

# Contested Pedagogy: The History of the “Design and Human Behavior” Idea

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Marge Piercy suggests, in her futuristic novel *Woman On the Edge of Time* (1976), that one of two opposite worlds could emerge from modernity. In one of these, a woman is trapped in a cell within a stark, hierarchical skyscraper architecture violently established for the benefit of a totalitarian, industrial, consumer capitalism. She is permanently linked to and forced, by her architectural situation, to watch a malfunctioning television screen; windows provide mere simulations of the outside world. She behaves as though insane.

A beautiful world is the alternative to this hell, born into existence by the courageous struggle of the novel’s protagonist, Consuelo (Connie) Ramos. Here, modern architecture supports human happiness and creative potential. Womb-like membrane structures glow in the balmy dusk, forming a pedestrian village nestled in endless woodlands, housing a loving and supportive tribe of humans. The tribe’s healthy, kind, respectful, creative, and intelligent people act on their own free will.

Piercy’s two opposite visions reflect the fundamental premise of the design and human behavior idea. In both visions, architectural quality is synonymous with the realization or destruction of human potential. Rejecting the bad and embracing the good — the second vision — can come about, as it does at the hands of Connie, only through radical dedication to social progress. Changing the world for the better, holding on to social hope, is a matter of finding the architectural form that supports healthy human behavior. The origins of this idea can be traced to the Cold War era, with its pronounced emphasis on opposite categories and enemies.<sup>1</sup>

This paper considers popular and academic expressions of the design and human behavior idea in the post-World War II era. Psychology studies, prominent cultural

critics of the 1950s, and the then-celebrated Richard Neutra, among others, all helped to popularize notions about the social scientific investigation of the relationship between people and places. In the universities and the profession of the 1960s and 1970s, ideas about design and human behavior expanded dramatically. Together, the intertwined popular and academic manifestations of design and human behavior in the post-World War II era have served unintentionally to reinforce the progressive principles of modernism up to the present moment.

## BEGINNINGS: THE *BUILDING FOR MODERN MAN* SYMPOSIUM, 1947

After World War II the design and human behavior idea, although not entirely new, gained a sense of urgency and a new vocabulary. Carried along by technological enthusiasm and scientific fervor, behavioral scientists and architects sought to improve the cities and suburbs for a society modernizing anew. Believing that the bomb had saved the world by ending the war, this society pursued plastics, chemical agriculture, television, and a host of other inventions and investigations to improve the world and advance the cause of democracy and freedom. Few academic disciplines were immune from the increase of scientism and technological application. In architecture and planning, leading practitioners articulated the idea of the impact of the environment on human beings at the 1947 Princeton University symposium, *Building For Modern Man*.<sup>2</sup> That same year Roger G. Barker and Herbert F. Wright established the Midwest Psychological Field Station in Kansas to study American social behavior in an actual built environment.<sup>3</sup> Building on psychological science deployed during the war, the National Mental Health Act of 1946 made official the use of psychology for the mainte-

nance of the mental health of the average American.<sup>4</sup> These parallel moves within disciplines and by government, manifested as a prescriptive discussion in architecture and a more assertive scientific investigation in the behavioral sciences, were intended to serve the needs of a rapidly expanding society.

Thomas H. Creighton, editor of *Progressive Architecture*, edited the papers from the *Building For Modern Man* symposium. Creighton claimed the speakers had made, "as complete a statement of the position of architecture in the middle of the twentieth century as the practicing and criticizing profession can make for itself."<sup>5</sup> Included were giant figures: Walter Gropius, Frank Lloyd Wright, and Richard Neutra, as well as distinguished scholars and academicians Gyorgy Kepes, Joseph Hudnut, Sigfried Giedion, Henry Kamphoefner, Talbot Hamlin, and William W. Wurster. Many of the participants discussed the need for and uses of research.

Pursuing scientific research in architecture and planning suggested to some the beginning of an era. Creighton quoted Lawrence Kocher as "put[ting] his finger on the sort of research that most of the discussants were thinking of":

Research is the foundation for the development of new solutions—not alone for materials, but for living, for planning, for social relationships. This research should be a coordinated endeavor of the architect, the town planner, the engineer, the specialists in biology, sociology, psychology, and so on.<sup>6</sup>

In Creighton's estimation, the period clearly ending was marked by "the practice of eclecticism" of form; the period just beginning would embody "a new philosophy of form." The new philosophy represented increasing commitment to science, industrial processes, a "humanistic basis for all planning," and a "new esthetic. . . based on physiological and psychological grounds."<sup>7</sup> The symposium discussion emphasized the growing importance of psychological and behavioral study as a foundation for solving problems of pre-fabrication, planning, and architectural design.

