects of higher education’s focus on “conceptual scholarship.”\(^{164}\) The education of intellectual creativity meant bringing to “people blinded by the visual fog of ceaseless conceptual cerebration” the discipline of “the eye… set free to think for itself.”\(^{165}\)

But perhaps Kepes’s most significant encounter with the problem of art in general education occurred through his engagement with Harvard University’s efforts in that area, which started in the early 1950s and culminated with the establishment in 1963-1964 of the Carpenter Center for Visual Studies, whose directorship Kepes was offered in 1963. Since the history of its

---


\(^{163}\) Ibid., 222, 220.

\(^{164}\) Ibid., 226, 225.

\(^{165}\) Ibid., 226, 224.
In 1952, Harvard’s Board of Overseers commissioned a study to explore the future of the arts at the university. The aim of the appointed committee was “to increase [the] general educational experience [of Harvard and Radcliffe undergraduates] in the visual area and to complement their traditional verbal and mathematical training.” Under the chairmanship of John Nicholas Brown, the committee completed its report in 1956. The conclusions of the so-called Brown Report were preceded by Harvard president Nathan M. Pusey’s assertion that “the study of art belongs in liberal education and in the university,” and that “the appeal of art [should] continue strong as an educational asset of great potential.” As a guiding statement of general philosophy, Pusey invoked the words of Herbert Read, who was visiting as Charles Eliot Norton Professor at Harvard in 1954-55 during committee deliberations: “The mind’s growth is its expanding area of consciousness, and that area is made good, realized, and presented in enduring images, by a formative activity that is essentially aesthetic.” Much of the philosophical deliberations of the report, in fact, were preoccupied with defending art’s role in stimulating “the mind’s growth.”

---


168 Ibid. Pusey also cited Alfred North Whitehead to support that position, noting that “if there be truth in it, then surely there is compelling reason for faculties who care for the mind’s growth to consider again and again what place art should have in the community of the college and the university.”
“The artist,” wrote the committee, “is a creative intellectual… . The university should welcome him.” The hope was expressed that “the artist can bring into the university his powers of comprehension, integration, and expression.” The problem at hand was how to integrate “the creative process” into “the educational process”: how to frame, in other words, the introduction of studio practice into the university “on a par with other fields of scholarship.” Studio practice, the committee asserted, was a “training of the mind’s eye” and an “instruction in relationships.” It is because of its status as “discipline of the mind as well as of the hand” that art practice “can serve the central purpose of liberal education.” Against assumptions that art-making is a “mentally inferior activity,” the committee insisted that it “can speed up the process of learning, and… transform a student’s attitude from a relatively passive and docile to a more active and more critical one.” On the basis of such conclusions, the committee recommended that the university establish a new Department of Design, to combine courses in “contemporary design” with studies in “the techniques of drawing, painting and sculpture,” and house it in a new Design Center that should also “serve the entire university community.” Such plans were implemented by the appointment of a standing committee on the visual arts, and received a new impetus the following year with a gift of $1,500,000 from Mr. and Mrs. Alfred St. Vrain Carpenter for the construction of what was now called a Design Center for the Visual Arts.

169 Report of the Committee on the Visual Arts at Harvard University, 46-47.
170 Ibid., 6, 48.
171 Ibid., 6.
172 Ibid., 52.
173 Ibid., 52-53.
174 Report of the Committee on the Practice of the Visual Arts for the Year 1957-58, HUA, UAV 322.7.4., IIA, Box 6.
Meanwhile, deliberations about the nature of the projected center proceeded at Harvard. As the Brown Report draft was distributed to relevant faculty at the end of 1955, Jose Luis Sert, Dean of the Harvard Graduate School of Design, took an active role in refining the concept of the center. Meeting with Brown, Sert suggested that the center embrace a “larger vision,” initiating under its auspices a graduate Program in Visual Communication, which might later grow into a graduate School of Visual Communication—thus maintaining “continuity between undergraduate and graduate education in the theory and practice of the Visual Arts.” Sert forwarded the letter he wrote to Brown summarizing their discussions to John E. Burchard, who was then Dean of the School of Humanities and Social Science at MIT. Just the previous year, Burchard had written a foreword to Kepes’s second book, *The New Landscape in Art and Science* (1956), and it is more than likely that Kepes’s name would have immediately come to his mind in relation to the ideas on “visual communication” floated by Sert.

In 1961, Kepes sent Sert a preliminary program for the *Vision and Value* series of books, which he noted “would center on the visual arts [as] key shapers of the environment and

---

175 Jose Luis Sert to John Nicholas Brown, 7 October 1955, unsent draft, HUA, UAV 322.7.4., IIA, Box 6, p.2. Sert was responding to a passage in the Brown Report that stated: “[P]erhaps at no moment in history since the invention of printing has man’s communication with his fellow man been so largely taken over by visual media as today. Less and less is modern man swayed by the argument of the written word, and more and more by the photograph, the billboard, the cinema, the picture magazine, and now television. Until both sender and receiver of these visual messages are trained in the twin arts of perception and discrimination, the educated man may hardly claim to be the master of his own environment.” *Report of the Committee on the Visual Arts at Harvard University*, 9. Following that lead, Sert proposed a graduate department within the center that “should deal with visual communication in their broadest aspects, [including] courses on the nature of vision and special studies on the impact of television, the movies, illustrated magazines, etc.” Jose Luis Sert to John Nicholas Brown, 14 October 1955, HUA, UAV 322.7.4., IIA, Box 6, p.2.

176 Jose Luis Sert to John Burchard, 8 December 1955, HUA, UAV 322.7.4., IIA, Box 6.

177 See John E. Burchard, “Foreword,” October 1954 in Gyorgy Kepes, *The New Landscape*, 13-15. Sert also sent a copy of the Brown Report to Herbert Bayer, whom Kepes knew well, and whose name would later appear on the list of possible directors for the Carpenter Center. See Jose Luis Sert to Herbert Bayer, 2 March 1956, HUA, UAV 322.7.4., IIA, Box 6; Eduard F. Sekler to Jose Luis Sert, 19 November 1962, HUA, UAV 322.7.4., IIA, Box 6. Aside from Bayer, the list at this point included John Sweeney, Rudolf Arnheim, Herbert Matter, and George Nelson.
powerful conveyors of communications and ideas." Meanwhile, on the heels of his initiative in 1955, Sert was appointed as the first chairman of the Faculty Committee for the Practice of the Visual Arts, which proceeded with plans for the Design Center. The emphasis on “visual communication” was retained and advanced to a position as one of the areas of focus in the center as a whole. The word “design,” however—which Burchard had thought to be confusing in relation to the existing School of Design—was excised from the projected center’s name.

By 1962, discussions referred to the Harvard Center for Visual Studies. As Eduard Sekler, who would become the first director of the Carpenter Center, recalled in 1968, the term “visual studies” was coined specifically for the center in 1961-1962. “Visual Studies,” he explained, are concerned with visual experience, visual exploration and visual creation. … Visual Studies have as their object … visual experience in its relation to the entire complex of human feeling and thought, purpose and action. Visual Studies, accordingly, include the study of Visual Communications as one system of non-verbal communication which can powerfully parallel and supplement verbal communication.

The notion of “visual studies” encompassed better than “visual communication” did the circuit of ideas at the heart of the center’s rationale, which linked the creation of visual form as an intellectual process, its importance in supplementing “verbal” scholarship as part of education’s task to train the mind, and its impact on the larger psycho-social environment.

Even as the center was eventually renamed the Carpenter Center for the Visual Arts some time around 1963, it retained this “visual studies” rationale. In what would become the definitive

---

178 Gyorgy Kepes to Jose Luis Sert, 22 August 1961, HUA, UAV 322.7.4, IC, Box 7, p.2.

179 Eduard F. Sekler, *Statement to the Faculty of Arts and Sciences*, 5 March 1968, p.1, Kepes Papers, AAA, Reel 5309, frame 23.

180 “Degeneration into a routine made up of arts and crafts,” noted one planning document, “or courses in appreciation will be prevented by an unequivocal emphasis on such focal concepts as ‘visual communication’ and ‘structure.’” Mirko Basaldella, Eduard F. Sekler, Robert Gardner, *Harvard Center for Visual Studies*, 9 January 1962, HUA, UAV 322.7.4., IIA, Box 6, p.1.

181 John Burchard to Jose Luis Sert, 12 December 1955, HUA, UAV 322.7.4., IIA, Box 6.

182 Eduard F. Sekler, *Statement to the Faculty of Arts and Sciences*, 1.
version of the Center’s program, Sekler posited its “foremost obligation” to “an educational task”: work toward “the basic goal of all genuine education: to help an individual achieve the fullest possible recognition and realization of his inherent potentialities integrated within the framework of his society—man in full command of his own capacities and at home in his environment.” Thus the Center would engage the student in “learning to see [and] learning how to ‘make visible’ conditions and relationships that were unseen before by creating new shapes and patterns.” The notion of “seeing as a supreme source of knowledge” was reinstalled at the heart of the Center’s mission, where it would serve as a counterpoint to “the dominance of conceptual thinking and verbalization in universities”—asserting that “the two are… perfectly compatible and even capable of enhancing each other.” 183 The concept was captured in the term “visual literacy” that herewith served to describe the Center’s combination of “creative activity” and “intellectual content”—its wager that “the creation of visual art is… a legitimate use of the mind.”184

Having thus outlined the Center’s mission, Harvard’s Committee on the Practice of the Visual Arts had considerable difficulty in finding a suitable director.185 The members’ deliberations “circled inevitably about a mythical figure who would… be all things to all people: art historian, artist, authority on communication, expert in visual education, author, scholar,


184 See Joseph M. Russin, “Visual Arts and the University: The Case for Creativity,” The Harvard Crimson, Visual Arts Center Supplement (May 1963), 5, 15. In his program statement cited above, Sekler wrote of his goal to combat “visual illiteracy” that he blamed for “the visual squalor of much of our environment.” See Sekler, Carpenter Center for the Visual Arts, 1. Another contemporary program statement declared that “the Carpenter Center is primarily a facility to increase and encourage the visual literacy of students at Harvard and Radcliffe colleges.” An Introduction to the Carpenter Center for the Visual Arts, [1963], HUA, UAV 322.7.4., IIA, Box 6, p.3.

185 “Whereas in recent discussions,” wrote Sekler in 1962, “there has been little difficulty outlining a workable program for the new Center, we have gotten bogged down, time and again, in our search for a Director.” Eduard Sekler, Harvard Center for Visual Studies, 26 January, 1962, HUA, UAV 322.7.4., IIA, Box 6, p.2.
philosopher, and administrator.” They decided with only one dissenting vote to make the offer to Kepes—listing Arnheim as a second choice. Kepes declined. “As I imagine the task of the Carpenter Visual Arts Center,” he followed up with Harvard’s Dean Franklin L. Ford, “it seems very close to the dreams and ideas I have had and the only place where they could become a reality; I had a very bad night after your [call] for I felt I had buried a great opportunity.”

There is no reason to doubt the sincerity of Kepes’s words, as he was, in fact, at the very moment engaged in lobbying for a very similar institution at MIT. If he had rejected Harvard’s offer gambling on a chance to devise his own center at MIT, the wager paid off with the opening of his Center for Advanced Visual Studies (CAVS) in 1967—whose history is discussed in the following chapter of this dissertation. While it would also depart in a number of significant ways from the Carpenter Center model, the philosophy behind CAVS certainly benefitted from Kepes’s engagement with the discourse on the educational role of visual art.

4.3 THE CITIZEN’S MIND

Kepes’s archives preserve a set of mostly undated handwritten notes filed apart from drafts of manuscripts and speeches. A number of these bear the heading “Education of Vision.” Their content and the piecemeal nature of their accumulation suggests that they may be at once records of initial thoughts on what would become the namesake publication and traces of an ongoing intellectual project to define a pedagogical problematic of vision, evident already in Kepes’s early sketch for a “University of Vision” and resurfacing in the 1960s as a proposal for

---

186 Minutes of the Committee on the Practice of the Visual Arts, Meeting of 14 January 1963, HUA, UAV 322.7.4., IIA, Box 6, p.2.

187 Gyorgy Kepes to Franklin L. Ford, Dean of the Faculty of Arts and Sciences, 13 March, 1963, Kepes Papers, AAA, Reel 5303, frame 1080.
an “Institute of Vision,” discussed in the following chapter. “As creative art is forming par

excellence,” reads one of these notes

it is imperative that its role as basic educational discipline should be incorporated in the general education methods. –But not only as an independent although maybe important unit—but rather as a fundamental structural fibre [sic] of the whole.

Form thinking—structural thinking, configuration thinking is different from simple making little painting[s] in an art department of the university.

Form thinking must penetrate all disciplines of education.

How to do it?188

The same experiences that introduced Kepes to the problem of creative intelligence involved him also in thinking about “general education”—a parallel postwar project of national scope, to which the issue of creativity was inextricably linked, and within which it acquired still another set of strategic coordinates. If the need for “manpower” at the exhaustion of the geographic frontier heralded the emergence of creative thought as a key national economic resource, the intellect was also called upon as an agent of political identification. The aggressive movement of the federal government into the educational arena required a corresponding subjectivity as its target and goal. National education would be oriented to the formation of the citizen, and “general education” became the most direct medium for the articulation of that identity. The venerable Deweyan discourse on the intersubjective constitution of democracy—the democratic polis as the ethico-political extension of the democratic individual—was a readily available reference point. But its postwar application in educational discourses was distinguished by the imperative to link a definition of democratic citizenship to the new paradigm of the free, independent, and innovative mind.

188 [Gyorgy Kepes,] “Education of Vision,” handwritten note, undated, Kepes Papers, AAA, Reel 5312, frame 505. Here and going forward, I have attempted to stay as close as possible to the textual structure of the notes. I have, however, amended the punctuation for clarity when necessary.
Kepes was prepared by his wartime experiences to think about the formation of subjectivity and its political mediations. His first book, as I have argued, posited that visual art’s language of value assisted in the production of what may be called the (implicitly democratic) social self. As his concerns now shifted from the area of public communication to that of general education, the “language of vision” was replaced with “form thinking,” and Kepes proceeded to plot an answer to the question he posed in the note cited earlier: how to make “form thinking” an integral part of general education. “First,” he wrote

mobilisation [sic] of the total personality by active work of forming.

Second, by pointing out the structural correspondence between one and other types of forming: psychological + social, etc.189

Another note, titled “Education of Vision, General Education” clarified the above position:

Rorschach has shown that the way a person sees is the [essential] character of the person.
The structure of his vision—the rhythm, form configuration of his perception—is the microcosmos [sic] of his attitude, purposes, concepts-conflicts.
Not what one sees—but how one sees is today significant.
The objective reality—the physical stimulus—is only the basis…

[T]he human purpose—filtered by social convention of language, mores, etc.—makes the structure of vision.190

The problem posed, therefore, was how to articulate a link between vision and socially-mediated character formation—the presumed goal of education. Perhaps to remind himself of a related line of thought, Kepes noted parenthetically: “Ames, Gestalt, etc.” As Kepes’s thoughts turned more and more to education, he continued to build on his interests in perceptual psychology. In fact, in the work of Adelbert Ames, a perceptual psychologist with whom Kepes was communicating in 1947, and from whom he now borrowed terminological signposts such as “purpose,” Kepes

189 Ibid. Punctuation added.

would have discovered a necessary discursive link between vision and education for democratic citizenship.

An idiosyncratic figure, Ames captured the attention of a large segment of the art and design community in the 1940s with a series of experiments he was then conducting at the Dartmouth Eye Institute in Hanover, New Hampshire. Kepes was among many art-world pilgrims to the so-called Ames Demonstrations in Perception, which he must have visited after the Eye Institute was relocated to Princeton University in 1947. The demonstrations involved constructed objects or environments that, when seen from a predetermined position (usually through a peephole), produced optical illusions whose mechanics were revealed with a change in perspective. For example, what appeared to be an average chair was in fact a chaotic assembly of sticks suspended in the air; or a perfectly rectangular room in which objects appeared to miraculously change in size as they moved from one end to the other revealed itself to be, in fact, of highly irregular dimensions. (Figure 43) These constructions served as a dramatic demonstration of the subjectivity of perception, theorized by the Ames circle as a postulate of “transactional psychology.” Rather than a passive reception of stimuli from an external world, perception was an active collaboration between the environment and the embodied mind, an “individual-environment transaction.” This process consisted of a “subconscious integration”

---

191 After closing in 1947, the Dartmouth Eye Institute was relocated to Princeton, where until 1961 it was known as the Hanover Division of the Institute for Associated Research. See Roy R. Behrens, “The Life and Unusual Ideas of Adelbert Ames, Jr.,” Leonardo 20 (May 1987), 273-279. For further discussion of Ames, see my “Strategic Universality of trans/formation.”

192 See Adelbert Ames to Gyorgy Kepes, 4 April 1947, Kepes Papers, AAA, Reel 5303, frame 181. Among those close to in Kepes’s circles who visited the demonstrations were Alexander Dorner, Serge Chernayeff, and Sigfried Giedion. Gropius also makes a reference to Ames in Gropius, “Design Topics,” discussed at the beginning of this chapter.

by the perceiver of past experience, given conditions, and goal-oriented anticipation, which Ames referred to as “purpose.” In short, the observer altered the observed.

