

Practice and Education

in 21st century architecture:
a sociologist's view



Magali Sarfatti Larson
University of

author of *The Rise of Professionalism* (1977)

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Sociology has a long tradition of treating all forms of work alike, in the belief that observation and thick description are necessary to understand what different categories of workers do, by themselves and together. For instance, Bruno Latour and Steven Woolgar have been among the first to look exactly at what life scientists did at the Salk Institute of La Jolla; they revealed, among many other things, the close dependence of scientific researchers on the written text. Aaron Cicourel has analyzed very closely the conversations between physicians and patients, showing how the physician begins her diagnoses, and Gideon Kunda has followed closely the development of an "engineering culture" in corporate settings. In my work, I have asked the architects I interviewed how they worked, and got from some of them detailed and vivid descriptions; also, in the past, I have attended project meetings in a few very large firms. In *Architecture: the Story of Practice* (1991) Dana Cuff was able to follow the quintessential practice of the design studio and the relations between one architectural firm and its clients; we also have a description of the design studio by Donald Schön (Schön, 1984). But on the whole, professionals do not often let others observe them at work, in part because they think that lay people will not understand the process. Indeed, what could we say of how a writer works, of how many times she gets up to make tea or look out the window? How can we, as lay persons, know

the frustrations of dealing with different CAD programs, the neglect of subordinates' contributions, the problems of coordinating different specialists at weekly BIM (Building Information Modeling) meetings?

In this essay, I consider how different sociological approaches have directly or indirectly envisioned the relations between practice and education in professional architecture. My own position is that architecture cannot be entirely reduced to codified knowledge because, like other practicing professions, "knowing it" depends not only on the acquisition of complex formal skills but also on experience and on a culture of practice, both of which impart tacit knowledge through personal interaction and performances, in particular contexts and social networks. For those aspiring to become designers and builders, education and practice together define their projected future. How formal teaching is integrated with practice thus becomes a central issue in the making of a professional architect.

I start with an overview of architectural education in the crucial decades 1990-2010 by Stan Allen, a former dean of the School of Architecture at Princeton. His focus is on the United States, but one of his main points is that architectural education became increasingly global in this period. Indeed, large corporate firms went global and the architecture of capitalism became ubiquitous, but this would only have affected a minority of students seeking to prepare themselves for that kind of architectural practice in the centers of the global economy. More significant for education were, first, the internal transformation of architecture by the digital revolution, although in 1990 the computer had just started to radically affect drafting, specifications and design. Second was the relentless surge of global urbanization, which was changing in the deepest way the context and the meaning of architecture in its now global practice and products.

Architecture schools did not lead the way in absorbing and adapting to the transformations, but Allen contends that by 2010 they were well on their way to doing so. In the early 1990s, schools offered to some brilliant designers an audience for a career "focused on

competitions and a parallel body of exhibitions, publications and speculative urban research,” following a model that Rem Koolhaas epitomized (Allen, 2012: 6). However, taking architecture as a cultural practice (perhaps inevitably for designers who did not yet have access to major commissions) deepened the disjunction between theory, especially as it was taught in elite architecture schools, and the varied forms of commercial practice.

Allen traces the gap back to the end of the 1980s: on the one hand, to the influence of the Deconstructivist Architecture exhibition at the Museum of Modern Art and, on the other, to some significant conferences and publications that aligned architecture on humanistic disciplines, as these were taking a turn toward linguistics and post-structuralist philosophy. Architecture, Allen writes, “had to be reconceived as a kind of discursive, text-based practice itself ... By 1990, the schools could claim to be highly expert in questions of meaning, discourse and interpretation, while questions of technique and practice were ceded to the working professionals” (Allen, 2012: 7, 8); but as he wryly observes, the most deconstructive buildings only looked as if they were going to collapse.

The rest of Allen’s story maps the return of architectural education from abstruse critical theory to the culture of building and beyond. In our century, design and building have been transformed by the requirements and possibilities of digital design; PhD programs have increasingly moved away from the humanities’ individualistic and historicist approach, toward “collaborative, practice-based research” that is technically close to engineering specialties and not too far from the multidisciplinary practice of the largest firms. Increasingly, the inevitable concern with future ecological disaster and global urbanization has moved the design professions toward real inter-disciplinary practice. From the end of the 1990s, research centers with sophisticated urban programs emerged in architecture schools (like Koolhaas’ Project on the City at Harvard’s Graduate School of Design, or the multi-city Studio-X at Columbia). Also, architecture students and faculty joined multidisciplinary efforts such as, notably, the new

discipline of landscape urbanism. It is upon this pluralist, even fragmented background, that the Great Recession visited its destructive effects, pushing existing firms toward increasing flexibility and many aspiring architects toward alternative forms of practice.

Here, I want to examine what sociology has contributed –or could contribute—to the return of architectural education toward its praxis. I will look, first, at some recent and much quoted works that claim to bring a new sociological approach to the study of architecture. Then I will turn to older sociological treatments of art and architectural practice, including my own. While practice is the principal focus, I will look for the consequences for architectural education that are implicit in each approach. Finally, taking some general ideas about design from Bruno Latour, I will close with some reflections about how the training of architects can tie into some trends of architectural work.

Architecture as a field.

In the introduction, I did not choose to call architecture a profession, or a field, or an art world but only, implicitly, a practice and a form of work. The social scientists who have recently written about architects are not preeminently concerned with the practice of architecture. Their favorite sociological source is the late Pierre Bourdieu, whose important theoretical contributions have spanned, among many other fields, education, science, economics, literature, cultural production and the making of taste, without ever touching upon architecture. Following Bourdieu, the sociologist Paul Jones believes that the “replacement of the category ‘profession’ with that of ‘field’ is more than just a linguistic shift, as it has major implications for the way in which social research is carried out.” (Jones, 2009: 2522).