A particularly characteristic debate, which Creighton wrote about in both the conference volume and in *Progressive Architecture*, stemmed from Adelbert Ames' presentation, "Architectural Form and Visual Sensations." The Ames experiments demonstrated the now commonplace idea that perception is based on the interpretation of sensation through prior experience. Creighton contextualized the debate:

this particular group discussion . . . moves the consideration of form from the vague place it has had in the design of usable shelter to its proper position as a source of physical sensations which have a strong effect on men's lives. There it can be studied, scientifically. There it can be discussed on rational, rather than emotional, terms.<sup>8</sup>

Creighton summarized the Ames debate in the December 1947 issue of *Progressive Architecture*, putting the debate in terms of the progressive possibilities for architecture. American social problems could be solved and society advanced through the right kind of beauty:

there is action which results from the visual experience. . . . the buildings and the cities which we design can lead to purposeful action and can help destroy—or prevent—the fear and prejudice that come through a lack of surety.<sup>9</sup>

The Ames research, in other words, suggested how the visual perception of form operates and how to encode in buildings the Cold War era appetite for individual self-improvement and "purposeful action."

Of the whole range of questions and approaches that eventually would be taken up by environment-behavior researchers, the Ames experiments in visual perception represented the most extreme scientism to many interested in architecture. The experiments were understood as an effort to understand the science of perception to such a degree that psychological reactions to visual forms could be anticipated and the viewer manipulated.

A reader responding to the Ames experiments in a letter to the editor of *Progressive Architecture* (January 1948), objected to the idea that art could be so easily explained in terms of visual perception. "The value of mystery and drama does not depend on a sense of security. . . . Where is the 'sense of surety' in Picasso's 'Guernica'?" he asked. This reader wished to preserve the mysteries of artistic creation and reject the reductions of science. The role of science would need to be subservient and serve "a humanistic approach to architecture," but never rise to the level of "an esthetic creed."<sup>10</sup>

The *Building for Modern Man* symposium contained both sides of the contest between the humanists and the scientists that would emerge again and again in debates about design and human behavior. For example, in his symposium presentation, "Programming: A Creative Act," Richard Neutra called for more attention and funds to be lavished on the preliminary phases of design. Drawing from Freud, he invoked a psychoana-

lytic, even psychosexual, vocabulary and he championed creative genius. He rejected the "'fact-finding-farce' that confines the scope of any design ability and under all its dead weight is barren, without a spark of creative stimulation." His vision of programming as a creative act centered around the idea that "there is a physiological brain mechanism that seems automatically to link programming and design . . ." He suggested that science might uncover the mystery of how the mind creates marvelous visions in answer to problems which have not yet been rationally investigated. The *Building for Modern Man* symposium was significant for the design and human behavior idea because it called for more research and greater understanding of individual and social psychology.

## THE POPULARIZATION OF THE DESIGN AND HUMAN BEHAVIOR IDEA

### The Social Critics of the 1950s

In the twenty years after World War II, the United States experienced enormous social change. Now a world superpower, its people emerged from the war affluent, socially and geographically mobile, increasingly familiar with television, increasingly homogenized, with old patterns of race relations dramatically altered. Far more ethnically diverse before the war, homogenization became the principal lightning rod for social critics in the 1950s. These public intellectuals, exemplified by David Riesman, John Kenneth Galbraith, C. Wright Mills, William H. Whyte and others, focused their attacks on the corporation and suburbanization. As symptom and metaphor, the corporation and the suburb represented troubling change, inviting unprecedented criticism.