It is easy to see why Ames’s ideas would have resonated with Kepes. The emphasis on the mind’s role in perception was fundamentally in accord with Gestalt psychology. Moreover, the Hanover Institute’s interest in perceptual integration paralleled in many ways the interest of both general semantics and the Unity of Science movement in linguistic integration. Ames shared with both Korzybski and Morris a pragmatist attention to the contingencies of purposeful action and context in the constitution of meaning. Likewise, Ames advanced a relativist, performative conception of knowledge as the basis for social agency in the democratic polis. As he saw it, Eye Institute experimental discoveries had important political implications:

The processes that underlie our perception of our immediate external world and our perception of social relationships are fundamentally the same. … To assure the survival and growth of democracy we need to know… how to train citizens
(a) to recognize their purposes as individuals,
(b) to rely on them,
(c) to make them known and carry them out.”

This was an explicit connection between perception’s grounding in the mind and its utility in the educational formation of the democratic citizen.

The link, however, had a crucial mediating term. It was expressed in the notion of “environment,” which started to appear in Kepes’s writings at the time of his communication with Ames, and soon became the central concept of Kepes’s own educational philosophy. “Without ordering of his physical environment,” he wrote in 1947, “[man] cannot survive. His creative capacity to construct his environment in terms of his needs, that is, to work out a relative

---

194 Ibid. The concept of “purpose” was specifically addressed in a paper Ames sent to Kepes in 1947. See list of enclosed materials in Ames to Kepes, 4 April 1947, Kepes Papers, AAA, Reel 5303, frame 182.

equilibrium, is the very foundation of his existence.”¹⁹⁶ The “environment” concept belonged to a diffuse discourse, widespread in the first decades of the century, which merged evolutionary biology and behaviorist psychology to describe human or social evolution. Before the 1940’s, Kepes would have encountered this discourse in the writings of Julian Huxley—also a source for Moholy’s notion of psycho-biological “new vision.”¹⁹⁷ In America, evolutionary behaviorism was especially prevalent in educational circles, where it was associated with William James and his student Edward Thorndike, as well as with Dewey. The latter maintained, for example, that mental activity was a projection of goals derived from previous experience and oriented to the maintenance of “equilibrium” or “adjustment” with a changing environment, by means of which the human organism assured itself of ongoing survival.¹⁹⁸ By affecting “patterns” of behavior or “habit systems,” Dewey and others argued, education could assist in the attainment of the mind’s proper adaptive function in its environmental interface.¹⁹⁹ The notion of “patterning,” related to this discourse on the environment, was captured by Kepes and readily assimilated within a philosophical vocabulary in which “order” and “organization” were already key terms. “We make a map of our experience patterns,” he wrote in 1956,

an inner model of the outer world, and we use this to organize our lives. Our natural ‘environment’—whatever impinges on us from the outside—becomes our human ‘landscape’—a segment of nature fathomed by us and made our home.²⁰⁰


¹⁹⁷ See Martin, Organizational Complex, 54-58.

¹⁹⁸ See Rippa, Education in a Free Society, 208-9. The establishment of “equilibrium” as a psycho-social desideratum in the discourse on education was certainly reinforced for Kepes by his contemporaneous encounter with the discourse of cybernetics, which introduced him to yet another notion of “equilibrium.” See Martin, Organizational Complex, 38-39, 55.


²⁰⁰ Kepes, New Landscape, 18-19.
Ames and Dewey met in 1947 and carried on an extensive correspondence.\textsuperscript{201} But it was Kelley’s \textit{Education for What is Real} (1947) that would ultimately instrumentalize the Ames Demonstrations toward a program for progressive education.\textsuperscript{202} Education professional and Dewey follower, Kelley considered the Ames experiments objective proof that “man is one with his environment.” He called upon educators to prepare “good citizens” by investing school-children with “patterns of living” based on cooperation and communication in accordance with mutually recognized and accepted “purposes,” rather than antagonism or submission to authority. The expression of responsible self-knowledge in the acquisition of techniques for “self-control,” Kelley argued, was crucial for a society based on the ideal of self-government.\textsuperscript{203} Kelley’s ideas were widely adopted in educational circles, where they prompted the establishment of perceptual training programs in all degrees of sophistication, from technologies of visual organization taught at art schools to “art appreciation” courses incorporated into general education curricula.\textsuperscript{204} Perhaps the best-known of the former was a program of training in “organized perception” developed by Hoyt Sherman at Ohio State University, which actually employed recreations of the Ames Demonstrations.\textsuperscript{205} Kepes corresponded with Sherman as well, and even made a trip to Columbus in 1950.\textsuperscript{206}


\textsuperscript{202} An article by Kelley, “Reality and Education,” was among the texts Ames sent to Kepes in 1947. See list of enclosed materials in Ames to Kepes, 4 April 1947, Kepes Papers, AAA, Reel 5303, frame 181.


\textsuperscript{204} See Jarzombek, \textit{Psychologizing of Modernity}, 129-159.


\textsuperscript{206} See Gyorgy Kepes to Hoyt Sherman, 29 May 1950, Kepes Papers, AAA, Reel 5303, frame 260.
Arguably, what made Ames and Kelley critical references for those concerned with the overlap between art and education was their success in situating the training of vision as an organized response to the programmatic concerns of the general education movement, which, as one historian notes, “came… of age” after the war in a “great wave of self-examination.”207 The concept of “general education” had been in use in America since the nineteenth century to denote a broad education as distinguished from vocational or specialized instruction. Its rationale, moreover, derived from the classical conception of the “liberal arts,” a fundamental element of which was the shaping of the student’s moral character to the ideal of “the active, virtuous and generally capable citizen.”208 Some of the most frequently recurring notions in the educational discourses with which Kepes was conversant relate to the ethico-political ideal framed by the historical discourse of liberal arts education and its mid-century variants.209 The postwar general education program added a new economic logic to the liberal arts ideal, thus linking up in turn to evolving conceptions of the liberal-democratic state. In the dual techno-economic and ethico-political rationale with which the general education program addressed the challenge to produce subjects best suited to a changing environment, one can trace the merger of political freedom and


208 Ibid., 53, 55.

209 A prominent nineteenth century educator, for example, wrote of “the development of the soul in all its faculties… which brings out the whole man and… commits him to active life.” Another wrote of liberal education as “the opening of the mind to the great departments of human interest; the opening of the heart to the great spiritual motives of unselfishness and social service; the opening of the will to opportunity for wise and righteous self-control.” Kelley’s argument linking moral and political (democratic) character traits was also common. Democracies have the greater need of widely diffused general education,” as a 1914 text stated, for example, since “all men partake of the character of rulers [and] ought to be trained… for that duty.” See Henry P. Tappan, “University Education” (1851); William DeWitt Hyde, “The College” (1904); A. Lawrence Lowell, “The Selective Function of Education” (1914), cited in Russell Thomas, The Search for a Common Learning: General Education, 1800-1960 (New York: McGraw-Hill, 1962), 23, 42, 55. Emphases added.
economic growth as the perceived defining characteristic of the postwar state. That rationale is well expressed in a statement made by Kepes in 1947:

The scientific and technological equipment we possess today must be brought under human control, which implies the ordering of our social relationships upon a basis of true political and economic democracy. Man also must be liberated from his present narrowness and weakness generated by fear in an insecure world. Without economic freedom on the widest possible social basis it is meaningless to speak about free individuals.210

The influence of postwar liberal-democratic ideology pervading general education discourses on Kepes’s educational philosophy was rarely as explicit as it is here.

The idea that the postwar world was “insecure” certainly brings to mind an atmosphere of pervasive dread brought about by Cold War geopolitical tensions—a commonplace of the period’s cultural history. However, those who expressed concern with social instability frequently framed it, rather, in terms of an environment destabilized and disturbed by an accelerated pace of change, driven by techno-economic development. For Admiral Rickover, in the text discussed above, the notion expressed a global perception of both America’s internal historical development and its current geopolitical position. It was prevalent and widely applicable enough to be rehearsed by George Kennan, Cold War foreign policy mastermind. “Wherever the past ceases to be the great and reliable reference book of human problems,” wrote Kennan in 1954, “there the foundations of man's inner health and stability begin to crumble, insecurity and panic begin to take over, conduct becomes erratic and aggressive. These, unfortunately, are the marks of an era of rapid technological or social change.”211 Concerned as they were with the moral and psychological cultivation of individuals, postwar educators found

210 Kepes, “Creative Discipline,” 17.

this environmental model appealing, since it linked an outline of socio-economic causes to manifestations of social psycho-pathology. “It is a commonplace,” Ziegfeld noted, for example that one of the chief characteristics of our age is the fact of rapid and profound change. … Within the past two centuries, science and technology have revolutionized the material facts of our existence, and as the material environment has been thus altered we have had no alternative but to accept and adapt ourselves to radically new patterns of living.\footnote{Ziegfeld, \textit{Art in the College Program}, 22. My emphases.}

Ames and Kelly invoked the same idea in their wager that training in new “patterns of living” could assist mental survival in a world in flux.\footnote{Kelly, \textit{Education for What is Real}, 1.} The identity maintained here between the social and the somatic “environment” guaranteed the capacity of art and design, purveyors of perceptual “experience,” to become agents of readjustment to a changing society.

Kepes advanced a similar program. “When unprecedented aspects of nature confront us,” he wrote in 1956, “our world-model inherited from the past becomes strained… . Disoriented, we become confused and shocked.” The corrective response Kepes proposed was that of “orientation,” a project Dewey himself had posed as the goal of general education.\footnote{General education, Dewey wrote, should offer “a survey… of the universe in its manifold phases” through which the student “may get his orientation—his placing himself in the larger world.” John Dewey, \textit{The Educational Situation} (1902), cited in Thomas, \textit{Search for a Common Learning}, 53. Thomas also suggests that the widespread academic usage of “survey course,” as well as the now more dated “orientation course,” was linked to this Deweyan terminology.} “To convert this new environment into a human landscape,” Kepes wrote, “we need… to map the world’s new configurations with our senses… . Reoriented, we shall then be in a position to cope with the new world of forms.”\footnote{Kepes, \textit{New Landscape}, 18-19.} Practically, the pedagogical task of “orientation” was carried out by Kepes in his Visual Fundamentals courses, which constituted the most concrete manifestation of his educational activity. At the same time, however, instruction in the “fundamentals” of knowledge was being advanced throughout the country as the guiding concept
of general education and the programmatic answer to the dual politico-economic imperatives taken on by the nation’s educational complex.

The search for unifying principles of knowledge had been proposed as a defining characteristic of liberal education before the war. As one observer put it in 1922, liberal or general instruction should focus on “not saying in advance what will be found but trying to find the forms of unity which must be there if we can think at all.”\(^{216}\) In the postwar period, the concept became a banner of the general education movement. It was described in a program outlined for Harvard University’s general education curriculum in 1945, which soon after it was published became the signpost of postwar curriculum reform measures nation-wide. The *Report of the Harvard Committee on the Objectives of a General Education in a Free Society* proposed an educational focus on “fundamentals” of integrated knowledge, derived from a balance of the humanities with the natural and social sciences. Intended as a counter to the unavoidable “centrifugal forces” of specialization, general education in the liberal arts was conceived here as a “concurrent, balancing force” permitting the student to “grasp the complexities of life as a whole.”\(^{217}\) Notably, the Harvard Committee saw specialization as at once a source of intellectual fragmentation and a disjunctive *social* force—and therefore its prescription for a focus on fundamentals was weighted with both knowledge-acquisition and socio-political imperatives.

The Harvard report, as one historian noted, reflected the “common double-edged etymology” of “liberal.” On the one hand, liberal education was defined as education for the


“free person,” the liberal-democratic citizen. The capacity to understand “life as a whole” was viewed here to be essential to the student’s formation as a citizen and participation in the political life of the nation. “Liberal” knowledge, therefore, was taken here to mean “that which befits or helps to make free men”; and a free man was one who was “able to judge and plan for himself, so that he [could] truly govern himself.” General education, thus, was essential to the production of a “social freedom” premised upon the possession of an “inner freedom.” On the other hand, education had to sustain the task of “freeing the person” for a life of ongoing self-directed inquiry, the free pursuit of truth. In that respect, however, the need to “become an expert… in the general art of the freeman and the citizen” also had an economic rationale. The independent and self-sufficient mind was a prerequisite for success in a rapidly changing knowledge economy. “Specializing in a vocation,” wrote the Harvard Committee, “makes for inflexibility in a world of fluid possibilities.

Business demands minds capable of adjusting themselves to varying situations and of managing complex human institutions. Given the pace of economic progress, techniques alter speedily; and even the work in which the student has been trained may no longer be useful when he is ready to earn a living, or soon after. Thus, following an argument that soon proved to be paradigmatic in educational policy discussions, the Harvard report conceived general education as the cultivation, at once, of liberal democratic political man and postindustrial knowledge worker.

---


219 General Education in a Free Society, 53. The ethico-political notion of general education as the cultivation of mental traits associated with democratic citizenship, and expressed in the link between democratic freedom and the freedom of the mind, is also outlined in Cohen-Cole’s discussion of the Harvard Committee’s deliberations. See Cohen-Cole, Thinking About Thinking, 74-95.

220 Kimball, Orators and Philosophers, 233-4.

221 General Education in a Free Society, 53.
Training in “fundamentals” entailed the acquisition of an intellectual “method and outlook”—as opposed to specialized “subject matter.” The idea that the student should be taught a certain process of thought was the credo of the so-called “inquiry method” that came to dominate general educational philosophy in the 1950s and 1960s. The imperative to understand fundamental intellectual processes at the heart of specialized knowledge, the idea that “to master a discipline was to master its way of thought,” was always supported by a conception of national economy defined by the rapid obsolescence of information and productive systems. The discourse of “fundamentals” increasingly augmented the earlier focus on ethico-psychological “patterns” with a new emphasis on “processes” and “structures” of knowledge. At the turn of 1960, such concepts were publicized by several federally-sponsored committees on education. The best known of such reports was *The Process of Education* by Jerome S. Bruner, where the approach to education was discussed in terms of fundamental “structures” of knowledge based on intuitive and creative thought processes.

General education’s task, therefore, was precisely to restructure the mental apparatus of the knowledge worker, to equip him with a capacity to confront and—more than that—to embrace and advance the unexpected. It is fitting, then, that an earlier language of bio-social evolution continued to distantly resonate in postwar educational reform rhetoric, occasionally becoming explicit. This was the case, for example in an essay on “Adaptability for Survival and

---

222 General Education in a Free Society, 52-56.

223 Church and Sedlak, Education in the United States, 413.

Growth” by René J. Dubos, included among papers compiled in 1960 by Conservation of Human Resources Project director Eli Ginzberg.225 It is a national task, Dubos wrote, to “develop [the] adaptive potentialities [of young people], so as to help them deal successfully with the unpredictable challenges and emergencies that they will encounter throughout life.” This preparation entailed the acquisition of “theoretical knowledge, critical judgment, and discipline of learning,” because “in a world where everything changes rapidly, the practical facts learned in school soon become obsolete.”226 In 1966, Dubos’s formulation was cited by Daniel Bell, who was then arriving at an outline of his canonical definition of the “postindustrial society” in the process of writing a faculty report on general education for Columbia College. Dubos’s argument, Bell wrote, leads to the conclusion that “the curriculum has to be reorganized not so much to teach ‘subject matter,’ as to make fundamental the nature of conceptual innovation and the processes of conceptual thought.”227

Kepes would invite Dubos to contribute to his last Vision and Value anthology, the 1972 Arts of the Environment, where the latter extended his discourse on socio-biological evolution.228 However, Kepes could have encountered Dubos, Bruner, Bell, and other prominent writers on knowledge, education, and the environment much earlier.229 In 1952, soon after he arrived at the MIT School of Architecture to set up his program in Visual Fundamentals, Kepes joined the

---

225 The Conservation of Human Resources project is discussed earlier in this chapter.


229 Kepes recommends Bruner, for example, to Gropius as an authority on “perceptual problems.” See Gyorgy Kepes to Walter Gropius, 22 January 1968, Kepes Papers, AAA, Reel 5305, frame 573.
Boston-based interdisciplinary learned society, the American Academy of Arts and Sciences (AAAS).\textsuperscript{230} Affiliated with the American Unity of Science movement, the Academy was a natural extension of Kepes’s Chicago intellectual milieu.\textsuperscript{231} But, as a forum and community for some of the most prominent American intellectuals, it would have also expanded Kepes’s discursive references, introducing him to cultural and intellectual issues at the center of national discourse. Kepes participated in regular discussion meetings for members of both the Academy and the Harvard-based Institute for the Unity of Science, and possibly met there fellow participants who would become fixtures in Kepes’s own writings, published projects, and private correspondence: such as Gerald Holton, John Burchard, Karl Deutsch, and Norbert Wiener.\textsuperscript{232}

In the late 1940s and early 1950s, both the Institute and the AAAS engaged in discussions on general education. In a 1946 Institute program statement, Philipp Frank wrote of the “rich implications” that the Unity of Science research into the “integration of human knowledge and human behavior” had for “a practical problem which has been much discussed recently, the problem of General Education.”\textsuperscript{233} In 1951, the Institute reported on its research in the \textit{Proceedings of the American Academy of Arts and Sciences}, as it did frequently at the time. Harvard’s President James B. Conant, under whose auspices the Harvard Committee on general

\textsuperscript{230} See “List of the Fellows and Foreign Honorary Members (Corrected to January 1, 1953),” \textit{Proceedings of the American Academy of Arts and Sciences} 82 (March 1953): 29.