The notion of profession as a community of quasi equals (or, rather, of people equal in one nominal dimension) is one that I have criticized at length. The knowledge that professionals presumably share must be codified and standardized if it is to provide the first distinctive boundary between those in the profession and those outside, the

first branding. But even the shared, codified professional knowledge base is instantly de-standardized by hierarchies of prestige and power. First among them is the hierarchy of centers of training and the differential access to networks, social capital and distinction they provide.

At least since Karl Mannheim, the sociology of knowledge has been critical of any situated statement about the world. Not even Talcott Parsons, or those who studied professions from his approving perspective, took at face value what professionals said about themselves. Paul Jones, however, takes it as Bourdieu's discovery that "the seemingly 'natural' or 'neutral' judgments that characterize any field are conditioned by social context and ... reflect something of broader power relations and the imperatives of other fields" (Jones, 2009: 2522).

Now, if we really wanted to follow Bourdieu, the field of architectural production would include the various organized segments of architecture, as well as the established training centers, whose success in recruiting students depends in large part on the credibility of the term profession. But also, the field should be expanded to include other producers of discourse and artifacts, other experts and actors including, last but not least, the clients. As Bourdieu would see it, they are all players in a social space held together by particular relations of force and power, where some of them pursue both specific and general kinds of capital. This very complex expanded field, however, is not what these recent authors choose to study in architecture.

Authors like Garry Stevens, Helene Lipstadt, Paul Jones and, didactically, Helena Webster, want to convince us that Bourdieu's concepts bring a whole new understanding to architecture. They admonish us, like Lipstadt, that profession for Bourdieu is a "folk concept" sneakily smuggled into scientific language. Nevertheless, these theoretically ambitious scholars concentrate on the anointed creators of monumental landmarks, the buildings that today as yesterday become "iconic architecture." They do not study the actual practices by which

buildings are produced, and describe only in general terms the connections of form with social power and with the aspirations of different ruling class groups. Semiotic analysis, when it is offered, remains close to the elite architects' predominantly aesthetic narratives about their own works. In fact, Garry Stevens and Paul Jones invoke Bourdieu's sociology to justify restricting analysis to "those architects able to aestheticize their practice" (Jones, 2009: 2524). My main objection to this kind of work is, precisely, that it reduces architecture to its aesthetic dimension.

The much quoted Garry Stevens has outlandish ideas about how sociologists understand "profession;" he presses for the concept of field because it abolishes "any notion that referring to architecture as an art, science or profession has any utility" (Stevens, 1998: 83). Stevens divides the architectural field in two subfields, taken from Bourdieu: in the restricted field or "favored circle," elite architects as well as dominant educators compete for eminence, struggling "to be recognized as great creators or thinkers." Recognition is the essence of what Bourdieu calls symbolic capital and others might call cultural authority; it is specific to each field, where it is accumulated according to specific rules of the game. The readily discarded mass sub-field consists of "subordinate architects," who compete "for economic success and professional power," and, according to Stevens, imitate the elite's formal innovations without understanding their meaning. Obviously, the elite designers reserve for themselves the right to decide what can properly be considered architecture and the role of taste arbiters (Stevens, 1998, 88ff). Stan Allen too sees only two kinds of players in the architectural practice of the early 1990s: "the large corporate offices, still responsible for the majority of commercial work, and a smaller number of high-design practices ... working in the cultural sector" (Allen, 2012: 5). His partial view confirms that, in the main, architects decide how much recognition to accord each other.

Stevens is quite critical of architectural education, although he does not tell his readers that schools provide a captive audience and a

labor pool for the mandarins of the restricted field. He mentions, but does not investigate the relationships among the “critics, commentators, firms, schools, magazines, publishing houses, museums and galleries” that populate the restricted subfield. Yet, they have a role in creating a public for architecture and thereby in helping the elite architects’ quest for rich clients and important commissions, on which their reputations ultimately depend.

Stevens, thus, reduces the complexity of the architecture field to a binary division that does not explain how the field functions. On the other hand, when he forgets Bourdieu’s theory, he tells us some interesting things. He puts together a data base of the major architects included in the Macmillan Encyclopedia of Architecture from 1400 to 1940, and analyzes it by means of demography and network theory. He finds that the constancy of productivity by age and the slow doubling time of the ranks of major architects (especially if compared to the ranks of major scientists) in any period, explain a small, self-contained field, dominated by older men who act as gatekeepers toward younger talents and are deeply preoccupied with the field’s history. For a long time, architectural careers were slow.

Stevens sees new trajectories, new careers and new possibilities arising for the anonymous mass (all those who do not accumulate “symbolic capital”) but he has little to say about them. In fact, while the giant firms remain in control of the largest share of building, the multiplication and diverse trajectories of smaller, agile firms, adapted to changing markets and pursuing design excellence in niches or in a variety of commissions, is one of the features of twenty-first century architecture that may have survived the bursting of the bubble in 2008.