David Riesman's *The Lonely Crowd: A study of the Changing American Character*, which was first published in 1950 and sold well for 20 years, explored the problem of "other-directed" people, as distinguished from both "tradition-directed" and "inner-directed" people. This new character type, devoid of a sense of tradition or moral duty, was free to wander, and looked mostly to peers for guidance on behavior. "Other-directed" people, according to Riesman's diagnosis, were not really free because they followed the media like sheep to learn how and what to consume. Riesman's analysis, which by political necessity of the time had to avoid sounding Marxist, nevertheless addressed power and class and described a transition from an economics of craft and labor to the manipulations of salesmanship.<sup>12</sup>

A utopian society, in Riesman's view, would easily find "failure in play is a psychic hardship of the most intolerable sort."<sup>13</sup> Competence, expressed through the advanced forms of play such as sports and hobbies, but also through all-pervasive consumership, allowed an individual to negotiate the demands of his society. The "autonomous" character type, preferable to the merely "adjusted" or the "anomic" person, was the type most likely to find a healthy way out of conformity. Through developing competence in his autonomy, perhaps with the help of an "avocational counselor," the beleaguered suburbanite might learn to modify his crowd behavior; developing autonomy offered a way out of the rat race.

The avocational counselor, Riesman pointed out, was already a feature of the consumer-cultural landscape:

[I]t is not a question of shall we or shall we not have avocational counselors. They are already here, all around us. In the field of craftsmanship and taste exchanging, and in other fields of monopoly and veto-group pressure, we have seen that the private planners are energetically at work.<sup>14</sup>

Travel agents, hotel and resort directors, sports teachers and coaches, teachers of all of the arts, interior decorators, architects, city planners, journals such as *Harper's*, *Atlantic*, *Life*, and *The New Yorker*, waiters, salespeople of automobiles, fish flies, and golf clubs: all potentially filled the role of the avocational counselor.<sup>15</sup>

The domestic architect for the upper-middle-class client, Riesman offered, exemplified the ideal avocational counselor. Just as Riesman predicted the explosive growth in specialty retailing that is now the dominant feature of our culture, he also predicted a host of developments in the uses to which the single-family residence would be put. The wet bar, shuffleboard lane, craft room, the built in grill, and the "rec room" all rose in popularity in the 1950s, allowing families to keep up with neighbors and paradoxically to define differences. But more significantly, such features were loci for therapeutic leisure activities. The design of the home as a place for self-improvement and self-therapy, discussed in sociological terms by Riesman, reflected a broadening and deepening devotion to personal psychology.

William H. Whyte also helped to develop the American commitment to sociology and personal psychology through widely read articles and books such as *The Organization Man* (1956). In "How the New Suburbia Socializes" (*Fortune*, August 1953), Whyte engagingly explored the complex web of social interactions in Park Forest, Illinois, complete with comic diagrams and

photographs. Rejecting the thought that the new suburbs were a deviation outside mainstream American life, he instead explained them as “a response to some new facts,” and predicted their dominance in the landscape of the near future. He called the new suburbia the “second melting pot,” the site of the formation of new dominant values in America.

Exploring both the “homes-for-sale ‘superblocks’” and the rental courts, Whyte argued that location and physical layout related to friendship formation. Play areas for children, both planned and unplanned, influenced who got to know whom, as did the physical location of driveways and stoops, front lawns, and the position of the house on the street. With characteristic good humor, Whyte outlined the rules of physical layout influencing the formation of small social groups, and he demonstrated the complexity of the interaction stemming from these rules. Expressing sympathy for the social deviates, and exposing the tyranny of the social leaders, he showed how imaginary boundaries were built up between members of different social groups.

Whyte claimed social relationships, including the most intimate friendships, seemed predetermined, but also that people fully understood this to be true. He regarded this change in American attitudes as significant, although he obviously did not find it as alarming as America’s newly overwhelming conformity:

Once people hated to concede that their behavior was determined by anything except their own free will. Not so with the new suburbanites; they are fully aware of the all-pervading power of the environment over them. . . . with the increasing lay curiosity about psychology, psychiatry, and sociology, they discuss their social life in surprisingly clinical terms. But they have no sense of Plight; this, they seem to say, is the way things are, and the trick is not to fight it but to understand it.<sup>16</sup>

Echoing Riesman’s concern for the adjusted, the anomie, and the autonomus, and deploring the loss of the public street formed by a democracy of casual agreement, Whyte sardonically speculated on the possibility of designing the ideal suburban situation, “an optimum ‘happy’ block.”

Whyte pointed out that those who did not thrive in this kaffeeklatsching and socializing, “those who can’t make the grade,” were doomed to misery. He also wondered and worried over the discounting of the contributions of more important civic leadership activities than those promoted by the social leaders.<sup>17</sup> Reiterating Riesman, Whyte suggested the deviates and the autonomous

might yearn to avoid the group in favor of more fulfilling activities. Whyte, keenly observant and attuned to suburban anxieties, simultaneously made use of and popularized social scientific ideas about human behavior.