\textsuperscript{232} The former three are listed in Kepes’s \textit{The New Landscape in Art and Science} (1956) among “friends and colleagues” who advised on the manuscript. See Kepes, \textit{New Landscape}, 9. For Wiener’s influence on Kepes, see Finch, “Languages of Vision,” 228-233.

\textsuperscript{233} Philipp Frank, “The Institute for the Unity of Science: Its Background and Its Purpose,” \textit{trans/formation} 2 (1951): 77. As Galison points out, Frank drafted this program in 1946 on the basis of the discussions by the “Inter-Scientific Discussion Group,” held at Harvard from 1944 onwards. His concern for the role that the Unity of Science might play, specifically, in “modern American movements in general education” was also recorded in 1946. See Galison, “The Americanization of Unity,” 46-48. Kepes was known to participate in the Harvard meetings, but it is unclear when he started to attend them.
education had convened a few years earlier, commented on the affinity of the Institute’s “quest for unity in science” to his own efforts in the general education program. Burchard, who was elected president of AAAS in 1954, set up two committees to explore the subject of education: a Committee on the Role of Science in Liberal Education, and a Committee on the Unity of Learning. In 1959, the fruits of these efforts were published in a special issue of Daedalus, the Academy journal, on “Education in the Age of Science.” Much of the discussion struck the familiar balance between the imperatives of training the citizen and the intellectual worker. Again in 1954, one of the leading members of the Unity of Science movement, the physicist Percy W. Bridgman wrote for Academy Proceedings on the “task of the education of the future” on the premise that “such social concepts as human rights or duties or responsibilities will have to be modified when the environment in which they arose is altered, as it now is, by technological advances….” Citing Ames among others and accessing the established themes of educational discourse discussed above, Bridgman asserted that the task of education for democracy in an environment altered by science would be the “development of new intellectual techniques” as well as of “imagination that can sense the significance of… simple underlying


processes and relationships.” Had Bridgman accepted Kepes’s invitation to contribute an essay to *The New Landscape*, he would have perhaps extended such reflections.

Kepes’s involvement in both philosophical and institutional issues of education was extensive during the 1950s and 1960s. He clearly grasped the imbrication of economic and political imperatives driving the training of the mind in the discourse of general education, and expressed it in a way that was relevant to his own professional sphere of activity—that is, translated into the language of visual perception. A number of his “Education of Vision” notes posited and proceeded to explore a binary relationship between freedom and security. “Security, order,” listed one note, “visual attribute = balance.” To this was counterposed: “growth, development, freedom. Visual attribute = proportion, rhythm, movement.” Kepes then proceeded to give himself an intellectual assignment: “Try to trace back the two categories [security and development] in all possible implications: psychological, physical, biological, social, technological.”

“There was a hope by the progressives,” continued another note, that a radical transformation of the economic structure will bring a new social form. … But the centralization of the economic power, planned economy, centrally planned-regulated system creates… a regulatory class-type security-stability. What were the flags of the progressive movements—now became reality. Freedom-change… becomes more and more endangered. Like many of those engaged in the problems of education, Kepes struggled to accommodate the new economic imperatives of growth within the structures of security; like them as well, he translated that relationship also as the political relationship between freedom and community.

---


239 See P.W. Bridgman to Gyorgy Kepes, 16 November 1951, Kepes Papers, AAA, Reel 5303, frame 300.


“We are apt sometimes to stress freedom,” wrote the Harvard committee on general education, for example, as though completing Kepes’s thoughts, “the power of individual choice and the right to think for oneself—without taking sufficient account of the obligation to cooperate with our fellow men; democracy must represent an adjustment between the values of freedom and social living.”\footnote{General Education in a Free Society, 76.} “Self-determination of people,” Kepes echoed, “self-expression of the individual—must be complemented by the common social goals. … What is self-expression for—if it cannot express valuable life patterns.” It would be “art’s task,” he observed, to express such communal ties.\footnote{[Kepes,] “Education of Vision, General Introduction,” handwritten note, Kepes Papers, AAA, Reel 5312, frame 540.} Another note completed the series and set the agenda for Kepes’s overall project: “order-security, freedom-growth,” he wrote, “are complementary pairs of life activities… both on an individual scale as well as on a social political scale. The task is to achieve a living unity—a dynamic equilibrium—that is a stage where order, security, balance can only be reached in growth, … openness, freedom.”\footnote{[Kepes,] “Education of Vision, General,” handwritten note, Kepes Papers, AAA, Reel 5312, frame 553.}

It was, of course, Kepes’s self-directed research in perceptual psychology that had disposed him to think in binary terms. At the opening of perception to thought and meaning, Gestalt psychology had posited the relationship of figure and ground as irreducible and dialectically bound opposites. Kepes’s allegorical leap was to align that concept of visual form with a notion of social freedom circumscribed by the “recognition of… limitations.” “In the wild struggle of laissez-faire economy,” he wrote in 1947,

we were convinced that individualism run riot is freedom. … We believed that being unlimited means to be free. [But] freedom can only be reached by recognizing unique historical limitations. … If we
extend this understanding of freedom to the visual control of our surroundings, we can hope to recondition our attitudes, thus paving the way to greater social freedom.²⁴⁵

As it had for Gropius, the concept of limits proved central to Kepes’s ideas. It provided him with a link, both metaphorical and concrete, between the needs of the postwar liberal state and his own professional concerns with the training of vision. “Limitation implies definition by a context,” Kepes continued,

Any individual unit can only unfold its unique meaning through its contour line which connects it and divides it from a larger whole. … Things as individual units, are meaningless abstractions unless they are assigned their place in a communal, i.e. dynamic structure. … Instead of permitting each thing to exist in its own inconsiderate way, we must learn to create cooperation of objects, a community of things. … If we learn how to… see the relationships in visual qualities, we can strengthen ourselves to recognize bonds in all levels of existence.²⁴⁶

His project to proceed from a “community of things” to other communal formations, however, would unfold in relationship to a specific set of institutional contexts Kepes encountered upon his arrival at M.I.T. His accommodation to his new institutional home will be addressed in the next chapter.


²⁴⁶ Ibid., 22-23.
Unlike engineering, the natural sciences are not motivated by immediate utility. But when science ranges from the abstract toward the applied, and when engineering shifts its focus from immediate applications to underlying principles, the two fields merge in a borderland area in which it is impossible to distinguish one from the other. … In order for science to contribute to the borderland area, and thus for engineering to progress as a result of the progress of science, it is essential that the more creative and abstract aspects of science continually forge ahead in the direction of the new, original, and hitherto unexplored.

— Report of the Committee on Educational Survey to the Faculty of the Massachusetts Institute of Technology, 1949.

Since 1930, MIT’s Walker Memorial has housed an allegorical mural that conveys with catechistic solemnity the premise of scientia commanding the labors of the Institute: “Ye Shall Be as Gods Knowing Good and Evil.”¹ The passage from Genesis hems an image of a scientist, white-haired, clad in a lab-coat, releasing with an impartial gesture symmetrical spirits of beneficent and maleficent nature from two identical jars. The dogs of war and the cherubim of peace counter-align. A group of statesmen and military officers gathered around a conference table contemplates the scene. The decision is theirs. (Figure 44)

The purpose of “service to the nation,” rehearsed by countless postwar MIT spokesmen, entailed a vision of scientific knowledge as deferred agency. “Knowledge itself,” in the words of MIT President Julius Stratton, for example, “is neither intrinsically good nor evil; but the power that knowledge gives can be turned to evil purpose. … [Science] tells us what we can do; we

¹ The mural by Edwin Howland Blashfield, titled Good and Bad Uses of Science, is part of a cycle the artist executed at the Walker Memorial between 1924 and 1930. The other murals in the cycle are: Alma Mater; Humanity Led from Chaos into Light by Knowledge and Imagination; as well as representations of learning through the written word and through experiment, and groups of figures symbolizing various fields of study. See Mina Rieur Weiner, ed., Edwin Howland Blashfield: Master American Muralist (New York: W.W. Norton & Company, 2009), 99-103.
must turn elsewhere to learn what we ought to do.” Such statements echoed the inaugural conception of the role of science on the nation’s new frontier expressed in the Vannevar Bush 1945 report to the President, which opened up the postwar era of federal investment in the scientific research enterprise. “[N]ew products and processes are not born full-grown,” wrote the President’s scientific advisor, “They are founded on new principles and new conceptions which in turn result from basic scientific research.” Bush’s innovation was to champion state support of basic rather than applied science. The instrumentality of research, he suggested, was indirect, catalyzing development at a distance—much like investment stimulus. “Basic scientific research,” Bush offered in terms his audience could readily embrace, “is scientific capital.”

Between the agency with which knowledge was replete and its economic or political manifestation there had to be a gap, a pause, a delay. That caesura created a space of contingent autonomy where science was free to explore the full dimensions of its new frontier, bounded only by the requirement of creating potential utility, and otherwise endless.

From around 1930 through the immediate postwar period, MIT underwent a momentous change in institutional identity. Postwar president James Killian fulfilled and expanded the reforms initiated by his predecessor Karl Compton in converting the Institute from an established engineering school to an entirely new model of a science-based research university. Losing the focus on immediate industrial applications, MIT assimilated the liberal arts educational model on the undergraduate level and promoted basic science in graduate and post-graduate research. No

---


longer a practical servant to industry, MIT dedicated itself to a more abstract master—the nation. The transition involved the development of a new logic of instrumentality articulating a relationship between knowledge production and citizenship.

Since 1946, one of the most prominent faculty members of the MIT School of Architecture, Kepes became a spokesman and innovative practitioner of the deferred instrumentality that anchored the Institute’s regime of knowledge production. The cognitive-perceptual technology he started to develop in Chicago was linked at MIT to a new goal of giving the arts access to the social agency of the sciences. Adapting the Visual Fundamentals program to the professional education of architects allowed Kepes to offer one way—among many pursued at the School of Architecture—to articulate design as a discipline of intellectual research, analysis, and invention parallel to that practiced in Institute laboratories and seminar rooms. But Kepes’s project went well beyond the problems of professional education. He focused his real energy on inventing a discourse of the aesthetic image as both analogue and catalyst for communities of knowledge—tentative, exploratory and allusive structures, dedicated to the production of the ultimate desideratum, the aleatory and opportunistic social potential.

Kepes’s appointment came on the heels of curricular reform affecting the School as well as the Institute as a whole. In 1944, MIT completed an Institute-wide “simplification of curricula,” which determined a line-up of first-year undergraduate core subjects and outlined a four-year program of required electives. Under the banner of simplification, a program of “fundamentals” and an influx of “non-professional” courses announced the Institute’s ambitions for a changed profile as a research university “polarized around science,” in the standard postwar expression.5 The merger of professional and liberal arts education had been inaugurated in 1932

---

5 “President Compton Announces Post-War Curriculum Changes; Tells of Institute’s War Service,” The Tech LXIV, No.21 (June 9, 1944): 4.
under President Compton, who reorganized the Institute into three schools—Engineering,
Science, and Architecture—supported by two Divisions—the Division of Humanities and the
Division of Industrial Cooperation—as “service” adjuncts to the schools. A Committee on
Educational Survey, known as the Lewis Committee, established in 1947 with the task of
defining MIT’s educational philosophy, traced its lineage to Compton’s reforms, which it
understood to have “enlarge[d] the purpose and meaning of an MIT education.” 6 Expanding on
that heritage, the Lewis Committee proposed an “integral plan,” intended to suffuse professional
education with the objectives of general education “to develop the character traits, the
intellectual habits and skills, and the understanding of nature and man that an educated person
should have, regardless of the kind of work he does.” 7 The basis for such a policy was found in
the assertion that “in our increasingly complex society, science and technology can no longer be
segregated from their human and social consequences.” 8 The Committee offered as evidence a
series of ongoing trends, including shared methodologies between the natural and social
sciences, the merging of basic science with engineering “in a borderland area,” and finally, the
growing emphasis in architecture on scientific and engineering expertise in the “solution of
environmental problems arising from the impact of science and technology upon everyday living
and working.” 9

6 Report of the Committee on Educational Survey to the Faculty of the Massachusetts Institute of Technology (Cambridge, Mass.: Technology Press, 1949), 13. See also Karl Taylor Compton, MIT Bulletin, President’s Report Issue 68, no.3 (October 1932).


8 Ibid., 42.

9 Ibid., 27, 40, 43.
In fact, under such new institutional conditions of knowledge, Compton’s pre-war policy was obsolete in one key respect. The basic sciences and the humanities could no longer be thought of as “service” adjuncts to engineering expertise, intended to provide a compensatory cultural and scientific grounding. Instead, they had to be both independently strengthened and integrated into the heart of engineering methodology—while the instrumental orientation of engineering would in turn pervade all. It had to be recognized that “the method of learning typical of technological education also has a general educational value” on par with the methods of the basic sciences and the humanities. At the same time, the humanities and basic sciences should have “full professional status,” equal to that of the applied sciences.\(^\text{10}\) All four main branches of knowledge that now defined the work of the Institute (basic science, engineering, architecture, humanities) would be submitted to the single primary educational objective of “developing intellectual power rather than knowledge of routine procedures; mastery of basic principles rather than accumulation of information; and sensitivity to a variety of values and broad understanding of nature and man rather than specific competence in a narrow field.”\(^\text{11}\)

In other words, MIT adopted a “general education” platform, discussed in the previous chapter, as the philosophical basis of its new pedagogical model. To the conception of knowledge as a technology for the formation of liberal democratic political man articulated in general education discourses MIT added, however, its own particular brand of instrumentality, derived from a reflection on the increasing social prominence of science and technology. “All education should prepare men for social responsibility,” wrote the Lewis Committee,

\(^\text{10}\) Ibid., 22, 35. My emphasis.

\(^\text{11}\)Ibid., 25. The four equal, degree-granting subsets of the Institute after 1948 would be: School of Engineering, School of Science, School of Architecture and Planning, School of the Humanities and Social Sciences.
all education should concern itself with ends as well as means, with value as well as technique. We reject the view that there is one particular curriculum suitable to prepare men to be the leaders of society, and another distinct type suitable for specialists in techniques who are to be the servants of the policy makers. We believe that if the problems chosen for study are alive and complex, with social and ethical dimensions, the curriculum of the technological school can be an excellent medium for the development of leaders competent to handle the urgent social and political problems that now confront the world.12

The idea that liberal arts education participates in the formation of social leadership had also been a prominent feature of the discussion in Harvard’s general education program of 1945.13 The Institute’s bid for new status as a research university involved colonizing the domains of social and political agency that had been traditionally associated with the elite universities and their graduates—most immediately, those of MIT’s Cambridge neighbor.14 MIT would not simply absorb, but reconfigure the liberal arts, investing them with a form of knowledge structured by “techniques” to produce a new generation of leaders.

The notion of a compensatory, ameliorative, or even a public relations role assigned to the arts and humanities within an institution driven by the imperatives of large-scale sponsored techno-scientific research and development has typically shaped discussions of Kepes’s contribution at MIT.15 It is a position readily sustained by an ideology dominant in both public and critical discourses on the relationship between the sciences, on the one hand, and the arts and humanities, on the other, in the American academy. The sciences are the bearers of social utility,

12 Ibid., 23.


14 Compton’s reforms took Yale, Harvard, and Princeton as models for creating educational distinction, increasing selectivity at both the undergraduate and graduate levels. See Lecuyer, “Science-Based Technological University,” 162. In addition, MIT’s ambitions had an undercurrent of a long-standing rivalry with Harvard, whose identification with “literary culture,” counterposed to the “vocational training” of MIT, had obvious social class connotations. See Fred Hapgood, Up the Infinite Corridor: MIT and the Technical Imagination (Reading, MA: Addison-Wesley Publishing Company, 1993), 47-62.

measured by the inventions they contribute to the life of the nation; the arts have no pragmatic purpose, but are important as the carriers of moral and political value, which serve to temper the indifferent advance of science.16 This rationale was certainly frequently invoked in postwar discussions of the art-science polarity, and it can also be found in Kepes’s own writings. There is no reason to doubt the sincerity of those formulations. However, the history of MIT’s reinvention as a research university, and especially the history of Kepes’s role in that reinvention, suggests that the “humanization” model is a screen obscuring more complex transitions marking all forms of disciplinary knowledge at the Institute, submitting all to a framework of deferred utility within which the link between knowledge production and the postwar state was forged. Whatever the relative significance of the arts measured against the sciences in the MIT community, both forms of practice were shaped in a liminal area not accessed by oppositions of value and utility, autonomy and instrumentality. The logic of deferred agency and enhanced potential, in its function of articulating and sustaining limits, was fundamental.