For Paul Jones, architecture is essentially an art, whose intimate connections with power through the centuries he wants to expose. In articles and in his recent book, *The Sociology of Architecture*, his main assumption is that the field-specific values of architecture are aesthetic, and he uses Bourdieu to allow some autonomy to his

protagonists' creative efforts despite their undeniable subordination to powerful clients. Yet, he also invokes the critical approach of the British school of cultural political economy to appreciate "the specific ways in which corporate and state actors and institutions mobilize architecture as one way of making political economic strategies socially meaningful" (Jones, 2009: 2520, ital. mine). Jones presents detailed accounts of the project that aimed to regenerate Liverpool's waterfront and of the European Capital of Culture project (Jones, 2011: Ch. 6 and 7). But his focus on the monuments per se is traditional, with only a cursory analysis of the urban settings where they rise.

Cities are not their monuments: Paris is not beautiful because of Notre Dame, and Detroit could not be saved (as not even Bilbao was) by another Frank Gehry extravaganza. Surely, architectural icons can define public spaces and serve as meaningful identity markers. Yet what should matter to sociologists is not the architects' intended meaning but for whom the architectural objects are socially meaningful. Jones tells us that the Liverpool public preferred Norman Foster's scheme, and he implies in passing that some Liverpool Vision board members objected to Will Alsop's Cloud because it would have created redundant office space and lowered rents. However, since he mainly sees architecture as a struggle for meaning (in both artifacts and discourse), he explains the problems of its commission but does not delve on the project's economic impact --as artists themselves, according to Bourdieu, do not. The possibility of social change that modernist architects stubbornly vested in architecture, defined by its functions, is also elided. Jones's field approach has little to say about how decisions were made, or about the various actors' relations to the project or the design. Bourdieu's theory (influenced as it was by Marxist analysis) corrects the philosophical idealism for which architectural objects can be conceived independently from the social context that allows them to exist. But Jones's correction is only in very broad strokes and does not come close to a comprehensive empirical analysis of architectural production, as Bourdieu does for other cultural fields.

Helene Lipstadt performs a different operation on Bourdieu's sociology of cultural production. Literature and painting are "pure" fields, in which the world is "turned upside down," for the power of "the economic," its purposes and pursuits, is denied. It is impossible to apply this "denial" to an endeavor like architecture, which so eminently depends on the economic and, more precisely, on the clients' capital, to build almost anything of notice. Lipstadt turns then to the notion of "field effect" so that we can continue talking about architecture as a field of cultural production, governed by a specific pursuit, which is not economic gain or worldly power but architectural fame (Lipstadt, 2003).

She draws on her extensive knowledge of architectural competitions to argue that ever since the first famous competition for the gates of the cathedral of Florence in 1401, these rituals are "an analytically relevant indicator of the field effect." Because of their cost and the irrational calculations they involve, they are, like Louis Kahn said, a sacrifice competitors make to architecture. Lipstadt observes that the exhibition and publication of the drawings made it possible for architects to publish designs that would never otherwise have become public (as a building is public). Architecture can thereby become like an artistic field: architects in competition become more autonomous and more disinterested, acting at last as irrational deniers of economic power. That is the "field effect."

Therefore, since we can consider architecture as a field of cultural production, Lipstadt quotes thirteen titles by Bourdieu and collaborators in which architecture is never explicitly discussed –for good reason, since it can in no way be thought of as a field that denies "the economic." Real capital is ultimately what enables the unequal distribution of field-specific symbolic capital, prestige and recognition. Besides highlighting the longevity of the competition ritual, Lipstadt's approach suggests that sociologists too, like critics and commentators, can contribute to pulling architecture toward the arts that are performed individually.

These recent sociological works offer little help in moving architectural theory and education toward the reality of architecture as it is practiced. Bourdieu's theoretical approach does not lead here into his empirical emphasis on cultural production, markets and careers. The celebration of creators and design preserves the classic Beaux-Arts approach of cultivating a taste for the beautiful through both architectural history and recent exemplars. Talent is what matters, even if it is only displayed in competitions that allow architects to practice fictitious architecture for fictitious clients with unlimited funds. These "Bourdieuian" sociologists of architecture provide us with a restricted view that does not move toward the changing reality of building and for which the core does not change, whether we call architecture a field or something else. For all their obeisance to Bourdieu, they do not analyze distinction, but reproduce it: the emphasis on aesthetics implicitly (and sometimes explicitly) amalgamates architecture with other arts; the effect is to keep alive the romantic infatuation with the architect as supreme master builder, celebrated by Goethe, yes, but also, alas, by Ayn Rand. A similar infatuation has produced the idea of "cinéma d'auteur" in another inexorably collective, but moveable and much less durable field of cultural production.

Architecture as an art world.

The word "collective" brings forth Howard Becker's influential conception of the art world, which is not so distant or different from the comprehensive "field" concept in Bourdieu. Becker writes:

"All artistic work ... involves the joint activity of a number, often a large number of people. ... The work always shows signs of that cooperation. The forms of cooperation may be ephemeral, but often become more or less routine, producing patterns of collective activity we call an art world. The existence of art worlds, as well as the way their existence affects both the production and consumption of art works, suggests a sociological approach to the arts. It is not an approach that produces aesthetic judgments ... It produces instead,

an understanding of the complexity of the cooperative networks through which art happens.” (Becker, 1982: 1-2, my ital.)

Nowhere is this truer or more evident than in architecture. In no other recognized art, perhaps not even cinema, in the age of the digital camera, is the list of “activities that must be carried out for any work ... to appear as it finally does” more extensive and more complex, requiring as it does high level technology, high caliber skills often contributed by other professions, and sophisticated systems of production that can be enormously expensive.