People responded to the ideas of social critics such as Whyte and Riesman because they provided accessible, up-to-the-minute social analysis regarding topics of intense interest: self-improvement and psychological betterment. Americans engaged in increasing individualism connected deeply with the idea that the single-family home might provide an arena for the psychological self. That science and technology, through sociology and psychology, were working on the larger questions of how people get along in the physical setting provided comfort and legitimacy for the self-improvement quest. The American who pursued self-improvement through the likes of Norman Vincent Peale and Kurt Lewin found psychological science and suburban home to be an intoxicating combination.

### **Richard Neutra, Domestic Architecture, and Psychoanalysis**

Richard Neutra gave further credence and celebrity status to the conflation of the psychological self and the modern home. Some recent scholarship on Neutra by Sylvia Lavin has established new connections between Neutra’s domestic architecture and psychoanalysis. Lavin points out that Neutra knew Freud and his followers, spent much of his life in analysis, and more significantly wrote extensively on the relationship between psychoanalysis and architecture. These writings were both published and, meanderingly and copiously, unpublished. Specifically, Lavin traces Neutra’s view, after Freud, of the psychosexual nature of the creative act, and draws intriguing parallels between Neutra and Wilhelm Reich. In Lavin’s analysis, both Reich’s orgone box and Neutra’s domestic architecture are material repositories for and producers of ideas about psychoanalysis.<sup>18</sup>

Neutra published his collection of essays, *Survival Through Design*, in 1954, at the height of his fame. Thomas Hines has described the broad acceptance of Neutra’s work:

Like much of his architecture of the fifties and sixties, *Survival Through Design* would come to seem less and less radical as the world caught up with it and consigned it to the category of the respectably déjà vu. Still, most critics of the early 1950s received it as one of the era’s most remarkable testaments by an architect concerned with the

larger environment as well as with its myriad microscopic components.<sup>19</sup>

*Survival Through Design*, and references to the book in the popular press, helped to reinforce ideas, in the increasingly widespread vocabulary of psychoanalysis and the social sciences, about the relationship between design and human behavior. Neutra introduced the vocabulary of psychoanalysis, with all of its attention to the self, into both the public and the professional-academic arenas.

### The Problems of Cities

In the 1960s, a concern for the self-actualizing individual and the suburban middle classes shifted to renewed concern for the problems of cities, and new spins on individualism. The civil rights movement and great society programs encouraged and supported attention to questions of equality and basic human rights and a renewed striving after progressive ideals. The "me generation" found refuge from, and engagement in, social upheaval in new kinds of psychologizing, experimentation with drugs, and exotic religious experiences. Spontaneity, first a countercultural quest in the artistic avant garde of the 1940s and 1950s, became the hallmark of the 1960s and was subsequently incorporated into the cultural expression of the mainstream.<sup>20</sup>

As the culture shifted, so too did the tone and focus of the design and human behavior idea. Born from the same set of forces, the reductive scientism of the design and human behavior idea was subject to the same criticism as corporate culture and suburbia. According to its critics, design and human behavior research should not be used to establish invariable standards and to manipulate people into appropriately conforming behavior, but rather should be used to promote freedom, spontaneity, and expanded consciousness. Among architects, flexible space, and user-built and adaptable buildings, expressed in tangible form the ideal of spontaneity and freedom. The phrases "community participation," and "advocacy planning" evoked the new processes whereby the disempowered urban poor, racial minorities, and the underprivileged would be invited to the table to accomplish the improvement of their own environments. Jane Jacobs' widely read book, *The Death and Life of Great American Cities* (1961), signaled and supported this shift in emphasis from the culture of the suburbs to the sociology of the public sphere. Although the focus of attention shifted from the suburb to the city, from the individual to the society as a whole, debate over the design and human behavior idea continued.