5.1 VISUAL DESIGN FOR THE M.I.T. ARCHITECT

Kepes would often claim that he discovered his life project of uniting art and science at MIT, but it would be more correct to say that the evolving Institute gave him fertile ground to implement his long developing reflections on art as a form of instrumental knowledge. Already in the mid-1940s, the School of Architecture must have seen in him a potential philosopher and activist of its own role within the emergent MIT episteme. It may be said that MIT needed Kepes just as much as Kepes needed MIT. Shortly before his appointment as Associate Professor of

16 An example of this position as advanced recently in a non-academic platform may be found in Mark Slouka, “Dehumanized: When Math and Science Rule the Schools,” Harper’s Magazine (September 2009): 32-40.
Freehand Drawing, the School of Architecture had undergone a set of curricular reforms in line with those taking place within the Institute at large. In 1942, a Committee on the Curriculum had arrived at two interdependent conclusions: that the curriculum had to be modernized, and that the School must “pursue to its utmost the integration of [its] courses with the Institute environment.” The 1943 President’s Report summarized those twinned premises: “[I]t is abundantly clear that the ['modern'] movement is having a profound effect upon architectural thinking and practice. The trends emphasize the value of a technological environment around an architectural school.” The Curriculum Committee stressed the growing importance of technology and “scientific method” to contemporary architectural practice and found problematic the lack of sufficient basic math and science prerequisites, which precluded architecture students from taking higher-level electives in science and engineering. Accordingly, on the one hand, the restructured curriculum would include a rebalancing of the overall course load in favor of mechanical engineering, building industry economics, and city planning—with a proportional reduction of offerings in Graphics, Shades and Shadows, Perspective, and Abstract Design. (“We do not consider architecture as a field for unbridled personal expression” was the terse conclusion of the Committee, and a fine index of the “functionalist” ethos.)

On the other hand, the School of Architecture would embrace the first year core curriculum being concurrently proposed for the Institute as a whole. The latter resolution

---

17 The design staff, ca. 1942, MIT Archives, AC 400, Box 2, Folder 1.


20 Architectural Design Staff to Karl Compton, 11 December 1942, MIT Archives, AC 4, Box 16, Folder 9, p.11.

would achieve the desired “breakdown of the isolation of [the architecture school] from the
Institute.” In the first year of Kepes’s appointment, accordingly, the architecture curriculum
featured a first-year core of Chemistry, Physics, Calculus, and Descriptive Geometry, in addition
to English, Military Science, and Drawing; followed by a heavy course-load in mechanical
engineering, and required electives in history, urban sociology, economics, psychology, labor
relations, history of thought, Western literature, international relations, fine arts, and music in the
subsequent four years. In “almost completely de-professionalizing” the core, architectural
education was aligned to the transitions taking place within MIT as a whole. The architectural
student, on par with the science and engineering student, was provided with what the design staff
considered to be “a broad general education” and “a certain mastery of the fundamentals of the
larger fields of human knowledge,” informing him “with the sense that all fields are related by a
common basis of understanding.” Drawing, “an all-important means of expression” for the
architect, was merged into this pattern.

Drawing belonged among the “fundamental” disciplines of the core because, framed as a
basic technique or method, it was understood to be a specifically architectural expression of the
new instrumental knowledge advanced at the Institute. As the Curriculum Committee observed,
method should take precedence over information in the education of the architect due to the rapid
obsolescence of technical expertise with ongoing technological innovation. That meant: “more

22 Architectural Design Staff to Karl Compton, 2.
24 Architectural Design Staff to Karl Compton, 2-3.
25 Lawrence B. Anderson, et al., Preliminary Report of Curriculum Committee, 1942, MIT Archives, AC 4, Box 16,
Folder 9, pp.6-7.
26 Architectural Design Staff to Karl Compton, 2-3.
science, less technology”—a position echoed across the board at MIT in the postwar period.\(^\text{27}\)

The persistence of this formulation may be witnessed, for example, in a 1965 observation by Stratton that engineering calls for “such an understanding of fundamentals as to resist obsolescence… [a] requirement of commanding knowledge and adaptability to change and innovation… –in sum, a human perspective.”\(^\text{28}\)

In architecture, drawing was an expression of design method as organized thought process. “[D]rawings,” wrote the design staff, “like words, are only an expression of thought… .” An architect’s drawings were not to be conceived as “pictorial” end-products of design activity, but rather made “during the evolution of a design… [as] illustrations to logical arguments… [and aids to the architect in] the outline of his research and his reasoning.”\(^\text{29}\) “[U]npretentious diagrams which the architect makes in search of a general directive,” drawings were indexes of a cognitive and research-based design process.\(^\text{30}\)

Skill in drawing was accordingly conceived, in the words of John Burchard, as a “tool” or a “means to an end,” comparable to the physicist’s laboratory practice. As such, it was a metonym for the architectural design process in general, given that the latter was defined as “the ability to analyze the requirements of a proposed building and to synthesize them into a smoothly working plan.”\(^\text{31}\)

\(^\text{27}\) “A frequent objection,” wrote the design staff, “made to teaching an architect anything about mechanical equipment is that these techniques are in process of rapid development and his knowledge will soon be out of date, or likely is even at the moment of instruction. [Therefore] a thorough grounding in science provides the basis for understanding what any piece of equipment, choice of material, or method of assembly can do or can not do in a building, even though the situation may be encountered for the first time in the field.” Anderson, et.al., Preliminary Report, 9.

\(^\text{28}\) Julius Stratton, “The Humanities in Professional Education,” An address given on the occasion of the inauguration of Dr. H.G. Stever as President of the Carnegie Institute of Technology, October 21, 1965, Science and the Educated Man, 130.

\(^\text{29}\) Architectural Design Staff to Karl Compton, 7.

\(^\text{30}\) Ibid.

\(^\text{31}\) John E. Burchard to James R. Killian, Jr., 6 January 1942, MIT Archives, AC 400, Box 2, Folder 1, p.3. John Ely Burchard, Director of the Albert Farwell Bemis Foundation, an independent division within MIT dedicated to research on the building industry, had a degree in architectural engineering. Although on leave from MIT during WWII, Burchard remained involved in curricular reform at the School of Architecture, as evidenced by this letter of
Both architectural design and drawing as its graphic record, in mutually reinforcing fashion, were defined as cognitive techniques at the juncture of general or fundamental knowledge and instrumental methodology.\(^3^2\)

Kepes was hired to teach this model of drawing, administratively expressed in the filtering of the component techniques of Beaux-Arts rendering (Shades and Shadows, Perspective) into a single unit of Freehand Drawing, threaded through the five-year curriculum. He was to replace the categorically Beaux-Arts approach of previous instructor Johan Selmer-Larsen: “basic figure construction and anatomy; rapid drawing direction from the human figure,” as the 1946 catalogue advertised.\(^3^3\) The term “drawing” itself, however, was clearly inadequate to the visual technology of knowledge Kepes’s contribution was to embody. Already in his appointment correspondence with Kepes, architecture dean William Wurster referred to the subject at issue as “‘drawing’ . . . for lack of a more complete word,” and expressed his eagerness to “confer with [Kepes] about photography, typography, etc., which would replace some of the courses as [currently] described.”\(^3^4\) By 1948, Kepes was teaching a five-term sequence, response to the proposals of the curriculum committee he addressed to Killian, the acting president of MIT during the war. In 1948, Burchard would become the first dean of the School of Humanities and Social Science. As discussed in the previous chapter, he was also a member of the American Academy of the Arts and Sciences, as well as its president from 1954 to 1957.

\(^3^2\) By 1962, the cognitive conception of design was articulated even more forcefully at MIT. “Architectural education,” wrote the faculty, “tends to emphasize the acquisition of insights and skills more than the creation of new knowledge. . . . The aims of [architectural design courses] are: a.) to foster a capacity for observation, understanding, analysis, synthesis and creation; b.) to develop a mental discipline to face and solve an architectural problem. The design courses are essentially laboratory courses where problems are presented to the students. The solution of these problems are [sic] not a mechanical or mathematical process but rather a process of selection; therefore the question of a mental discipline becomes of prime importance in the education of a designer.” The Professional Curriculum in Architecture, 7 December 1962, MIT Archives, AC 134, box 13, folder IV, pp. 1, 4.


\(^3^4\) William Wurster to Gyorgy Kepes, 30 August 1945; William Wurster to Gyorgy Kepes, 14 July 1945, MIT Archives, AC 4, Box 241, Folder 10.
consisting of a rotating set of subjects, which included Visual Fundamentals, Structure of the City, Form and Design, Light and Color, Graphic Presentation, Painting, and Advanced Visual Design.\textsuperscript{35}

In hiring Kepes, Wurster clearly had in mind the educational program encapsulated in \textit{Language of Vision}, as the publication of the book had brought Kepes “into certain national prominence.”\textsuperscript{36} It may be recalled from the previous chapter, \textit{Language of Vision} advanced a philosophy of the image as both index and instrument of a visual technology of knowledge, oriented to training “the creative imagination for positive social action.”\textsuperscript{37} At MIT, Kepes proceeded to adapt his platform to the concrete task of educating the professional architect according to the precepts of the new curricular program. As a number of preparatory teaching notes made by Kepes indicate, he approached this task by positioning the design process and its outcome as a function of the social subjectivity envisioned by general education philosophy, and his own technology of vision as vital to the promotion of that subjectivity. In an undated note for a speech, Kepes summarized his activities at MIT as driven by a “dedication to fundamentals—faculties, sensibilities—and not professional… vocational shortcuts.”\textsuperscript{38} “Architecture,” he concluded in a teaching note, “is made of architects—their vision, [their] ability to form.”\textsuperscript{39} Thus aligning his program with the general education goal of cultivating overall cognitive faculties, rather than specific vocational skills, Kepes proceeded to defend the need for such training in

\textsuperscript{35} See, for example, \textit{Massachusetts Institute of Technology Bulletin, Catalogue Issue} 81, No.4 (June 1946) - 91, No. 6 (July 1956).


\textsuperscript{37} Kepes, \textit{Language of Vision}, 14.

\textsuperscript{38} [Gyorgy Kepes,] handwritten undated note, Kepes Papers, Reel 5312, frame 867.

\textsuperscript{39} [Gyorgy Kepes,] handwritten undated note, Kepes Papers, Reel 5312, frame 461.
architecture. “Architecture is in [a] blind alley,” he noted by way of introducing his sequence of courses. Beaux-Arts methodology had been superseded by a focus on “economy” and “material,” identified with “functionalism,” reflecting a society defined by a “quantitative approach,” and a “survival [of the] fittest” mentality. Thus a one-sided approach had been replaced by another equally limited one. In this context, the visual arts, Kepes averred, become “an important discipline in [the] architect’s education” inasmuch as they are able to provide a “sense of organic relatedness,” integrating the “structural, biological, technical, … psychological, … sociological [and] intellectual… frames of reference.” In other words, Kepes’s visual education program would respond to the goals of MIT curricular reform by making the professional architect a “full man sensitive to issues of [the] present.”

I have argued here that *Language of Vision* was not a primer for training the visual arts professional. While his target was, instead, a generalized cognitive-perceptual social subject, Kepes nevertheless assigned a privileged role in its cultivation to artistic vision, broadly conceived. Professionals of the image – “painters, sculptors…, photographers, advertising designers”—were invested with the task of “teach[ing] to see” the rest of society. The MIT architect, positioned within a newly de-professionalized knowledge regime, was perhaps an ideal mediator between the general social and the specific artistic subjectivity. “Today,” Kepes remarked in another teaching note, “the needs of the eye, the human spirit, are not [fulfilled], mainly because of [the] lack of visual sensibilities. The education of architects must, therefore, include the education of the eye.” Kepes’s strategy focused on articulating the products of

---


42 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, Reel 5312, frame 446.
architectural design as functions of their psycho-perceptual reception, and the architectural
design process as a function of the architect’s ability to mediate in that reception. “[T]he goal” of
his teaching program, he posited, was “to synchronize physical structure and visual structure.”
Judging by the content of his teaching notes, Kepes’s courses consisted in the detailed
elaboration of that principle through the systematic translation of spatial properties in terms of
perceptual experience. For example, a Visual Fundamentals class dedicated to the analysis of
“expansion and contraction of color” focused on the exploration of the general rule that “light
rooms appear larger [and] wider than dark rooms.” Kepes then asked his students
to “study the effect of color on the relative illusory size of a closed and an open space,” through a
series of graphic exercises. Another class dedicated to the study of color effects involved
students in working to “induce consciously [the perception of] border contrast” by means of
making models of rooms with a single window covered by a color filter and photographing these
“against strong light.”

Visual Fundamentals were enumerated in a 1946 course catalogue as “point, line, shape,
value, form, texture,” described in Language of Vision as constituent elements of perceptual
“event[s].” “The picture-surface,” Kepes wrote in the latter text, “becomes a vital spatial world,
not only in the sense that the spatial forces are acting on it—moving, falling and circulating—but

43 [Gyorgy Kepes,] handwritten undated note, Kepes Papers, Reel 5312, frame 455. Punctuation added.
Papers, Reel 5312, frame 771.
Papers, Reel 5312, frame 760.
also in the sense that between these movements the field itself is charged with action.**** In other words, Kepes understood such graphic units or qualities to be indexes of the perceiving mind’s dynamic “creative act.”** The same concept would now be extended outward from the “picture-surface” to the spatial environment. On the most basic level, “graphic elements”—such as “point, line, shape”—could be analogically linked to structural elements—such as “trusses, beams, arches, cantilever[s]”—understood “in a visual plastic illusory sense.”** But Kepes’s larger point was to translate those perceptual properties of inhabited space as psycho-cognitive attributes of the socially-situated subject. “Every visual structure,” he explained, “is more than [an imprint] of the outside… material environment.

Each visual perception… stands for corresponding human attitudes.

*Extension*—is lived as [a] need to extend beyond individual enclosure, [as a] search for connectedness….

*Figure-shape*—stands for cohesion of individual completeness….

*Solidity*—also for inner cohesion, strength, vigor, inner fiber, security, integrity.

*Gravity*—bondage to nature….

*Motion*—growth, flexibility, contact, variety, enrichment, change.

*Rest*—harmony, repose, recovery of strength, etc.

With disciplined vision, one [derives] orderliness from the visual ordering of the surroundings. The greater the ability to see intensely, the greater the possibility to make [one’s] life richer [and] stronger.**

The identity between the physical and the psycho-cognitive environment that Kepes focused on articulating at MIT was essential to the translation of professional skill into social value in training the citizen-architect. In addition to his teaching program, Kepes engaged in two long-

---

49 Ibid., 29.

50 Ibid., 13.


term projects that serve as fine illustrations of that relationship: his collaborative research with MIT planning professor Kevin Lynch on the perceptual form of the city, started in 1954; and his creative exploration of light, started at MIT around 1947. The history of the former would require more space than can be given here, so I will briefly focus on the latter.

In 1947, as Kepes would later report, he was commissioned by the Sylvania Electric Company to “prepare some comments on the architectural role of illumination.”\(^53\) He developed a proposal for a “kinetic light space,” which would respond to the “capacity of the visual sense [to be] fed by renewed excitation,” and to the perceived need for an “integration of illumination with the total environment.” The installation was to set a wide range of animated light sources within a given spatial volume, creating “a luminous envelope that had no stationary dimension but still revealed a persistent space pattern as it fluctuated, pulsated, opened, and closed.”\(^54\) Although Kepes never carried out the design, a graphic outline of a very similar proposal for “a building in which all facts connected with light and space could be demonstrated” was published in a 1951 article.\(^55\) A cross between a didactic exhibition and an architectural structure—or, as the introductory text (not written by Kepes) put it, “not… an exhibition superimposed on an architectural framework, but… an architectural layout which itself is the exhibited material”—the installation would illustrate the perceptual effects of light and color through “distorted planes,… undulating walls, varied textures, and sculpture.”\(^56\) (Figure 47) Diagrammatic layouts provided by Kepes demonstrate that he conceived the installation as both a sensory and an educational journey, dissolving the physical space into a series of perceptual experiences and


\(^{54}\) Ibid., 25, 26.

\(^{55}\) A.D., “Kepes Looks at Light; Sees Spots,” *Interiors* 110 (January 1951): 78.

\(^{56}\) Ibid.
then explaining their sources. (Figure 48) The idea of linking sensory immersion and conceptual understanding would become a central feature of Kepes’s light projects.

In 1953, Kepes’s independent exploration of the perceptual qualities of light in the environment was matched at the School of Architecture by the establishment of a Laboratory of Lighting Design, sponsored by a grant from the F. W. Wakefield Brass Company. The laboratory was inaugurated with a program to study “all factors of environment which contribute to the process of seeing,” including “the effects of various distributions, quantities and qualities of light, heat, sound [and] color” and “various principles of producing and controlling daylight and artificial light.”57 In sponsoring the study center at the School of Architecture, Wakefield understood architecture to be one of the research fields “which may affect the seeing process,” among others like psychology, physiology, ophthalmology and optometrics.58 MIT architecture professor Lawrence Anderson, who spearheaded the project, fully agreed that research into the psycho-physiological properties of visual reception was a properly architectural domain. “Since,” he wrote, “the architect conceives the environment…, he bears the main responsibility for the success or failure of lighting. The project should therefore start from an architectural base, and aim at influencing architectural concepts in the direction of better seeing.”59 This might as well have been a summary of Kepes’s own agenda in the area of light studies. Although his involvement in the laboratory appears to have been tangential, Kepes would certainly have been

57 In Brief: A Digest of Recent Releases from the MIT News Service, 30 September 1953, MIT Archives, AC 400, box 3, folder: Study of Lighting Committee.