Becker outlines the kinds of activities that must be performed, though not all and not all at the same time, for works of art to exist. They are reflected in the division of labor that underlies an art world; it is useful to review them rapidly, for they help us to underscore the idiosyncrasies of architecture. Conception comes first --“an idea of what kind of work is to be made and of its specific form” (Becker, 1982: 2 and ff). As there is no thought without language, so there are no properly architectural ideas independently of type and function, of what can be designed and built. It is tempting to say that the idea in architecture does not usually come first, for it depends on first getting a commission; however, we do not only have Ledoux and Boullée’s visionary drawings to think of but also Antonio Sant’Elia’s never-realized utopian designs, yielding him influence incommensurate with what others built. Today, we should consider that the Internet permits the instant and limitless diffusion of architectural and design ideas, as attested by the multiplicity of on line publications.

Execution, in all its variety, comes second. In architecture, it can involve a solo architect working with relatively advanced technology and possibly outsourced help, or a staff of hundreds, depending on the complexity of the commission. The means of execution –materials and equipment-- vary from medium to medium, but in any case they must be manufactured and distributed. In architecture, this refers us to the whole sector of construction, as crucial for the economies of advanced societies as it has always been through history; today, we may also have to add the appropriate IT sectors and all

the related industries. If, in many other arts, fund raising can imaginably be supplemented by the artist engaging in other activities to make a living, from selling her works, to teaching, to the proverbial waiting-on-tables of performing artists, in architecture fund-raising is the function of that crucial player, the client, be it a rich patron, a corporation, a government agency or, at a different level, a community, a NGO, a modest family. Becker's final observation is that all these activities suppose "conditions of civic order such that people engaged in making art can count on a certain stability (*Ibid.*: 5)," but cost and frequent dependency upon large funds make architecture, if it is an art, one exceptionally vulnerable to economic cycles.

I mention only briefly the residual category of "support," which includes for Becker "all sorts of technical activities ... as well as those which free the executants from normal household chores." In the obstinately male field of architecture it may not only involve the designers' wives, but, once again, every category of construction worker, from managers, to the migrant workers who are trafficked to work on prize-winning iconic projects in the Middle East (Wainwright, 2014). For Becker, an art world must also include someone, an audience of whatever kind —to respond to what the artist has produced and appreciate it. This is a notably complicated problem for architects, for they must not only satisfy their clients, indispensably and above all, but also the users of a realized building, and even a wider public that will be solicited by critics and commentators, who must also be pleased. Critics are one notch down from the aestheticians (to whom I would add historians) who qualify a field as art and provide "the rationale according to which all these other activities make sense and are worth doing" (*Ibid.*: 4); critics, aestheticians and historians play a crucial role in the construction of architecture as an art field, a point to which I shall return.

Becker notes that "if one or another of these activities does not get done, the work will occur in some other way" (*Ibid.*: 5) but this is not quite applicable to architecture. Surely, Sant'Elia exhibited his drawings and the development of print allowed unsuccessful architecture

competitors to publish their designs (Lipstadt, 2003) which the web can diffuse today at unimaginable speed. But drawings must be realized in order to be architecture and exist in our life world. Architectural projects may change, have their scale truncated, their materials cheapened and the whole thing abandoned, and yet the idea may be resurrected by its authors another day and with another chance. Yes, but the program must be similar. It is true that the Palladian style could be used in buildings of different scale and function, but today, despite similar scale, the desire to be original contradicts the repetition of an idea. We cannot believe, for instance, that Alsop Architects' Fourth Grace Project in Liverpool (commissioned in 2002 and scrapped in 2004) "occurred in another way" in any of the firm's later projects, like Clarke Quay in Singapore or West Bromwich's The Public (see Jones, 2011: 123-138). Therefore, notwithstanding the importance of aestheticians and critics and the paramount importance of the media in our time, in architecture the program comes first. And it belongs to the client.

In sum, art worlds "consist of all the people whose activities are necessary to the production of the characteristic works which that world and perhaps others as well, define as art" (Becker, 1982: 34). Included in the networks that constitute the art world (or the field, if we think it is that much better a term) are the educators, who provide the training necessary to different categories of participants. Here, an organized profession has the advantage of having defined and regulated access to training and to practice, with accepted gatekeepers and procedures for entry. However, because architecture still claims a privileged relation with aesthetics, the field must accommodate those who consider themselves "artists" or creators. This will not only include the already recognized creators, but all the aspirants attracted to architecture because of its creative aura.

For Becker, artists are a "sub-group of the art world's participants who, by common agreement, possess a special gift, therefore make a unique and indispensable contribution to the work, and thereby make it art" (Ibid: 35). Some evidence suggests that most architects

feel that “what differentiates architects from other partners in the construction industry is their aesthetic sensibility and skill” and that “the goal of architecture is to create aesthetically pleasing spaces, whatever the scale or scope” (Cohen and Wilkinson, 2005: 781). Other evidence indicates that even mammoth design firms in mammoth construction projects need to mobilize the “culture of architecture” if they must communicate with a design “star.”

Still, the trinity of “commodity, firmness and delight” remains a guide for the production of sound architecture. Even without considering context or function or politics, what is at stake in this “art world” is much more complicated than the label of gifted designer, jealously guarded by the ‘favored circle.’ For the designer’s gift to translate into symbolic capital and then, in turn, into a relatively stable accumulation of commissions and real capital, it must be embedded in an efficient and technically sophisticated production machine, which is the firm. The different types of architectural firm, dominated by the rise of the global design and construction firm, ground and modify the “art world” of architecture. I will return later to the idea that various incarnations of the firm can provide some guidance for architectural training (as, in fact, I believe they already have).