### ACADEMIC CONTEST

From the late 1960s to about 1980, design and human behavior courses became commonplace in the academic world. A number of articles in the academic press addressed the relationship between the behavioral sciences and architecture. Through these articles the contest over the design and human behavior idea re-emerged in a form similar to that of the *Building for Modern Man* symposium. Chief among concerns was the communication gap across disciplines and the goals of differing fields. Most commentators recognized that architects sought to build buildings and environments, that architecture was sometimes a business, and that academic social scientists had different goals. Social scientists did not necessarily seek to reach applicable solutions to problems, but rather empirical conclusions that could be repeatedly tested. Many of the articles published during the 1970s sought to address these questions of fit between the disciplines. All of these articles concluded the marriage between the social sciences and architecture was imperfect.

Robert Gutman, writing in 1968 in the *Journal of Architectural Education* on "What Architecture Schools Expect from Sociology," addressed the question of interdisciplinary relationship based on his experience at schools of architecture in England and the United States. Both institutions provided him with anecdotal evidence suggesting that architects sought specific information about how to design, and predictions about the performance of particular projects. He found the architects wanting not only in their commitment to the intellectual prospect posed by the questions of science, but also in their ability to see their own inadequacies:

schools which still are not exercised over the need to improve the programming capacity of their students nevertheless call upon sociologists to help in the design phases of studio work. . . . By the time the sociologist is called in, the students and their instructors have more or less made up their minds about what is good or bad, appropriate or inappropriate, in the aims which the client has set for himself.<sup>21</sup>

The view that if only architects knew how they might benefit from the social sciences and the appropriate time to call for help permeated the contributions of social science to the literature. The disciplines simply needed to learn how to work together better.

Tony Ward took a far less appreciative view of the contributions of the social sciences to architecture in a

1970 *Journal of Architectural Education* article entitled "Totalitarianism, Architecture and Conscience." Comparing Nixon to Hitler and American prisons to Third Reich architecture, he condemned what he saw as a contemporary totalitarianism and called for a renewal of conscience. He specifically rejected the interference of a particular disciplinary framework in architecture by saying, "the reduction of the person to an *it* is a common practice in everyday existence, but in the Social Sciences it has become pathological. Its technicians are totalitarian-born from a desire to dominate and subjugate." He apologized for the waywardness of his fellow architects, in pursuing the increasing scientism followed by other disciplines, as stemming from an inferiority complex:

Architects have been bombarded with feelings of inferiority from the members of other disciplines (who have been cavorting in scientific leaps and bounds), and they have taken refuge in either the absurd magic of "how dare you question my aesthetic judgements" or even more significantly in the alchemy of operational research and systems analysis.<sup>22</sup>

The alchemy of operational research and systems analysis to which he was referring had been at least part of the subject of a recent symposium and published volume, co-organized and edited by Ward and Geoffrey Broadbent, "Design Methods in Architecture."<sup>23</sup> The symposium was concerned with environmental structure, as well as more explicitly with questions of behavior. One symposium participant, philosopher Janet Daley, provided "A Philosophical Critique of Behaviorism in Architectural Design." Daley, inveighing against the claim to "straightforward empirical proof or disproof," drew an analogy between the circular belief system of behaviorists and the circular belief system of a psychotic (as described in R. D. Laing's *The Divided Self*). The language of Daley's critique would emerge in Ward's totalitarianism article two years later. Ward softened Daley's "psychotic" into "pathological."

## CONCLUSION

The design and human behavior idea is frequently understood as an aberration, a throwback to the activities of a few 1960s-inspired social scientists. Design and human behavior research and courses in schools of architecture are sometimes seen as the isolated interest of a few non-architect academic researchers looking for something to do. What has been more generally overlooked is how threads of the design and human

behavior idea are woven through related areas of American culture.

Within the field of architecture, the idea of design and human behavior has always been contested. On the one hand, few teachers or practitioners would dispute that the environment affects people; a general humanism has long been in place. On the other hand, the efforts of psychologists, sociologists, and others to influence the field of architecture have been resisted continuously. The contest, waged in journals and at conferences over the last fifty years frequently accused architects and designers of relying on "their own experience" instead of the loftier foundations of "pure science." This tended to suggest, for the convenience of detractors, that there are only two possible opposing points of view regarding the interaction of people and places.<sup>24</sup>

That designers of the built environment and social scientists have had to occupy the ground, however unwillingly, between the opposed categories of "artist" and "scientist" has probably been healthy for both disciplines. A review of present Design and Human Behavior courses in schools of architecture reveals a distinct change in approach from those courses offered before the early 1980s, corresponding with the rise in postmodern theory. Courses seeking to address questions of human behavior fall into a range of categories: culture and gender studies, socially responsible design, phenomenology of architecture, cultural criticism, and architectural research methods.<sup>25</sup> What looks like an abandonment of the design and human behavior idea is little more than an abandonment of the trenches. In all of these endeavors the fundamental premise of modernism remains. We are hoping to make progress on our relationships with one another through design and hoping design might lead us to greater human happiness.