59 Lawrence Anderson to Professor Beckwith and Dean Belluschi, interoffice memo, 18 February 1952, MIT Archives, AC 400, box 3, folder: Study of Lighting Committee, p.1.
aware of its activities.60 The laboratory’s inaugural project involved the construction of an “experimental box,” intended to simulate a typical office cubicle, where responses of test subjects performing various tasks would be measured against controlled changes in lighting conditions.61 (Figure 49) The notable similarity between this experimental set-up recorded in documentary photographs and Kepes’s sketches for student exercises involving model rooms or “cubes” may suggest a pattern of influence, or simply the confluence between Kepes’s own program and concurrent notions of design at the School of Architecture as a whole.62

In 1965, Kepes succeeded in realizing the immersive sensory and educational light environment he had first conceived in 1947, as an exhibition on Light as a Creative Medium, held at Harvard’s Carpenter Center for the Visual Arts. The exhibit, Kepes wrote in a proposal draft, would “show the basic contributions that light and color make to our understanding of the visual environment.”63 Juxtaposing historical and contemporary works of art, artifacts, and student work from Kepes’s courses at MIT and the Art Institute of Chicago, the exhibition was a carefully choreographed trajectory through various fields of sensory experience, during which the visitor—or “receiver,” as Kepes had it—would become aware of his or her own role as one of the constitutive “attributes” of the environment. “In order to have any awareness of space,” Kepes wrote,

60 “This is the beginning,” Anderson hoped, “of work in lighting that will eventually embrace the Kepes-Lynch orbit, though it will probably begin with more limited goals.” L. [Lawrence] B. Anderson to Burnham Kelly, interoffice memo, 13 March 1952, MIT Archives, AC 400, box 3, folder: Study of Lighting Committee. Kepes may have participated in a seminar on “vision, brightness, and design” organized under the auspices of the Lighting Design Laboratory. See “Vision, Brightness, and Design: Tentative Schedule of Seminar,” 23-24 September 1953, MIT Archives, AC 400, box 3, folder: Study of Lighting Committee, p.2.


63 [Gyorgy Kepes], Light as a Creative Medium, draft, ca. 1964, n.p., Kepes Papers, Reel 5314, frame 955.
there must be a light source, an object to intercept the beams of light and a receiver to register the image. The exhibition must simultaneously work with [those] three attributes of ‘visibility.’ The receiver will necessarily be man and the human eye… .

Working directly on a sketch of the Carpenter Center gallery floor-plan, Kepes diagrammed his installation design as a “hypothetical walk” through a succession of zones delimited according to speed of movement, sight lines and focus points, and “degree of spectator involvement.” (Figure 50) The viewer was to be guided on this journey by a series of “guide posts,” introducing him to a “basic vocabulary” of light and color effects—such as reflection, color contrasts and complementarities, and the effects of surface and texture—aiding in the ultimate transformation of sensory experience into conceptual understanding. “Spectator enters,” Kepes narrated,

and straight ahead is [the] introductory ‘basic vocabulary’ room. … Beyond, but still straight ahead [there] is [an] eye-catching focal point—perhaps a painting borrowed from the Fogg [Museum]. [A] calm, conventional beginning, at first appearance. But, though spectator may not be aware of it, already light is effecting [sic] his appreciation of the space. First ‘room’ should be quiet so people will go slowly through it. Later, around the corner, the light and color interaction area will pulsate and dazzle the spectator. … To reinforce the first simple demonstrations, a painting which is subsequently analyzed for texture, surface, color area, etc., is displayed. … Moving from close scrutiny of single objects the spectator is drawn ahead by a plan, a map of a larger environment. … Transition to presentation of analysis of vision or the eye… . The physiological and symbolic demonstrations which follow… wind up the exhibition.

In summary, “enter ignorant observer,” Kepes telegraphed on the final sketch of his schematic design sequence, “educated observer exit.” (Figure 51) This would also be a local expression of the general principle Kepes never tired of illustrating: perception “begins with an event in space, and ends with an event in our brain.”

64 Ibid. Emphasis in the original.
65 Ibid.
66 Ibid.
67 Ibid.
Installation photographs published in the exhibition catalogue convey some sense of how this plan worked out. (Figure 52) It was important to convey at least in some areas of the show an experience of a specifically urban environment—“a larger environment,” Kepes wrote, “which confronts [the spectator] as a small scale model of a city-scape through which he can walk.”69 The culmination of the show, the point of the most “intense involvement,” was situated next to the fully glazed exterior wall, where the visitor could catch glimpses of Cambridge city life among exhibits placed directly on the glass. (Figure 53) The exhibition’s larger goal was to demonstrate the potential for “a stupendous new civic art” in the “creative management of light” on the urban scale, which would “hol[d] out to all, both as individuals and as members of a society, [a] sense of harmony with life.”70 Ultimately, light was for Kepes a metaphor of unity between the perceptual and the material, the subjective and the objective, at the heart of the idea of architecture and its social instrumentality he advanced at MIT. Light, he wrote in 1967, “is not a substance; it is energy. Without boundaries, it molds, shapes, clarifies, and joins forms and spaces, connecting perceiver and perceived and bringing them to vital coherence.”71 Not surprisingly, he saw an aesthetic expression of this principle more readily in contemporary glazed curtain-wall buildings, which “have opened themselves up to the flow of light,” than he did in contemporary artworks.72 This merger of the psycho-perceptual and the material environment would be, for Kepes, the manifestation of a unified contemporary social subjectivity.

69 Ibid.


71 Kepes, “Kinetic Light as a Creative Medium,” 32.

72 “Hardly any of our sensitive creative talents [in the arts],” he wrote, “have summoned the resolution to face the more luminous tasks of the world. … Our new buildings, however, have opened themselves up to the flow of light, showing us marvelous new qualities of space.” Kepes, *Light as a Creative Medium*, 2.
in the “interdependence principle of the modern scientific urban-industrial world.” The aesthetic reflection of this social subjectivity, in turn, would invest design practice with the deferred social instrumentality defined as the model of MIT production as a whole—the projection of socially fruitful potential. “[A]s citizens and practicing members of this society,” Kepes wrote, “we are committed to the search for public forms that express our collective values and symbolize our shared needs and common aspirations.” His exhibition, therefore, was to be understood as a “prolegomenon,” a demonstration of “enormous promise,” whose “major tasks lie ahead.” “Suggestive rather than definitive, and tentative rather than conclusive,” Kepes emphasized, the installation was intended “to heighten the awareness… and thus stimulate creative thinking.”

5.2 INSTRUMENTAL COLLECTIVITIES OF KNOWLEDGE

The specifically architectural elaboration of instrumentality was, however, only a small part of Kepes’s overall activities at MIT. He concurrently developed other practices of “interdependence,” in turn influenced by another set of conditions he encountered at the Institute. MIT’s postwar educational philosophy was a claim to institutional status on par with established major universities, but it was equally motivated by the dramatic impact made by the influx of

---

73 Kepes, “Kinetic Light as a Creative Medium,” 32.
74 Ibid.
75 Kepes, Light as a Creative Medium, 2, 5.
76 [Gyorgy Kepes], untitled draft, p. 2, Kepes Papers, Reel 5314.
defense funding on campus—the largest share of any US university in the postwar period. MIT’s ambitions for a new profile were both prompted and justified by its ballooning faculty, student body, and physical plant. At the same time, the model of instrumental knowledge linking “techniques” and “fundamentals” advanced at the Institute also described new graduate research structures. Defense R&D spending privileged approaches that blurred boundaries among academic disciplines and between basic and applied research. Writing during the Lewis Committee deliberations, Killian linked its activities to concurrent administrative experimentation with so-called “centers of research” intended to accommodate “those interests which reach outside the traditional departmental boundary lines and require the cooperation of the specialists from several disciplines.” Independent organizations jointly operated by two or more departments within the Institute, those centers were a concrete manifestation of “integration” in their mobilization of disparate disciplinary representatives “into a cooperative whole” and their “full coordination” of the functions of research and education.

The inaugural facilities of this kind at MIT were the Instrumentation Laboratory, established in 1934 and working after 1945 on inertial guidance systems for the military, and the Research Laboratory of Electronics (RLE), which grew out of the wartime “Rad Lab” dedicated

---

77 In the academic year 1944-45, MIT’s annual budget was $44,354,800, or nearly fourteen times the 1938-39 figure, with $44,354,000 of it derived from sponsored research monies received ($39,970,900 was budgeted for defense research, with the rest used for general operations, a pattern that would persist into the postwar period). By 1969-70, sponsored research funds stood at $171,294,000 or 51% of the university’s total budget. Throughout this postwar period, MIT was the largest university defense contractor in the country. See John Burchard, *Q.E.D.: M.I.T. in World War II* (Cambridge, Mass.: the Technology Press, 1948), 8; Nelkin, *The University and Military Research*, 18; Stuart W. Leslie, *The Cold War and American Science: the Military-Industrial-Academic Complex at M.I.T. and Stanford* (New York: Columbia University Press, 1993).


80 Ibid.
to developing and producing defense radar applications. Already by 1948 there were five similar “centers” at MIT, and such interdisciplinary consolidations continued to proliferate. In line with the “integral plan,” the centers were not limited to the natural sciences. The newly founded School of Humanities and Social Studies immediately engaged in classified interdisciplinary research, and in 1951, only a year after its inauguration, produced a new Center for International Studies, increasing the new School’s prestige and funding. Architecture was not left behind. The Research Center for Group Dynamics, established at the Institute under the direction of social psychologist Kurt Lewin in 1948, was affiliated with the Albert Farwell Bemis Foundation, transferred under the direct administration of the School of Architecture the same year. In 1959, the Harvard-MIT Joint Center for Urban Studies became the most prominent MIT example of the “research center” model as applied to architecture. Kepes’s collaborative research with Lynch, started in 1954 with a Rockefeller Foundation grant, became an inaugural project of the Joint Center. In 1967, the Center for Advanced Visual Studies would extend this model to the visual arts at MIT. The Center’s roots, however, can be discerned in Kepes’s next (and final) major statement of philosophy – *The New Landscape in Art and Science* of 1956.

Arriving at MIT in 1946, Kepes would later recall, he discovered “a new cosmology [opened up by the sciences], a new broad vista of the world that for... artists was not given.” This other-than-human landscape composed of phenomena beyond the threshold of “sense experience” revealed through the aid of advanced imaging technologies—“invisible viruses,

---


atoms, mesons, protons, cosmic rays, supersonic waves—would inspire a significant new departure in the “language of vision.” Collected in large part during the period between 1947 and 1952, when Kepes reportedly “went like a bulldog who never gives up from one laboratory to the other” in the burgeoning complex of MIT’s “research centers,” these photographic records combined to form the central visual and conceptual argument of The New Landscape. At once a definitive theoretical statement and a practical experiment in the production of instrumental knowledge, the book was articulated around a matrix composed of the visual products of the new knowledge economy crystallizing at the Institute.

By his own admission, Kepes’s interest in “images from the scientific world” actually pre-dated his arrival at MIT. His first reported encounter occurred in Weimar-era Berlin when a metallurgist friend introduced him to photomicrographs taken in his laboratory. The role of scientific images like the x-ray and the photomicrograph in the work of Moholy-Nagy is well-known, and Kepes must have shared the latter’s enthusiasm for a technologically-mediated “new vision” presumably accessed through such imagery. Rediscovered at MIT, however, was an entirely new generation of scientific images, entailing a conceptual shift in approach. For Moholy, the microphotograph signified an expansion of time achieved in space through technological means—“our substitute for the longer period of time that primitive man could devote to observation.” Analogously, its opposite, the aerial view or “macrophotograph,” represented a compression of space in time. Such images, therefore, were indexes of an

---

86 Ibid., 7.
existing, natural-historical—or bio-technological—condition of space-time. *The New Landscape* also had its share of images of the new “scale,” from the micro to the macro; but they were shuffled in with others, like a spark photograph of model projectiles in flight, a high-speed photograph of a falling drop of water, or photo-elasticity records of the effects of shear forces. (Figure 54) Such images were records of experimental manipulations of material conditions, enabled by imaging devices developed for the purpose of tracing the effects of processes unfolding in time.

The products of the oscilloscope, stroboscope, and interferometer, the images on radar screens, radiographs, and spectrographs, were diagrams of *events*, rather than descriptions of “things” or “properties.” “The path of a cosmic ray,” wrote Kepes, “the growth of a crystal, the stroboscopic record of a raindrop are meaningful only as interrelations. We are compelled to interpret them as intersections of events.”88 Because, in practice, these images functioned as experimental data in research and development applications, the “events” they chronicled were exposed to vision not as preexisting natural conditions but as outcomes of interventions, at once purposeful and open-ended. Inasmuch as they necessarily showed nature as a medium of transformation and manipulation, their content was both operative and descriptive—a point emphasized throughout the book: “The patterns of structure are also patterns of action!”89 Here was an empirical parallel to the cognitive intervention in the material world that Kepes had earlier identified with the process of perception, when he described the mind’s creative act

---

88 Kepes, *New Landscape*, 206. The cited passage comes immediately after the following invocation of the “new vision,” testifying to the distance Kepes has traveled by this point from his mentor’s original conception: “Leading us away from the system of fixed things, and toward the system of spatio-temporal patterns, the newly revealed visible world brings us to the threshold of a new vision. We cannot relate its seen patterns to our familiar experiences of things that we know and touch and smell.” Moholy-Nagy never goes as far as to identify spatio-temporal relationships as “intersections of events,” which implies the assignment of agency to material.

89 Ibid., 204.
transforming visual data into “vital spatial event[s].”  

But the scientific photographs now collected by Kepes register most directly as epistemological traces of the blurring of pure and applied research carried out at the Institute.

Following his initial encounter with photomicrographs in the 1930s, Kepes invented a technique he called “photo-drawing” or “photo-painting.” (Figure 55) He would later offer this retrospective assessment of his early photographic work: “When I did those photograms, I almost tried to imitate scientific data, or scientific images, without having a justification.” Kepes would place an ink drop on a glass plate and press down on top of it with another plate, creating “really beautiful patterns, which [sic] were really an expression of the logic of nature.” In those patterns Kepes now saw the same “inevitability of texture” revealed in photomicrographs and electromicrographs. Before putting the plate into a negative enlarger to produce the final photogram, he would draw directly on the ink pattern to nudge it towards abstract or figurative forms in what he described as a “dialectical process, a dialogue with the material.” Through this process, a “hidden [natural] image” exposed through the force of pressure between the two glass plates would emerge invested with signification, to reveal “a hidden symbolic image.” Kepes would thus act as the “midwife” of the symbolic image, the facilitator for the emergence within these records of natural processes of what his interviewer perceptively called a “latent moral


91 The technique described by Kepes, combining drawing and photography, has been identified as the cliché-verre technique, dating to the nineteenth century. In cliché-verre, a hand-rendered image on a transparent matrix is replicated by light projection onto a photosensitive surface. For a description and nineteenth and twentieth-century examples, see Elizabeth Glassman and Marilyn Symmes, eds., Cliché-Verre: Hand Drawn, Light Printed (Detroit: Detroit Institute of the Arts, 1980). For the link between Kepes’s “photo-drawing” and cliché-verre, see Finch, “Languages of Vision,” 150-151.

92 Kepes in “Sermon for Tranquility,” 8.
condition.” “It’s not really me who is doing it,” Kepes quipped, “I’m just the middleman.”

The scientific images of natural processes set in motion through experimental manipulation, gathered by Kepes in *The New Landscape*, shared with his own photograms this constitutive mixture of indexicality and instrumentality.

Kepes had used the metaphor of the artist as middleman or “midwife” in one other prior context. Writing of artists affiliated with Dada and Surrealism in *Language of Vision*, he had described their practices as “reduced only to a sheer assistance of chance happenings.” The artist, Kepes had explained,

acts the role of the midwife. He only assists at the birth of a living form that grows from deeper strata than his conscious efforts could reach. He invents techniques that give the fewest obstacles to the free flow of organic formation.94

Notably, he reproduced a photomicrograph as illustration to this part of the text, juxtaposing it with a Hans Arp cutout, in the only identified example of the former medium included in the book.95 (Figure 56) When Kepes later spoke of his own art installations involving light he similarly emphasized the “acceptance of randomness” and the “creative invocation of chance events” as crucial design elements.96 Now, however, he also insisted on the presence of conscious control—an imposed and not simply found pattern—as an equally important counterweight. For example, his *Kinetic Light Mural* of 1959, a site-specific design for the New York offices of KLM Royal Dutch Airlines, consisted of an aluminum screen with “some sixty thousand random perforations,” behind which were placed multiple artificial light sources

---

93 Ibid., 8.


95 An image of a magnetic field on page 28 might also be a photomicrograph, but it is not identified as such.

controlled by switching devices.\textsuperscript{97} (Figure 57) “The purpose,” Kepes wrote, “was to create… a fluid, luminous pattern with random changes, alive through the continuous transformation of color, intensity, direction, and pattern.”\textsuperscript{98} Designed to invoke “the visual richness of the city seen from the air by night,”\textsuperscript{99} the mural employed “random, chance movement as against a rhythm of the mechanical environment.”\textsuperscript{100} Interstitially situated between natural contingency and human purpose, the mural too was an indexical-instrumental image. In such expressions of an intermediary condition, Kepes sought to locate the necessary balance of freedom and control to which he would in other contexts give a more explicitly political dimension.\textsuperscript{101} “[T]he freedom,” he wrote, “that comes from the spontaneity of chance events that we so much appreciate in the forms of nature… could become [a] valuable guid[e] for reshaping our ever more complex inner and outer world. [The task, however, is to] evoke experiences with qualities both of life and of order….”\textsuperscript{102}

If Kepes identified his creative persona as that of the “middleman” in the sense outlined above, it was also a fitting description of the role he sought to occupy within the new knowledge regime advanced at the Institute. The task of \textit{The New Landscape}, Kepes explained, was to mobilize a “pattern-seeing” that would enable one to “trace the interplay of processes in the


\textsuperscript{98} Ibid., 79.