Becker’s sociological approach to the “art world” suggests a notion of what training would be most useful for aspiring architects, and it is a clearly multidisciplinary idea. The architect-aspirants do not only need to learn design, or delve in glorious exemplars of the present and the past. They need to understand construction, not only technically but also within the social and political constraints that define it differently in every case; they need to understand the economics of construction and profitability and also, today, something of the geopolitics in which global firms (or alternative forms of architecture) operate. In any case, they need to understand the new technologies on which building is based, at least clearly enough to know what expertise they would have to summon. In any type of practice they would have to understand environmental impact and sustainability. And to move away from iconic architecture, toward the idea that

architectural beauty can reside in any type of construction, also orients training toward modest exemplars, vernacular architecture, and different types of practice.

The firm –or the equivalent locus of production-- should have priority in a sociological analysis of architectural practice, and this priority should be reflected in the architects' training. This "real-world" imperative contrasts with the view of architecture that critics and famous design architects cooperatively (though perhaps unknowingly) sustain: that is, the publicized fiction that great buildings are conceived by gifted individuals, who then may become celebrities in the world where the transnational capitalist class creates real estate value by commissioning monuments to its own rule (Sklair, 2006). Before turning to the firms, I will consider briefly how this fiction originates and is sustained.

Inventing Art through Discourse.

Aestheticians elaborate the paradigms within which artifacts are classified as beautiful, as artistic, as good art (instead of humdrum, non-art or bad art). Critics apply the paradigms or pre-existing aesthetic systems in a way analogous to the scientists who do normal science in Thomas Kuhn's theory of scientific revolutions, fitting nature into the theoretical boxes of a stable paradigm. Critics explain to special albeit lay audiences what makes a building good and deserving of attention, praise, and eventual replication. Relative consensus about aesthetics and implicit moral judgments (for aesthetics classify artifacts and their makers as more or less deserving) produce stable reputations. That consensus, I submit, has disappeared from architecture, where judgments, moreover, are always inflected by type and scale.

In the restricted circles that form the prime audience of critics, the reputation of architectural works and of their alleged individual creators is now more labile and more disputed. At stake, however, is not the label "art" but the mediatic fame of architecture's global stars

and the value of their signature. The famous signature defines the building as “not ordinary” and worthy of attention; therefore, to have architecture count as art, it is important to sustain the fiction of gifted individual architects-as-creators and, possibly, as the only creators that matter. Fame in the media matters but it must still overcome the ironic fact that the architect’s authorship is neither protected by copyright nor, often, visibly acknowledged (Larson, 2004).

Becker sharply points out “the title ‘art’ is a resource that is at once indispensable and unnecessary to the producers of the works in question. It is indispensable ... if you believe art is better, more beautiful and more expressive than non-art, if you therefore intend to make art and want what you make recognized as art so that you can demand the resources and advantages available to art ... It is unnecessary because even if these people tell you that what you are doing is not art you can usually do the same work under a different name and with the support of a different cooperative world” (Becker, 1982: 133).

This is particularly true in architecture today: in different domains of practice architects produce good or even excellent works that have nothing to do with one another, although their particular audiences and their clients may reward them with prizes, accolades and, more importantly, repeated commissions. Well-known writers on architecture and media critics, meanwhile, continue producing discourse and narratives that refer almost exclusively to what they call “architectural icons,” or “expressive landmarks” or, more simply, monuments of one or another kind. But what is the relevance of aestheticians and critics for the increasingly complex training in architecture? I surmise that they play an indirect role in attracting recruits to a profession distinguished by its allegiance to creativity and aesthetics. Also, the aestheticians and the most theoretical among the critics play a not insignificant role in the academic and esoteric part of graduate studies in architecture, where some students learn how to become sophisticated and “theoretical” interpreters of the built environment.

Authors like Stevens, Jones and others in their vein think that social science can demystify the purely aesthetic discourse of critics with the commonplace idea that professionals and their fellow-travelers are never neutral and never disinterested, especially not in architecture, which is inevitably complicit in its clients' strategies. For Stevens, the design stars (the "starchitects") are precisely those best able to aestheticize their practice. Hence we should expect from them an "aestheticizing" discourse, but he and Jones also believe that architects are hired to give "social meaning" and an aura to buildings. They seem impervious to what users want, or think, or to the varied and almost hidden uses of design. In fact, many of the contemporary commissions of architecture consist of ever higher towers, for which architects propose new dress, slick appeal and audacious forms. Buildings that we could call "institutional" are different: star designers are summoned to regenerate the impoverished old cities from which global capital has fled, by devising exceptional and discordant landmarks in search of a "Bilbao effect."

These sociological accounts do not examine anything built around or beyond the iconic monuments of a global world. They do not look at what non-iconic architects do to introduce rationality in the spaces of everyday life; they never consider modest, struggling forms of practice, and the architecture that is everywhere around us. They never ask Robert Venturi's question "Is not Main Street almost alright?" Despite their critical intentions, the new sociologists' focus on signature architects confirms architecture as the production of isolated creators that depend on the media for fame, and for whose practice "form is the function" (Jones, 2011: 120).