## REFERENCES

- <sup>1</sup> Katherine Verdery writes, "More than simply a superpower face-off having broad political repercussions, the Cold War was also a form of knowledge and a cognitive organization of the world." see *What Was Socialism and What Comes Next?* (Princeton, New Jersey: Princeton University Press, 1996).
- <sup>2</sup> Thomas H. Creighton, *Building for Modern Man* (Princeton, New Jersey: Princeton University Press, 1949).
- <sup>3</sup> Roger G. Barker, *Ecological Psychology* (Stanford, California: Stanford University Press, 1968).
- <sup>4</sup> Joseph F. Kett, "The Culture of Self-Improvement," *The Encyclopedia of American Cultural and Intellectual History*, ed. Mary Kupiec Cayton, Peter W. Williams (New York: Scribner, 2001) vol. 3: 81.
- <sup>5</sup> *Building for Modern Man*, xi.
- <sup>6</sup> *Building for Modern Man*, 32.
- <sup>7</sup> *Building for Modern Man*, ix-x.

- <sup>8</sup> *Building for Modern Man*, 67.
- <sup>9</sup> "Form Still Follows Function," *Progressive Architecture* (December, 1947) 20.
- <sup>10</sup> *Progressive Architecture* (January, 1948) 16.
- <sup>11</sup> *Building for Modern Man*, 62.
- <sup>12</sup> James Hudnut-Beumler, "The Culture and Critics of the Suburb and the Corporation," in *The Encyclopedia of American Cultural and Intellectual History*, ed. Mary Kupiec Cayton, Peter W. Williams (New York : Scribner, 2001) vol. 3:27-34.
- <sup>13</sup> David Riesman, *The Lonely Crowd* (New Haven: Yale University Press, 1950), 367.
- <sup>14</sup> *The Lonely Crowd* 366.
- <sup>15</sup> *The Lonely Crowd* 364-365.
- <sup>16</sup> William H. Whyte, "How the New Suburbia Socializes," [reprinted from *Fortune*, August 1953] in *The Essential William H. Whyte*, ed. Albert LaFarge [New York: Fordham University Press, 2000] 32.
- <sup>17</sup> "How the New Suburbia Socializes," 41-42.
- <sup>18</sup> Sylvia Lavin, "Open the Box: Richard Neutra and the Psychology of the Domestic Environment," *A + U*, 371 (Aug, 2001): 12-31.
- <sup>19</sup> Thomas S. Hines, *Richard Neutra and the Search for Modern Architecture*, [London: Oxford University Press, 1982] 221.
- <sup>20</sup> Daniel Belgrad, "The Ideal of Spontaneity," *Encyclopedia of American Cultural and Intellectual History*, ed. Mary Kupiec Cayton, Peter W. Williams (New York : Scribner, 2001) vol.3: 65-74.
- <sup>21</sup> Robert Gutman, "What Architecture Schools Expect from Sociology," *Journal of Architectural Education*, vol. XXII (March, 1968): 14-20.
- <sup>22</sup> Tony Ward, "Totalitarianism, Architecture and Conscience," *Journal of Architectural Education*, vol. XXV (Fall 1970): 35-49.
- <sup>23</sup> The extent to which the symposium represented a backlash against such scientism was made clear in Ward's introduction with the words, "this work was to sow the seeds of my discontent." Ward's discontent led him to work with Christopher Alexander and Barry Poyner on "The Atoms of Environmental Structure," and met many of the symposium participants through the Alexander-Poyner circle.
- <sup>24</sup> This contest is a simple example illustrating what Richard Rorty has written about the dynamic between those believing science gives access to a higher form of knowledge and those who do not. see *Philosophy and Social Hope* (London: Penguin Books, 1999)
- <sup>25</sup> ed. Georgia Bizios, *Architecture Reading Lists and Course Outlines* (Chapel Hill, North Carolina: North Carolina State University) vol. 3, vol. 4 (1994, 1998)