\textsuperscript{99} Ibid., 79.

\textsuperscript{100} Kepes also continued to associate this principle with the work of Arp, among others. “Randomness,” he wrote in 1967, “was the goal of a generation of artists who tried to put into their images of movement the freedom and spontaneity of nature: the paintings of Arp, Miro, and Pollock evoke man and nature’s common rhythm.” Kepes, \textit{Kinetic Light as a Creative Medium}, 35.

\textsuperscript{101} See discussion of Kepes’s reflections on democracy as a social organization that balances order and freedom in the previous chapter of this dissertation.

\textsuperscript{102} Kepes, \textit{Kinetic Light as a Creative Medium}, 29.
Kepes’s notion of "pattern," as may be recalled from the previous chapter’s discussion, signaled the cognitive basis of perception. Whereas *Language of Vision* had not stressed the link between vision and knowledge, it was stated in no uncertain terms already in the second paragraph of *The New Landscape*: "vision is itself a mode of thinking." The "pattern" concept now served to translate into perceptual terms what Kepes understood to be the intellectual condition of a contemporary world marked by "rapid expansion of knowledge and technical development." This world of knowledge was a result of scientific production that specifically merged instrumentality and indexicality. Science has produced a "vast and constantly expanding armory" of "powerful tools and ideas with which we may either create or destroy," Kepes wrote, which were at the same time "resources for new sights and sounds, new tastes and textures"—perceptual markers of an already existing "new landscape."

It is not surprising that the MIT environment would fuel Kepes’s interest in the cognitive investment of the image, nor that it would direct his attention to visual documents of scientific research as ideal manifestations of the image as bearer of potential knowledge. The postwar period witnessed a wide-spread use of images as aides in the scientific laboratory in general. Some of the very same stroboscopic photographs that inspired Kepes’s awe as examples of "tools and ideas" for creation and destruction figured as sources of more targeted "mystery" in a regular "Strobe Probe" column of MIT’s *Technology Review* journal. Here, a split-second image

---


104 Ibid., 17.

105 Ibid., 19.

106 Ibid., 19.

of a bullet’s impact, for example, could be reproduced as a conceptual problem for the student to solve by identifying the physical processes it documented.\(^{108}\) (Figure 58) Poetically translating the logic motivating such exercises, Kepes too identified the scientific image as both a new knowledge product and a new tool for the education of vision.

The scientific image, however, was not the only type of instrument collected in the book. *The New Landscape* interspersed a compendium of scientific photographs with reproductions of works of art from different cultures and eras, as well as short textual quotations from various sources, and essays by invited contributors—all set within the framework of a master narrative, written by Kepes himself. The “method” driving this presentation of material, Kepes explained, was “a kind of laboratory experiment [that]

![fuses visual images and verbal communication in a common structure… [T]he visual and verbal statements neither parallel one another in exact correspondence nor follow one another in a strict causal chain. They complement one another in an interwoven sequence. The structure builds, then, as the observer proceeds from one experience to another, and finally a new aspect of perception is outlined.\(^{109}\)

The book functioned, if it may be so described, as a collage of instruments and agents, a subjects-objects collectivity within which “pattern-seeing” would spring forth from multiple sources, including the viewer’s own active participation. (Figure 59) As such, it was a precursor to the strategy Kepes would later use in the *Light as a Creative Medium* installation. “The exhibition,” he would write in that context, “can best be described as a projected picture-book.”\(^{110}\) Its “technique,” he continued,

---


\(^{109}\) Kepes, *New Landscape*, 17.

\(^{110}\) Gyorgy Kepes, untitled draft, Kepes Papers, AAA, Reel 5314.
is what we call ‘collage,’ i.e. various works taken out of their context and juxtaposed. Due to this juxtaposition, the beholder is compelled to fill in the missing links—this process should lead them to a different level of awareness… .111

In both the book and the exhibition, “pattern-seeing” had to be conceived as a collaborative enterprise. Too much control, Kepes wrote of the exhibition, and the project would not inspire “involvement,” becoming instead “an exhibition of a more pedantic type where everything is spelled out.”112 Ceding total authorial control in another effort to balance chance with purpose, Kepes again tried to “midwife” the process. This strategy of facilitating the formation of instrumental collectivities of vision and knowledge is traceable in every major endeavor he would pursue from this point forward.113

In 1956, Kepes started a series of themed interdisciplinary seminars at MIT that brought together specialists in the arts and the sciences to discuss such issues as “structure” or “the man-made object.” The intellectual products of those seminars were gathered in 1965-66 into a six-volume Vision and Value series of books, published by George Braziller.114 The books modified the *New Landscape* model, consisting of more conventional anthologies of essays by seminar participants, augmented with short introductions by Kepes, as well as consolidated segments of scientific and artistic images titled “visual documents.” In 1960, Kepes was invited to edit an issue of *Daedalus* on “The Visual Arts Today,” which he executed again much on the same

---

111 [Gyorgy Kepes], untitled draft, Kepes Papers, AAA, Reel 5312, frame 799.

112 Ibid.

113 The continuity between subjects and objects, I believe, was essential to Kepes’s enterprise, and should be emphasized. The philosopher of science Bruno Latour has defined scientific subjects as hybrid natural-cultural “collectives… of humans and nonhumans.” Like Latour’s “collectives,” Kepes’s collectivities were microcosms of social spaces constructed in the exercise of instrumental knowledge, premised on the blurring of the normative and the descriptive. His solution of the instrumental-indexical image, therefore, was likewise both a representation of and a catalyst for collectivities situated at the crossroads of knowledge production and community formation. See Bruno Latour, *We Have Never Been Modern* (New York: Harvester Wheatsheaf, 1993), 4.

114 The full series included: *Education of Vision; Structure in Art and in Science; The Nature and Art of Motion; Module, Proportion, Symmetry, Rhythm; The Man-Made Object; Sign, Image, Symbol.*
model. *Education of Vision*, one of the Vision and Value books, substituted the “visual documents” section with a documentation of student work from MIT visual design courses—theyir remarkable similarity to scientific images qualified these explorations of fledgling MIT architects and scientists to enter the proliferating knowledge collectivities orchestrated by Kepes. (Figure 60) By 1965, he was advancing plans for an “Expanded Visual Arts Program” at MIT, to be jump-started through a series of seminars intended to “produce new patterns [of] concepts and inter-relationships.”115 The rest of the program would include artist residencies, curricular programs for “studies in seeing anew,” exhibitions, and even a “common cafeteria where people working in different disciplines [could] meet.” The key, Kepes stressed, was to “involv[e] the total community in this new approach.”116 Finally, in 1967, a major milestone in this ongoing project was reached with the establishment of CAVS.

In describing the new organization, Kepes referred to it, variously, as a “research center… for new creative objectives,”117 a “research laboratory,”118 or a “small work community” that would produce “interthinking between different disciplines in the visual arts and scientific and technical fields.”119 “[M]ajor creative achievement,” he maintained, “comes from the confluence of many types of creative personalities.” The proposed “small work community,” therefore, “by recognizing common problems of adjoining or related fields, could

---

115 *MIT Art Committee Meeting*, minutes, 18 March 1965, p.1, Kepes Papers, Reel 5304, frame 454.

116 Ibid., pp. 2-3, frames 455-456.


accomplish the dovetailing… of knowledge and knowledge.” CAVS is typically identified by historians as an effort to breach the cultural divide between the arts and the postwar technosciences, and linked as such to other contemporaneous initiatives claiming the same ideological banner—such as Experiments in Art and Technology (E.A.T.). Kepes, however, dwelled less on the notion of an art-science polarity than he did on the idea of the artist’s cultural isolation from what he called “the total contemporary world.” Likewise, his efforts focused on overcoming a generalized condition of isolation or fragmentation, which he read at once in intellectual and in social terms.

The “common life of society,” he wrote for example, is “frozen into separate compartments each with its specialized interests and jargon,” proceeding seamlessly from a vision of disciplinary specialization to that of social disintegration. The overriding goal, thus, was the creation of a cultural community based on established channels for communication and the exchange of knowledge—a social-intellectual zone where all involved could “communicate… in the same language and could pool their feelings and knowledge in a common cultural stream.” So much was this the dominant idea that Kepes tried to select CAVS artists primarily for their ability to collaborate successfully or “interact” with others, and only secondarily for their interest in engaging with scientific or technological practices. He frequently

---

120 Kepes, “The Visual Arts and the Sciences,” 149-150.

121 See, e.g., Anne Collins Goodyear, “The Relationship of Art to Science and Technology in the United States, 1957-1971” (Phd. diss., The University of Texas at Austin, 2002), which discusses CAVS as one of five “case studies,” alongside E.A.T.; the NASA Art Program, established 1962; and “Art and Technology,” an exhibition program carried out at the Los Angeles County Museum of Art between 1966 and 1971.

122 “Lacking orientation in the total contemporary world,” Kepes wrote, “many artists have inevitably withdrawn into themselves. Their only honest response to this world has been the expression of complete isolation.” See Kepes, “The Visual Arts and the Sciences,” 150.

123 Ibid. 150.
reiterated this in letters to current and potential CAVS fellows. “The choice I have to make when I ask people to work at the Center,” he wrote to Keiko Prince for example,

is not guided by my liking for them nor by my estimation of their creative qualifications. To be at the Center… means more than just being there. There should be an interaction which produces a vital, creative ‘gestalt’ and not merely a co-existence of gifted, sensitive, human humans. … [T]he people working here have to have, aside from their creative gifts,… a quality that… could create a relationship that opens up in collaboration—in the exchange of ideas with other people—a new climate which could generate new ideas and new insights.¹²⁴

Much as he continued to envision the artist’s intervention in the physical environment he first proposed in 1947 as the cultivation of a “community of objects,” forming a unified Gestalt, Kepes now stressed that it must spring forth from a community of subjects.¹²⁵

The term “interthinking,” used by Kepes to describe the key characteristic of such a community, was derived from the writings of evolutionary paleontologist George Gaylord Simpson, who predicted that it would succeed “interbreeding” as the catalyst for human evolution.¹²⁶ But the ideal of a tightly-knit small-scale intellectual association, linking heterogeneous forms of knowledge by means of a shared language of communication, and dedicated to creative innovation, was widely shared in postwar academic circles—and especially prominent at Cambridge. As historian Jamie Cohen-Cole has argued, the evident success of interdisciplinary research practices in the postwar academy gave rise to an ideology of interdisciplinary communication as a “heuristic model” for a unified pluralist national society.¹²⁷

¹²⁴ Gyorgy Kepes to Keiko [Prince], 17 July 1973, Kepes Papers, AAA, Reel 5309, frame 456.


First voiced in the social sciences but quickly spreading to the natural sciences and the humanities, this disposition tended to associate the increasing proliferation and complexity of specialized knowledge with increasing social heterogeneity in postwar America, and consequently held functioning interdisciplinary collaboration as a paradigm of social cohesion. In the context of a discursive culture rooted in intersubjective conceptions of the polity, it is not surprising that the success of this intellectual-social community depended on its constitution through a specific desirable type of subjectivity. Just as, Cohen-Cole proposes, ethnic, cultural, or racial tolerance was not premised on the erasure but rather the acceptance of differences, so “interdisciplinarity was not so much an issue of knowledge of several fields, [but rather of] the ability, cognitive skills, and personality to get along with people of other disciplines.” It was likewise precisely a communicative and cooperative capacity—an intellectual, ethical, and aesthetic disposition—that Kepes sought to cultivate at CAVS.

Although this ideological disposition was widespread in postwar academic intellectual culture, Cambridge was an important hub. The Cambridge academic world, Cohen-Cole writes, was “a web of intimate intellectual exchange,” woven in dinner clubs, discussion groups, academic societies, and research centers that both frequently grew out of high-level interdisciplinary conversations taking place in such settings and had the continuation of those conversations as their primary raison d’être. Kepes must be considered a member of that intellectual society. He participated in the interdisciplinary Macy conferences on cybernetics and


129 For intersubjective conceptions of political democracy in American thought, see discussion in the previous chapter of this dissertation. See also Cohen-Cole’s remarks on the largely implicit relevance of Deweyan political philosophy on the postwar discourses he traces, in Cohen-Cole, “The Creative American,” 255-256.


the regular meetings of the American Academy of Arts and Sciences (AAAS), which he joined in 1952. The series of themed interdisciplinary seminars he organized, discussed above, were certainly based on the same model; and the interdisciplinary conference in general remained an important site for the articulation of Kepes’s goals.

AAAS, for example, is a good lens through which to trace the intellectual-social community ideal. Discussion of the social value of interdisciplinary communication pervades its publications. In fact, its house organ, the journal *Daedalus*, was launched in 1955 under the auspices of Burchard, by then Dean of the MIT School of Arts and Sciences and Kepes’s friend, to enable the Academy to “make its mark on the whole nation or even the world” specifically by organizing and publishing “vigorous conferences on topics of cross-disciplinary interest.” In 1959, the anthropologist Margaret Mead, an active voice on the intellectual-social community, wrote in *Daedalus* on the relationship between scientific and general cultures. Her solution to “closing the gap between the scientists and the others” focused on the “intoxicating” process of “face-to-face… specialized communication” characteristic of the scientific “working conference.” In a passage that could have been written by Kepes, Mead extended that emphasis on communication to the fine arts, asserting that

---

132 For the impact of the Macy conferences on Kepes’s work, see Reinhold Martin, *The Organizational Complex: Architecture, Media, and Corporate Space* (Cambridge, MA: MIT Press, 2003), 38-40; for history of Macy conferences, see Steve J. Heims, *The Cybernetics Group: Constructing a Social Science for Postwar America* (Cambridge, MA: MIT Press, 1991); for Kepes’s participation in AAAS, see previous chapter of this dissertation.

133 See, e.g., *MIT Art Committee Meeting*, minutes, 18 March 1965, p.1.


[s]o long as the arts fail to come to grips with the findings of those sciences that are changing the face of the world, there is a danger that the group within which communication is really possible will become narrower and narrower. Thus it is imperative for the arts to come to terms with the physical, biological, and social sciences, so as to preserve and enhance their own powers of communication.137

The same themes were again replayed in an AAAS conference on the relationship between science and culture, the proceedings of which were published in a 1965 Daedalus special issue.138 Kepes participated in the conference, dedicating his remarks to the announcement of his initial plans for CAVS.139 After rehearsing the classic “two cultures” idea, the conference focused on the possibility of communication in an age of specialized knowledge. “[D]etailed professional knowledge of the other’s specialty,” it was agreed, “is not necessary for acknowledging common elements in science and scholarship… [there will always be an inescapable] tension between recognized commonalities and… necessary differences.”140 Thus perhaps the clearest, and most frequently invoked in the proceedings, expression of the conference’s ideal was in the art historian James Ackerman’s notion of scientia – a “single, evolving structure of ideas and of images that characterizes [the culture of a given time, and thus] pervades the attitudes of scientist, artist, and humanist-scholar alike, even though they are working on very different materials and in different languages.”141 It was also Kepes’s goal to access this scientia.

The idea of CAVS was in so many ways the ultimate expression of Kepes’s career trajectory that it is difficult to date its origin. It may be remembered that, already during the war,

---

137 Ibid., 142-143.
141 Ibid., vii.
Kepes had tentatively sketched out a plan for a University of Vision.\textsuperscript{142} Around 1964, the MIT School of Architecture had on file a proposal he made for an MIT Institute of Vision.\textsuperscript{143} Kepes himself has asserted that he had been pressing for the establishment of a visual arts center at MIT since the mid-1950s.\textsuperscript{144} But, evidently, it was not until 1963 that he started to make headway with the MIT administration in his plans to develop a “work center [that would be] a complementary part of the general education program.”\textsuperscript{145} By the start of 1964, President Stratton had been converted to “the concept of a Center for the Visual Arts, modeled after the pattern of [the Institute’s] other interdisciplinary centers, such as the Center for International Studies.”\textsuperscript{146} The brochure produced for the opening of the Center would explain that CAVS was established “to be the common focus of … a continuing, Institute-wide, interdisciplinary program,” conditioned by the structure of “scientific enterprise, [which] has been losing its own sharply defined boundaries, [with] specialties… become less distinct and frontiers interdisciplinary.”\textsuperscript{147} The administrative extension to CAVS of the research center model was clearly premised on the conceptual extension of the interdisciplinary research science paradigm

\textsuperscript{142} See previous chapter of this dissertation.