As one critic, Alexandra Lange, points out, buildings are the constraining or enabling frame within which social life unfolds: "Buildings are everywhere ... We walk among them and live inside them but are largely passive dwellers in cities or towers, houses, open spaces and shops we had no hand in creating" (Lange, in Arieff, 2012). Lange vehemently attacks contemporary critics for encouraging indifference to the everyday:

"It is our city the New York Times architecture critic should be trying to save, not the gargantuan works of Frank Gehry or Jean Nouvel (or Philip Johnson)... In his defense of the Nouvel tower, Ouroussoff comes closer than ever to embracing the new as his preeminent critical value... Architecture criticism cannot simply be about what's new because that leads precisely to the globe-trotting, star-gazing, architecture-as-sculpture approach we have now. What we need is criticism that treats renderings and buildings as different, since users are the ultimate critics ... We need criticism moored to place, and to the history of that place, so that the ways forward multiply (and don't only involve building something curvy)." (Lange 2010, ital. mine)

Noting the elite architects' relations to the operation of global capital and the marketing of places does not by itself illuminate the semiotic correspondences between form and power. For instance, Jones writes: "Koolhaas has embraced the impact value of architecture, and has taken highly contentious commissions ... while at the same time defending the spaces within such projects that engage in forms of discursive and spatial radicalism (Jones, 2011: 148, ital. mine)." We have no idea of what this may mean. Jones does not mention whether the iconic buildings admit public access or not –a quality that may not depend on private property alone (Sklair, 2005: 491-492). Yet, inaccessibility obviously multiplies the importance of exterior images, which is all the excluded public will see. Nor do these writers look for the cost per capita and net civic returns of the Bilbao model. For capital, what matters is real estate value: attractive or unusual form only helps to move beyond the famous dictum "location, location and location" and to increase the profitability of floor space. Koolhaas, in fact, was probably the first elite architect to embrace the possibilities created by the market in the constant flux of capitalist cities.

The "Bourdieuian" sociologists of architecture, like many critics, still prevalently discuss the art, or field, or profession of architecture as the production of "a relatively small number of firms identified with individual architects, often with substantial reputations based more

on publication than on actual buildings.” (Sklair, 2005: 488(-489). Like architects of the “favored circle,” Stevens and Jones do not admit the powerful global firms that design the architecture of world capitalism into the elite roster. They say nothing about the fact that the largest, richest and most productive architectural-engineering firms in the world seldom overlap with the Pritzker prize winners or other acclaimed celebrities (Quirk, 2013). Moreover, as I already mentioned, they neglect the architects’ practice, where the collective work of design actually takes place.

In sum, the newer forms of sociological writing elide human agency, which is the characteristic effect of both architecture’s ideology of form and the myth of the architect as individual genius. The critic Christopher Hawthorne admits his and his colleagues’ complicity in ignoring the contribution of the celebrity’s collaborators. Naming them makes for dull copy, he says; so, if the architects’ names are mentioned at all, the “genius” gets individual credit. Hawthorne remarks that it is quite difficult to make the press recognize the designers’ role, while also noting the celebrities’ ambivalence about acknowledging collaboration (Hawthorne, 2010). Social scientists who still take their cue from the “great designer” approach to architecture are ultimately reaffirming something like the regressive Beaux-Arts bias in architectural education. We turn to the units of architectural production --the firms.

Bringing the firm back in.

When we look at the self-presentation of the largest firms in the world, their sites open with an introduction of the firm as a collective. Some large firms emphasize the team approach to every project. The number of LEED (Leadership in Energy and Environmental Design) certified architects is highlighted. We are in the corporate world, of which the major architecture-engineering and architecture-development firms are definitely a part, despite their comparatively smaller revenues. Like every architecture firm, they list and showcase their projects, but they tend to insist on their efficiency, technological

sophistication, adjustment to the clients' needs, and, more recently, sustainability and green design, which we should approach with due skepticism, for grass-planted roofs hardly register against the tons of cement that had to be produced or the amount of electricity that must be consumed in high-rise towers. The founders and partners present themselves like businessmen (there are few women at the top) with sober self-confidence in brief descriptions of their titles, their special expertise, their responsibilities and their contributions to the firm's corporate structure. It would be interesting to compare this to the language that graces the profile of celebrity designers: the hypothesis might be that even if they are the head of large firms, their intellectual and philosophical ambitions would affirm the symbolic capital that resides in their sole person and can hopefully be transformed into real capital by the firm.

Old-fashioned sociologists center their analysis on the firm. The reasons for this choice are obvious: the firm is as much the unit of production in architecture as it is a basic unit in the sociology of organizations and the sociology of work. In 1983, my graduate students and I followed Judith Blau's lead and analyzed the professional firms included in the AIA's 1978 Profile of Architectural Firms. Despite the great limitations of the data, we identified a few traits that were coherent with Blau's study of Manhattan firms and could serve as a basis for future research. First of all, small firms predominated then as they do today. Although we could only measure size by its association with juridical type, sole proprietorships (with a 4.3 mean number of employees) represented 46% of the sample; in AIA's 2012 survey, firms with 1 to 4 employees were 63% (they could of course represent different juridical types). Second, these firms were young, confirming the entrepreneurial nature of architectural practice and its vulnerability to economic conditions. Third, the strong correlation between the number of firms and the number of employed architects in each state showed that a majority of the latter depended on small firms for employment. Fourth, at that time architectural practice was mainly local, at least for AIA member firms: all juridical types (strongly associated with size, as I said) had well over 80% of firm activity in the same

state. However, even in the late 1970s (and much more so today) economically leading firms were largely absent from the AIA Profile.

Two opposite segments of architectural practice did not fit the symbolic image of cultural authority certified by the major association's awards: one, the economic leaders, extremely underrepresented in the survey, and not at all in the awards. The other, the bulk of the sample, was the struggling entrepreneurial firms with one principal, few if any employees and mostly small scale projects that the organized profession does not even notice. Both diametrically opposed "marginal" segments seemed adapted to their markets, albeit vulnerable to their fluctuations. We thought then that they might well be responsible for most of what architects design: the economic leaders in physical and economic volume, and the small entrepreneurs in number of projects.