\textsuperscript{143} See Lawrence Anderson to Gyorgy Kepes, 2 July 1964, Kepes Papers, AAA, Reel 5304, frame 201.

\textsuperscript{144} See Jonathan Benthall, “Kepes’s Center at M.I.T.,” \textit{Art International} 19 (January 1975): 29. Certainly, any such possibility would have been tied to the question of funding. Kepes makes reference to a Ford Foundation grant proposal in his 1963 letter to Stratton cited above. In 1957, Killian made a pitch to the Ford Foundation for a grant to further engineering education in the liberal arts context, including “an array of cultural activities.” (James R. Killian to Henry T. Heald, President, The Ford Foundation, [1957], MIT Archives, AC 4, Box 90, Folder 1, p.3.) At the same time, Killian was absorbing \textit{The New Landscape} “with delight, stimulation, and satisfaction,” as he reported to Kepes. (James R. Killian to Gyorgy Kepes, January 4, 1957, MIT Archives, AC 4, Box 128, Folder 12.) It is plausible that Kepes broached the question of a visual arts center with Killian at this time and in this context.

\textsuperscript{145} Gyorgy Kepes to Julius A. Stratton, August 21, 1963, Kepes Papers, AAA, Reel 5303, frame 1179.

\textsuperscript{146} Julius A. Stratton to Jeptha H. Wade, III, January 8, 1964, MIT Archives, AC 66, Box 1, Folder 14, p.1.

\textsuperscript{147} Gyorgy Kepes, \textit{The Center for Advanced Visual Studies}, n.p.
to the visual arts accomplished by Kepes. Indeed, the proximity was so tight that, in its early years, CAVS was frequently assumed to be a research center in perceptual psychology.\textsuperscript{148}

The interdisciplinary center model, explained Max Millikan, head of the MIT Center for International Studies, was “focused around problems rather than disciplines.”\textsuperscript{149} A similar concept of gathering collectivities around problems was evident in all of Kepes’s post-\textit{New Landscape} projects. CAVS would become one more mode in this ongoing production of “a collective vision born of pooled feelings, ideas, and knowledge”—“the vector, as it were, of the creative impulses of artists, city planners, scientists, and engineers, all working together.”\textsuperscript{150}

Practically, this was accomplished by appointing artist fellows to engage in “a sequence of major collaborative projects” with each other as well as with Institute scientists and engineers, and with groups of graduate students and postdoctoral fellows in architecture, painting, sculpture, and film-making.\textsuperscript{151} (Figure 61) The inaugural CAVS brochure collated the work of the first set of artist fellows—Otto Piene, John Whitney, Takis, and Harold Tovish—with the already established members of Kepes’s visual-cognitive collectives—scientific images and Kepes’s photograms. Their integration was emphasized through the use of a uniform format—black-and-white—and scale for all. (Figure 62) A set of studio photographs taken in the Center’s first years restages the deskilling implicit to the visual collectivity: a pair of scissors in the foreground of one photograph is the lone and feeble evidence of manual craft in an environment set up for the

\footnotesize
\textsuperscript{148} The suggestion of changing the name to avoid this confusion was repeatedly considered (and, significantly, dismissed). See Benthall, “Kepes’s Center at M.I.T.,” 29.


\textsuperscript{150} Gyorgy Kepes, \textit{The Center for Advanced Visual Studies}, n.p.

\textsuperscript{151} Ibid.
production of texts and images. (Figure 63) CAVS fellows, Kepes’s visual design students, MIT postdocs—all would be engaged in the production of devices whose ur-form, the instrumental-indexical scientific photograph, was the epistemological record of postwar academic knowledge as it was shaped at the Institute.

However, there was another crucial element operative in the Center’s inception at MIT. In 1952, the Institute expanded from the bases of the liberal arts curriculum defined by the 1947 Lewis Committee to broach the visual arts. A Committee for the Study of the Visual Arts at MIT, chaired by Bartlett H. Hays, Jr., concluded its deliberations in 1954, and its recommendations were adopted by 1957. Departing from the general premise that contemporary science “seeks to educate experts who can perceive relationships instead of specialists who apparently do not,” and that art “is a response to ever changing relationships,” the Committee proceeded to embrace the educational value of art for its access to a form of cognition—“intuitive” rather than “logical”—deemed crucial to the intellectual development of the scientist and engineer.152 As a form of thought, participation in art would increase the creativity of the scientist. The committee consulted Kepes, along with Wilhelm Koehler and Rudolf Arnheim—names that hint at an interest in implementing for the Institute the theory of visual art practice as aide to intellectual innovation explored in the previous chapter of this dissertation.153 In fact, Kepes’s activities at the Institute were much more central to this initiative than his marginal role in committee deliberations might suggest. Hays Committee recommendations were conceived, as Burchard wrote seeking funding from the Rockefeller Foundation, as part of an “expanding humanities program at MIT.” The Institute, Burchard explained, felt “well equipped” to initiate


153 See ibid., 47.
an “experimental art program” because it could build on the “laboratory for architectural
students” directed by Kepes, and given that “the relations between the Schools of Architecture
and of Humanities are so cordial and so complete.”154

Starting in 1957, an Institute-wide curriculum of art history and studio art courses, known
as Field Ten (Visual Arts), was brought under the administration of the School of Architecture.
Its studio program was developed by Robert O. Preusser, an artist originally hired to help teach
visual design with Kepes and thoroughly imbued with Kepes’s philosophy and technique. The
studio course, Preusser explained, consisted of a “sequence of visual forming tasks, spanning the
extremes of spontaneous and analytical procedures.”155 MIT science and engineering students
were encouraged to manipulate in new ways the industrial materials and experimental procedures
of the scientific research and development laboratory, exploring their aesthetic potential. (Figure
64) The goal, Preusser maintained, was not to make artists out of scientists, but to make possible
the “comprehension of the artist’s thought process without emulation of his product” in order to
encourage the “development of imaginative thinking and inventive procedures.” The program
was an exercise in testing the fundamental hypothesis that “creative processes in art and science
are similar and that participation in the former can, in turn, heighten performance in the
latter.”156 But in addition to its role in enhancing intellectual innovation in the sciences, Field
Ten would contribute to rebuilding the intellectual-social community splintered by
specialization, proving that art and science are “mode[s] of understanding” that can “vitalize

154 John Burchard to Dean Rusk, 1 June 1954, MIT Archives, AC 4, box 186, folder 4, p. 2.
155 Robert Preusser, “Relating Art to Science and Technology: An Educational Experiment at the Massachusetts
156 Ibid.
[each other] with points of view and concepts seldom considered in their isolated formats,” thus leading to “interdisciplinary understanding and collaborative action.”157

Design knowledge, having been invested with the instrumentality devised for the MIT scientist, was thus returned full circle to help train the scientist to see and think. The goal of Field Ten, wrote architecture Dean Lawrence Anderson, was “to graduate scientists and engineers who are fully aware… of their responsibility for improving [the] physical environment.”158 This was an expression of the only slightly wider goals set for the program by the Hays Committee itself. “The ideal [art education] program,” the Committee had written, is virtually an experience in social education presented visually… [Its goal] is to develop the capacity of the technician to undertake responsibility for the forms that his technical training creates. The quality of these forms, as of his own spiritual insight, ultimately affects the social atmosphere and climate of thought of his entire world.159

Retracing CAVS origins at the time of the Center’s inauguration, Kepes recalled the formative influence of Hayes in the development of his own recognition of “what art education should be in a university.”160 Accordingly, the Center’s inaugural brochure emphasized the “reinforcement” CAVS would give to the Institute denizen in the carrying out of “the present extremely significant role of the scientist-citizen.”161 Thus CAVS could be traced back to Kepes’s initial activities at the School of Architecture, in turn an expansion and realization of the fundamental social goals of The Language of Vision: the formation of a cognitive-perceptual vanguard for social change. CAVS was established to undertake an “education of the educators

157 Ibid., 199, 201.


159 Art Education for Scientist and Engineer, 16.


of sensibilities,” Kepes wrote, echoing his first book. Only now, from within his mature conception of vision that no longer admitted any distinctions between formal design and advanced knowledge-production, the ranks of the “educators of sensibilities” would expand to include the “scientist-citizen” as well as the artist and the architect.

---

Soon after CAVS opened in 1967, the MIT campus, like many university campuses across the country, was convulsed by student and faculty protests. The radical discourses of 1967-68 brought the politics of knowledge, whose history in relation to design has been traced in part in this dissertation, into the national spotlight. But they also gave a new ideological shape to that politics, inflected by the strategic demands of the moment. That discursive formulation has had lasting effects, coloring historical assessments of the postwar American regime, and also impacting the evaluation of design practices situated within it.

The conflict erupting at MIT around 1967-68 turned around the constitution of political agency in scientific production in the Vietnam era. In a 1967 issue of the *New York Review of Books*, MIT linguistics professor Noam Chomsky published an essay titled “The Responsibility of Intellectuals” that became one of the lightning rods in the debate on knowledge. Chomsky took as his targets prominent scholars like Arthur Schlesinger, Thomas Schelling, McGeorge Bundy, and MIT’s own Walt Rostow, who held consulting positions with the federal government, appeared to contribute to the formulation of policy, or whose presence at the White House was increasingly prominent under the Kennedy and Johnson administrations. Those were the men who embodied the ideal of leadership for which MIT education—newly infused after the
war with liberal arts methodology—had been preparing its students: instrumental knowledge placed at the disposal of the state. Chomsky’s essay, in effect, shifted attention from the production of instrumental knowledge—the problem which had occupied MIT since the war—to its application. He observed that “scholar-experts [solving the] technical problems that arise in contemporary society” surreptitiously embrace the dominant ideology driving Washington policy when they find themselves in positions of access to the formation of that policy.¹ Their elaborations of objective solutions to specific (foreign) policy problems in fact reveal a basic ideological consensus on state policy objectives, even when the latter obviously contradict “fundamental human values.”² In this way, Chomsky’s critique brought to bear directly on the basic logic of the deferral of value sustaining MIT’s educational philosophy. “Quite often,” he wrote, “the statements of sincere and devoted technical experts give surprising insight into the intellectual attitudes that lie in the background of the latest savagery.”³

Like many left-leaning intellectuals formulating the new discourse of the politics of knowledge, Chomsky did not address the content of the knowledge produced, but rather its position with respect to the institutions of the state. Intellectual dissent at MIT was structured in the terms of an inter-faculty confrontation between “inside men” and “outside men”—those with and those without Washington contracts. (Figure 65) The physicist Jerrold R. Zacharias expressed the position of the former as “the most basic axiom of politics: ‘It’s better to be on the inside heaving out than on the outside heaving in.’”⁴ The position of those on the “outside,” Chomsky prominent among them, was enacted through a one-day “research stoppage,” led by

---

² Ibid., 342.
³ Ibid., 357.
forty eight MIT professors, as a “symbolic gesture of protest” against defense work, refusing instrumentality as such. The same solution of programmatic disengagement was played out in the demands on the part of student protesters for the university’s divestment of two of its affiliated “research centers”: the Lincoln Laboratory and the Instrumentation Laboratory (later Draper Laboratory). This spatialization of political agency around a borderline dividing power (vested in the political institutions of the state) and resistance (situated outside of them) placed the question of the social responsibility of knowledge-production in the terms that Kepes—the man in the middle—never considered. To him, the merging into a collectivity of instrumental knowledge and cultural value would in itself produce positive social effects; the relationship between the construction of values and the distribution of powers eluded him.

The strategic topography of knowledge with respect to the state as a coercive “establishment” or “complex,” in the familiar language of the period, would dominate discussion of the practices of instrumentality developed over the prior decades—the ideological division between instrumentality and autonomy mirroring the positions of political right and left. While this discourse has been enormously successful in animated practices within a broad cultural arena, including that of design, its validity as a critical paradigm illuminating reflection on the

5 Ibid.


7 In a 1965 “Science and Culture” issue of Daedalus, the journal of the American Academy of Arts and Sciences, to which Kepes contributed the first public statement of his plans for CAVS, Herbert Marcuse published a version of his influential polemic against “technological rationality.” The “operational” dimension of technology is integral to the scientific method, he rehearsed; and the ongoing merger of the sciences and the humanities extends that instrumentality to all of knowledge, effectively removing from the “technological society” every expression of resistance contained in “non-operative” forms of rationality, whether “pure” science or “autonomous” culture. To pass from an “affirmative” instrumentality to a genuinely creative one, therefore, would require a (temporary) negation of all operative, or socially productive, dimensions of knowledge. Herbert Marcuse, “Remarks on a Redefinition of Culture,” Daedalus 94, no.1 (Winter 1965): 202.
postwar period has certainly been exhausted. The opposition between autonomy and instrumentality as models for cultural and political practice must itself be historicized, and its function explored according to the contingencies of its formulation. Although that project is outside of the scope of this dissertation, I have engaged here in an analogous investigation of the political constitution of instrumentality for the preceding historical era. From 1937 to 1967, I have argued, the political instrumentality of design as a practice of knowledge was dependent on its ability to successfully delimit its own range of control in the various social spheres it attempted to enter. This form of instrumentality, or this distribution of agency, positioned design practices in confluence with the state, itself constituted in relation to the social sphere, over which its jurisdiction extends, as a topography of limits, constraints, and retrenchments.

In that context, the process-based conception of design practice developed in the European 1920s had a powerful resonance. Gropius’s programmatically non-prescriptive formulation of design method as a disciplined response to contingency was embraced by the American architectural profession working to define its relationship to the national economy newly constituted as a medium of flexible and open-ended interventions. His progressive immersion in this professional environment evidently made only more pressing the imperative to champion a pliable design expertise, to further define its parameters, and to variously develop it in the spheres of its multivalent application: from the training of the architectural student to the articulation of planning approaches at the national scale. Thus, for example, Gropius’s and Wagner’s almost ritualized invocation of “flexibility” in 1942 must be read less as an index of their ideological proximity to the economic-managerial discourse of Hansen and Greer—with whose concrete analysis and recommendations, it may be recalled, the former two actually

---

8 Such a project is carried out in relation to postmodern “autonomy” in Reinhold Martin, Utopia's Ghost: Architecture and Postmodernism, Again (Minneapolis: University of Minnesota Press, 2010), 49-68.
disagreed—than as a record of the designers’ eagerness to position their own professional competences as fully coextensive with the instrumentalized knowledge regime represented by those intellectual disciplines with direct access to the formation of state policy.

Kepes’s efforts to extend the utility of design in the sphere of general education made no claims—however indirect—for policy influence, but he nevertheless aspired to create a key role for design in the shaping of the social subjectivity that was called upon to express postwar economic and political citizenship. While Gropius and Kepes shared the same general philosophy of education, based in progressive educational reform models, Kepes expanded, and perhaps radicalized, its field of application—from the flexibly-skilled designer, which remained the target of Gropius’s pedagogy, to the flexibly-skilled knowledge worker and open-minded citizen in general. At the same time, already around the crux of the Second World War, Kepes foresaw the imminent advancement of the politics of expertise onto the frontiers of the national mind, while Gropius focused his attention instead on the tasks of expertise in the coordination and management of large-scale building operations. In Cambridge and in Chicago, respectively, Gropius and Kepes oriented their reflections on design knowledge towards the two frequently outlined and juxtaposed dimensions of national mobilization: the organization of material resources and the management of human resources. Likewise, after the war, the model of design practice that the two protagonists of this study embodied diverged—Gropius increasingly assuming the conventional role of the architect as producer of physical structures, especially after his retirement from Harvard in 1952 to dedicate himself full-time to TAC; while Kepes went on to develop at MIT a model of the designer as producer of image and discourse communities.

Throughout this history, the relationship between the politico-economic goals and techniques of the state and the discourses and strategies of design has been construed neither as
causal, nor as a matter of ideological representation or mediation. The hypothesis I have explored in the preceding pages under the heading of the relationship between design and the politics of knowledge is, rather, that the development of the state since the New Deal entailed the elaboration of a specific instrumentality for intellectual practices, characterized above all by the imperative of self-delimitation, and that design participated in that elaboration. In other words, the relationship between the practices of design and the processes of state formation has been fundamentally symbiotic.\footnote{Here, to reiterate, what I mean by the processes of state formation is not the development of specific policies in Washington, nor the conduct of professional party politics, but rather the emergence of a particular regime of governance, defining and regulating the relationship between “society” and the (centralized, national) “state.”} Without in any way claiming a total collapse of the cultural into the political, I have tried, nevertheless, to consistently resist any reading premised on the assumption of an essential heterogeneity between these two “spheres.” A search for modes of mediation or communication would be beside the point here. Thus, Gropius and Kepes—as well as the other designers and intellectuals who appear in this study—did not collude, whether wittingly or unwittingly, with the regime of governmentality described here. Nor, of course, did they resist it. Dispelling the identification of instrumentality with collusion (or at least affirmation) that still tends to dominate politicized readings of modernist and late modernist design practices should not lead to a revisionist celebration of those very practices as progressive or liberalizing. To present Gropius and Kepes as heroes, villains, or dupes would be to assign to each at once too much power and too little relevance. Instead, I have tried to understand their practices as indexical of design’s constitutive role in the historical formation of the political agency of knowledge, and thus to the emergence of knowledge as a political “object of contention.”

It is possible, and becomes at certain points unequivocally necessary, to imagine other modes and strategies of agency, other targets and potentialities. But thinking and acting
otherwise—both in design and in the production of knowledge—requires an unflinching confrontation with the limits of agency as currently constituted, without which the potential of the imagination can only dissipate. As contemporary vanguard architecture increasingly turns to socially-engaged and research-based practices, and as contemporary thought increasingly examines the classical problem of the state as the starting point for revisions of current political practice, the contribution of design practice to the history of state formation in the New Deal and after, explored in this dissertation, could provide a model for the examination of the social constitution and efficacy of design practices as they continue to traverse new “layers of the political.”

THE DECORATED DIAGRAM

Harvard Architecture and the Failure of the Bauhaus Legacy

Klaus Herdeg

Book jacket design for Klaus Herdeg, *The Decorated Diagram.* Figure 1
Still from Dziga Vertov’s *The Man with a Movie Camera*, 1928–29.
Analysis of table shapes proposed for Vietnam Peace Conference.
From Herdeg, *The Decorated Diagram.*
The Pan Am Building in its urban context.  

Figure 4
Park Avenue pre- and post-Pan Am, from Vincent Scully, *American Architecture and Urbanism* (1969). Figure 5.1
Park Avenue pre- and post-Pan Am, from Peter Blake, *God’s Own Junkyard* (1964).
Claes Oldenburg, *Proposed Colossal Monument for Park Avenue, New York City: Good Humor Bar*, 1965. Crayon and watercolor, 16 ¼ x 13 ½ inches. Figure 6
Laszlo Moholy-Nagy, *Composition (Glass Architecture)*, 1922-23, oil on canvas, 95 x 75 cm
Laszlo Moholy-Nagy, *Kinetic-Constructive System*, schematic diagram, 1922, cut-and-pasted paper with ink and watercolor on paper, 24 x 18 7/8 in.

Figure 8

Figure 9
Lajos Kassák, *Pictorial Architecture*, 1922
Oil on cardboard, 28 x 20.5 cm  
Figure 10
More potent in promoting prosperity or depression than any other industry, building construction activity closely parallels that of general business. Though similar in trend, the peaks and valleys of building are sharper than those of business. This is due largely to the possibility of easily deferring new construction over long periods of time.

Ups and Downs in Building Mean Peaks and Valleys in Business

BY THOMAS M. MCNIECE

Put Them All to Work!
I have been asked by The Architectural Record to write a few words about my new task as professor in the Harvard University Graduate School of Design. I feel rather at a loss to talk much about my academic duties before I have found my bearings in this country and I should like therefore to confine myself only to a few remarks about my general intentions.

I have been in America only once, in 1929, I came here to study the extraordinary building organization, which is at present unsurpassed in the world. It has provided an instrument of such wonderful perfection, that I think any architect would feel inspired and eager to take part in the task of developing the American architecture of the future. I am again deeply impressed by the enormous scale of American architecture. Whatever the criticism may be—the ingenuous fearlessness and broad-mindedness of its creators cannot fail to affect everybody. It may seem rather a daring enterprise that I as a European architect venture to add my experiences to the bold planning and amazing technical perfection which you have achieved. I hope my appointment will be a further proof of the American ability to reconcile and amalgamate the most diverse types of people to create a new form of life and a typical American spirit.

You may want to hear from me what sort of contribution I wish to make to the development of American architecture, and it may seem rather odd to you that I turn up here in search of what American architecture should be like. I assure you, I feel pretty certain that I shall be a pupil here as well as a teacher, and I am very keen on taking over this double function. My intention is not to introduce a so-called new and dried "Modern Style" from Europe, but...
FROM KEYNES TO ROOSEVELT:
OUR RECOVERY PLAN ASSAYED

The British Economist Writes an Open Letter to the President

Finding Reasons, in Our Own Words, for Both Hopes and Fears

From Keynes to Roosevelt: Our Recovery Plan Assayed.

The New York Times, December 13, 1933. (detail). Figure 14

PUBLIC WORKS: THE WAY OUT?

Ella Award

Slum Clearance, a Type of Expenditure Which Mr. Keynes Recommends

The New York Times, December 13, 1933. (detail). Figure 14

"From Keynes to Roosevelt: Our Recovery Plan Assayed,"

The New York Times, December 13, 1933. (detail). Figure 14
THE ARCHITECTURAL RECORD

The Site:

Step 1

Step 2

Step 3

Step 4

Step 5

Step 6

Scientific Stages in Solution of an Architectural Problem

333 rooms. These will be divided in 144 rooms in 3-story and 192 rooms in 4-story buildings or 96 + rooms per floor.

Average linear foot of building length required per room 7.47 x 96 rooms = 717.1 linear feet + 21.9 feet for ground floor losses = 740 lin. ft. of building required. Same process for all 4-story building $4,998 + $6870 = 308 rooms + 4 = 77 rooms x 7.47 =


Figure 15
Diagram of the building industry within the national economy, from Benjamin F. Betts, “Jobs for Millions Through Revival of Building,” *American Architect* (September 1933). Figure 16
Few recognize the importance of real property or the significance of its enormous overextension. Unwarranted real estate development has overreached our requirements. The burden has been too great and continued uncontrolled building volume can only throw our entire economic structure out of balance.
Left: London. From *Architectural Record*, March 1943.
Right: Defense housing construction at Linda Vista, CA, 1941.

Figure 19
Top: Levitt & Sons defense housing community, Norfolk, VA, ca.1941.
Bottom: Fort Leonard Wood, MI, 1941.  
Figure 20
Survey responses from “Architects and Engineers at Work,” *Architectural Record* (August 1942), reflecting growth in “added services” and “integration,” as well as in military and government work.
(Image adjusted to fit page).

Figure 22.1
From “Small Arms Ammunition Plants,” The Architectural Forum (December 1942). (Image adjusted to fit page). Figure 22.2
"Architecture today is wise heads around a table."

From “Functions, Factors and Futures,” Architectural Record (November 1942). Figure 24
Advertisements from (left) *New Pencil Points* (July 1943) and (right) *The Architectural Forum* (December 1942) drawing analogies between military and architectural “strategy.” Figure 25
CIAM-France, diagram of production of proposed CIAM 4 volumes, ca. 1936. Figure 26
Top: Martin Wagner and Bruno Taut (plans), Gross-Siedlung Zehlendorf, ca. 1926-32.
Regional Planning Association of America (RPAA) model community (plan). Clarence Stein and Henry Wright, Radburn, NJ, 1928.
Top: Walter Gropius, Hirsch system model for the *Wachsende Haus* exhibition, organized by Martin Wagner, 1932.

From Gropius and Wagner, “A Program for City Reconstruction,”
Architectural Forum (July 1943).
Clockwise from top left: location of proposed township in the region;
three versions of township plans; plan of the final layout.  

Figure 30.1

Figure 30.2
Partial plan for Chatham Village, Pittsburgh, by Clarence Stein and Henry Wright, 1930-32, showing relationship of plan to dwelling design. From Francesco Dal Co, “From Parks to the Region,” *The American City* (1983). Figure 31
Optical illusions published in Life articles on psychology.


Optical illusions as applied in historical works of architecture, from Walter Gropius, *Scope of Total Architecture* (1943).
Charles Forberg, exhibition building, 1946, a GSD student project demonstrating the optical effects of texture and pattern variation. 

Figure 33
Comparison between the Bauhaus and Harkness Commons, from William Jordy, “The Aftermath of the Bauhaus in America” (1968). Figure 34
Views of Harkness Commons, from Walter Gropius, Jean B. Fletcher, Norman C. Fletcher, John C. Harkness, Sarah P. Harkness, Louis A. McMillen, Benjamin Thompson, eds., *The Architects Collaborative* (1966). Figure 35
Student work from Kepes’s School of Design workshops, from Gyorgy Kepes, *Language of Vision* (1944).
Advertising designs by (top left) Lester Beall, (bottom left) Harold Walter, and (right) Kepes, from Gyorgy Kepes, *Language of Vision* (1944). Figure 37
Sequence showing industrial adaptation of hand sculpture made in the School of Design rehabilitation class, from “Better than Before,” Technology Review (November 1943). **Top:** Blind people testing tactile charts and hand sculptures at the School of Design; **middle:** a hand sculpture; **bottom:** design for a telephone handset. Figure 38
Top: Ann Brinkley, hand sculpture, 1939; middle and bottom: Noland Rhoades, telephone, 1941, “a practical adaptation of the hand sculpture,” from Laszlo Moholy-Nagy, *Vision in Motion* (1956). Figure 39

Figure 42

Fig. 1. “The aim is to metamorphose stereotyped recognition.... Collage of facial tissue examined photographically under controlled light.

Fig. 2. “...to place in a new frame of reference one’s own immediate world.” Photographic study of the bark of a birch tree.

Fig. 3. “Photographic processes become tools in the development of visual acuity.” Photographic study of a shadow cast on a gravel path.

Fig. 4. “... the slow transformation of a dead white surface into something alive and vibrant.” Pen drawing by thirty different students.
A “distorted room” installation from the viewing point. Reconstruction, ca. 1952. 

Figure 43
Edwin H. Blashfield, *Good and Bad Uses of Science*,
south wall panel, Morss Hall, Walker Memorial, MIT, 1930. Figure 44
Gyorgy Kepes, “Visual Fundamentals: Expansion and Contraction of Color,” n.d. Figure 45
Gyorgy Kepes, “Education of Vision: Contrast—Positive—Negative—Color,” n.d., detail. Figure 46
“Kepes Looks at Light; Sees Spots,” *Interiors* 110 (January 1951). Figure 47
“Kepes Looks at Light.”

Figure 48
The Box, with Panel 3 removed, showing the Observer in position, and the diffusing plastic surface in place.
Gyorgy Kepes, notes on *Light as a Creative Medium*, n.d.  
Figure 50
Gyorgy Kepes, notes on *Light as a Creative Medium*, n.d.

Figure 51
Installation photograph, *Light as a Creative Medium*, Harvard University, 1965. Figure 52
Installation photograph, *Light as a Creative Medium*, Harvard University, 1965. Figure 53
From left to right: Spark photograph of a model projectile; photo-elasticity record or strain diagram; high-speed photograph of a falling drop of water, from Gyorgy Kepes, *New Landscape in Art and in Science* (1956). Figure 54

Figure 55
Hans Arp cut out bits of colored paper and, with deliberate abandon, tossed them on a piece of cardboard, threw them around, and finally turned them over and pasted on the cardboard the pattern that they formed by chance. Such chance has in it, however, more reason than we, with our present blinkers and confused senses, can see. The resulting order shows an organic understanding far more embracing than the formal logic-sharpened-in-static-object concept. It is natural that these automatic expressions resemble the biomorphic realms of nature. They have the same order as the visible forms of mutations, transformations, the perpetual asymmetric rhythm of the processes not yet fossilized in terms of things.

Hans Arp, Mountain, Table, Anchors, Novel 1925
Courtesy of The Museum of Modern Art

From Gyorgy Kepes, Language of Vision (1944). Figure 56
Gyorgy Kepes, *Kinetic Light Mural*,
KLM Royal Dutch Airlines headquarters, New York City, 1959 (detail). Figure 57
Left: 30-caliber bullet impacting a Plexiglas bar, from “Strobe Probe,” Technology Review (July-August 1968).
Right: model projectile in flight, from Gyorgy Kepes, New Landscape in Art and in Science (1956).
Two-page spread from Gyorgy Kepes, *The New Landscape in Art and Science* (1956) showing the collage strategy of juxtaposing text and images from disparate sources. Figure 59

Figure 60
CAVS interior photographs, ca. 1967.

Figure 63.1
CAVS interior photographs, ca. 1967.  

Figure 63.2
CAVS interior photographs, ca. 1967.

Figure 63.3
Work from Robert Preusser’s courses at M.I.T. Clockwise from top left:
H. P. Nightingale, Family of Hexagons, crayon, 11 x 15 in., 1955;
Robert Preusser, Relief planes illuminated from the rear and distorted in
a semicircular mylar wall, n.d.;
Anon., Virtual volume produced with luminous ‘lightline’ utilizing
plasma technology, n.d.;
Anon., Lens distortions of concentric circles and light, n.d.
From Robert Preusser, “Relating Art to Science and Technology:
An Educational Experiment at the Massachusetts Institute of Technology (M.I.T.),”
Leonardo 6 (Summer, 1973).
COMPLICITY

Jerome Weisner's Contribution:

The Pentagon Papers show the role Jerome Weisner played in developing the technical aspects of the anti-infiltration fence. The components of this electronic detection system are an integral part of the "Automated Battlefield" now being used in Indochina.

Jerome Weisner is a director of Adams-Russell. The company has recently received the following contracts:

1) August, '71, An antenna used on the "Electronic Countermeasures Pod" which is used on the following Air War aircraft: A-7 Corsair, the F-4 Phantom, the F-100 Supersabre and the F-105 Thunderchief. $39,164.

2) June 1, 1971, the company received a contract titled: "Group B antenna used on B-52 G/H". The B-52 is used in the current massive bombing of Indochina. $112,403.

3) March 12, 1971, the company received a contract for "antennae... to be used with ALQ-13 systems". The ALQ-13 system is an ECM noise jammer which is used on the B-52 bomber. $86,020.

4) Feb. 25, 1972, Adams-Russell received a contract for $37,744 worth of "B-52 modification kits."

A leaflet handed out by protesters on the M.I.T. campus, 1972.

Figure 65
BIBLIOGRAPHY

Archival collections, with abbreviations used in text

*Arnheim Papers, AAA*  
Rudolf Arnheim Papers, Archives of American Art, Smithsonian Institution, Washington, D.C.

*CAVS Archives*  
Center for Advanced Visual Studies, uncatalogued archival collection

*Houghton*  
Walter Gropius Papers, Houghton Library, Harvard University

*HUA, UAI.5.xx*  
Harvard University Archives, Official University Records, Records of President James Bryant Conant

*HUA, UAI.10.xx*  
Harvard University Archives, Official University Records, Records of the Corporation Committees and Boards

*HUA, UAV 322.7.x*  
Harvard University Archives, Records of the Graduate School of Design, Records of the Office of the Dean, 1900-1965

*HUA, UAV 322.138*  
Harvard University Archives, Records of the Graduate School of Design, Records of the Department of Regional Planning

*Isaacs Papers, AAA*  
Reginald Isaacs Papers, Archives of American Art, Smithsonian Institution, Washington DC

*Kepes Papers, AAA*  
Gyorgy Kepes Papers, Archives of American Art, Smithsonian Institution, Washington, D.C.

*MIT Archives, AC 4*  
Massachusetts Institute of Technology Archives and Special Collections, Records of the Office of the President, 1930-1959

*MIT Archives, AC 66*  
Massachusetts Institute of Technology Archives and Special Collections, Records of the Art Committee, 1960-1973

*MIT Archives, AC 134*  
Massachusetts Institute of Technology Archives and Special Collections, Records of the Office of the President, 1957-1966

*MIT Archives, AC 400*  
Massachusetts Institute of Technology Archives and Special Collections, School of Architecture and Planning, Records of the Office of the Dean, 1934-1992
<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wagner, Loeb</td>
<td>Martin Wagner Papers, Frances Loeb Library, Harvard University</td>
</tr>
<tr>
<td>N/A</td>
<td>Massachusetts Institute of Technology, Rotch Library of Architecture and Planning, The Architects Collaborative Papers</td>
</tr>
</tbody>
</table>

### Published material

*Official Register of Harvard University* XXXIII, no.34 (27 June 1936).

*Official Register of Harvard University* XXXIV, no. 22 (12 April 1937).


*Massachusetts Institute of Technology, President’s Report* 79, no.1 (October 1943).

*Massachusetts Institute of Technology Bulletin, Catalogue Issue* 81-91, no.4 (June 1946) - no. 6 (July 1956).


“Color.” *Life*, 3 July 1944.


“List of the Fellows and Foreign Honorary Members (Corrected to January 1, 1953).” *Proceedings of the American Academy of Arts and Sciences* 82 (March 1953): 7-49.


“President Compton Announces Post-War Curriculum Changes; Tells of Institute’s War Service.” *The Tech* (June 9, 1944), 4.


“Special Issue: Science and Culture.” *Daedalus* 94 (Winter 1965).


Compton, Karl Taylor. *MIT Bulletin, President’s Report Issue* 68, no.3 (October 1932).


--------------. “Training the Architect.” *Twice a Year* 2 (Spring-Summer 1939):142-151.


*Housing as a Townbuilding Problem: A Post-War Housing Problem for the Students of the Graduate School of Design, Harvard University, February-March, 1942*. Cambridge, Mass.: Harvard University, 1942.


------------------------. “Architecture’s Place in City Planning.” Architectural Record 97 (March 1945): 70-3.


MacCornack, Walter R. “School of Architecture.” *Massachusetts Institute of Technology, President’s Report* 79, No.1, October 1943, pp.122-123.


Mead, Margaret. “Closing the Gap Between the Scientists and the Others.” *Daedalus* 88 (Winter 1959):139-146.


Yoder, R.N. “Are You a Contemporary?” *Saturday Evening Post*, 3 July 1943.