Blau's 1974 and 1979 studies of Manhattan firms embed architectural merit and the quest for aesthetic values in the economic and social reality of the firms' life. In 1974, she found a situation that is probably different today because of the extraordinary importance of global practice for major New York firms: "The havoc created by the economic recession," she wrote, "totally disrupted any natural selection process that may have been operating during normal times, and no type of office or characteristic of office carried advantages for ultimate survival" (Blau, 1987: 130). Interviewing working architects, she concluded that "the singular master value of design creativity" was like ideological glue that seemed to hold a fragmented and threatened profession together. Because they value creativity, however, "most architects are destined to fail to realize their aspirations and they know that" (Ibid: 59). Her implicit diagnosis: the emphasis on aesthetic values would have to change, and alternative activities, including participation in decision-making and responsibility in the firm, had to be imbued with imagination and dignity. Blau's findings were confirmed in the later study: firm size and the reliance on corporate clients were extraordinarily important both for the quality of work and for the firm's survival (Blau and Lieben, 1983).

The conditions studied by Blau have probably not changed for most firms as much as the rise of “starchitects” might tempt non-sociologists to believe, and education may not have changed enough to transform the convictions of rank-and-file architects. Blau observed a creative decline in the corporate firms (while problems of management are often recorded today by their employees) and she saw that the smaller firms “cannot stand still for they lack the resources of the large, core firms to do so, and unless they seize the opportunities and thereby surpass core firms, they fail” (Ibid:144). These may still define two trends: employed professional architects often appeared to dislike the rationalized organizational structure on which larger firms depend for efficient and lasting operations. And the corporate firms that dominate the field did not enjoy then –and probably do not enjoy today-- recognition from the fellow architects who bestow awards. Client satisfaction and repeated commissions were not, either, guarantees of survival in a very complex field that can be pummeled by a changing and uncertain economic situation (Ibid: 110-111).

Writing later, at the end of the 1980s, Robert Gutman noted the increasing number of important American museums with architectural collections, the growth of architectural titles in major publishers’ catalogues, and the popularity of signature architects like Michael Graves, to conclude that architectural culture was becoming a commodity (Gutman, 1988: 86-96). He foresaw the global consolidation of the cultural landscape in which notable buildings become icons and their architects become celebrities through mass media enablement.

Gutman usefully classified the architectural performers into three major categories: “strong idea firms” (among which he already included Gehry, plus Meier, Venturi and others), “strong service firms” like SOM, HOK and KPF, and “strong delivery firms” that are likely to be represented most often among the world’s largest for they build the most, although “architectural culture” does not notice them. Leslie Sklair later pointed out that the transnational capitalist class has different relationships with each kind of architectural producer, while it admits the largest corporate multi-service firms as players in its ranks (Sklair, 2005).

Gutman's study focused on the changes in the political economy that immediately affected the context of architectural practice and became determinant factors: the growth of the demand for architectural services and its changed structure; the potential oversupply of credentialed entrants; the new skills required by the scale and complexity of buildings (to which we should add now the effects of ever-changing IT and of sustainability requirements); the professionalization of the building industry and the much greater sophistication of client organizations; the intensification of competition with other building professions and of intra-professional competition among firms; and greater interest and intervention of the state and the public in architectural concerns (Gutman, 1988: 97). The increasing difficulties firms had in becoming and remaining profitable was one outcome of these varied dynamics.

Gutman capped his analysis by outlining five challenges that firms would have to meet in an increasingly disorganized profession. I will just mention those of most direct concern: (1) solving the problem of oversupply of practitioners by adjusting the supply and the demand— a problem that pits architects seeking employment against schools seeking more students; (2) devising a consistent philosophy of practice representing the architects' aspirations, but also responding to the demands of increasingly organized clients and builders; (3) maintaining a secure hold in the market of design, which meant staving off the encroachments by rival professions and maintaining high morale and high motivation in a competent organization, in order to produce good work. (Gutman, 1988: 97-111). While the last point brings up the problem of organizing architectural practice in a manner that offers rewarding work to design professionals, the first alludes to serious tensions between education and practice.

Gutman notes, without giving any evidence, that it is in the large and successful firms that architects may find opportunities for advancement, especially if they have chosen to specialize in technical areas that "architectural culture" does not recognize (Ibid: 110). The idea-firms, "celebrated for the design quality of their work" often turn out

to be “dreadful employers” for architects with design aspirations “because the principals make all the interesting and important design decisions” and they are incoherent mentors. Firms with a strong commercial orientation might put more value on the staff’s scarcer design skills, while the firms that concentrate on smaller local projects may well work as old-fashioned ateliers where principals serve as mentors for younger designers (Ibid: 109-110).

After our recession, an experienced architect who was laid off from a large firm and works now in a 5 person office echoed Blau and Gutman, saying: “Conceptual work in architecture is only about 5%. After that, the work is based on code analysis, construction drawings, practical ideas and money-saving practices.” She confirms that “the firm loses personnel which it kept on during the crisis, personnel with cumulative knowledge and cumulative experience ... Now that things are starting again, they hire new cohorts with the latest IT savvy, while the experienced middle-level people have moved sideways. Not only they did not see a future in the big firm, but also much architectural work is repetitive, and therefore boring.” (Interview with LL 12/28/2013).

And the principal of a middle-sized Manhattan firm specialized in public sector commissions described how it becomes possible to recognize good ideas, even from a novice: “We are an old-fashioned firm, and we try to get everybody to do everything. Each partner takes care of a few special clients, then everybody is on the project ... For instance, in a conversion of an industrial building to a 180 bed homeless shelter ... one of the employees, a recent Pratt graduate, said “why don’t we go wild?” and suggested clearstory windows rather than skylights, which created many problems with their horizontal glass and possible leaks. The clearstories solved the light, rain, and control of ACHV issues, while also creating a beautiful light and space.” He adds: “We could justify the expense because it was required by law... we have learned that when you cannot justify a move, you lose it.” (Interview with AK, 2/16/2014).

This last part is what you cannot learn in architecture school.

I conclude this section with Dana Cuff's *Architecture: The Story of Practice*, still a standard reference for architecture programs. Cuff sees education as a part of architectural practice, starting from her own training. Bergström writes that Cuff experienced in the 1970s "a remarkable tension between office practice and the heroic approach to architecture socialized in education" (Bergström, 2014: 11); she believed that "the ethos of a profession is born in schools" (Cuff, 1991: 43) and was confident that changes in practice could start in the academy, where future professionals are socialized into the necessary habitus and tacit knowledge.

Cuff's book describes in detail practices that are found in all architectural schools: the core of the curriculum is the design studio, with its characteristic "crit," "jury" and "charrette," which help to produce an idiosyncratic and somewhat insular culture for architecture students. In fact, the studio is a 19th century model that the French Ecole des Beaux-Arts adapted from the age-old model of apprenticeship; its constitutive elements -- the large loft-like setting, the design problems and the coaching by a tutor-- imitate the architectural office (Webster, 2008: 64). Cuff, however, includes in the process of design all "those human activities that contribute to and shape the final form. From office staffing to client relations, from telephone calls to negotiating a contract --all relevant activities become part of design" (Cuff, 1991: 248). Obviously, this exceeds what goes on in a school's studio; moreover, standing by Bergström's critique, "her proposals to change the studio into a more collaborative culture, instead of questioning its dominance altogether, contributed to the idea that the design studio held a natural and deserved position as the most important feature of architectural education." (Bergström, 2014: 14).

Cuff does not search for the balance between "applied science and artistry, classroom teaching and reflective practicum," which the philosopher Donald Schön, one of the most noted enthusiasts of the design studio, nevertheless recommended (quoted by Bergström, 2014: 17). In fact, Schön's emphasis on balance was easy to overlook,

for he extolled the virtues of the studio not only as the paramount teaching model in the design professions, but also as a general paradigm of learning through “reflection-in-action” (Schön, 1983, 1985). He offered much comfort to architectural educators, but a learned and convincing critique by Helena Webster shows that the studio, however valuable, follows an old-fashioned transmission model of teaching and learning, an incomplete and “top-down” method, effective in aligning “students’ intuitive aesthetic values ... with those of the architectural field” (Webster, 2008: 66, 69-70). Despite the hierarchical and persistently male culture that transpires in Schön’s account (or possibly because of it), the design studio functions as an effective induction process into a profession where entrants must learn to respect mainly the judgment of other architects.

Cuff’s recommendations to broaden the design studio assume that education could change the conditions of practice, which she resolutely wants to place at the center of the curriculum. However, the dominant design studio, with its emphasis on individual achievement, cannot prepare the future architects for the low average pay or the tedium of work that focuses only very occasionally on the conceptual development of design, even though charrettes may prefigure the inordinately long hours of work. It does not replicate the large number of participants to be coordinated in real projects, nor does it reproduce the important and at times constraining relations with the client, on which all projects depend. It is an incomplete simulacrum.

That was then. Today, the studio encompasses much of what architects must know and apply to create and carry out a design project. James Cramer, founding editor of *DesignIntelligence* and co-chair of the Design Futures Council, notes that “both sustainability and business acumen can be taught well in the studio.” His comments on the rankings of architecture schools that his journal assembles are enlightening: admired schools, like Cal Poly at San Luis Obispo or Virginia Tech, emphasize computer applications in design and construction. Cramer hints that there is a trend toward STEM (science, technology, engineering, mathematics) and possibly away from art and theory,

while leading schools concentrate on green materials research and sustainability. A school like Auburn University retains its reputation for excellence in community service, with particular construction methods and study of materials (Cramer, 2014).

Even at the time of Cuff's writing in the 1970s there were more complete attempts than the traditional design studio to reproduce practice in the school context. The Yale Building Project, for one, had introduced design-build and community work in the M. Arch curriculum since the 1960s, and the design-build pedagogy spread: in 2011, there were about 100 design-build programs throughout the 123 accredited architecture schools (Gjertson, 2011). Students flocked to these programs; Samuel Mockbee's and D.K. Ruth's famed Rural Studio at Auburn University remained a paragon for the whole profession even after the founders' death; but the programs faced serious challenges. They were rarely well integrated into the rest of the architectural curriculum or well-supported by university administrations fearful of extra costs; moreover, they were trying to teach growing numbers of students in one semester. This situation placed inordinately high workloads on the faculty and threatened them with marginalization within the larger programs.

Tellingly, design-build seems to have come under attack by academic faculty for being un-scholarly, and by the design-oriented because "the act of construction limits design complexity" or the projects "looked normal" (Gjertson, 2011: 25). Yet, as a professor wrote in their defense, the programs "provide an educational platform on which to present architecture as a complex structure of ethical positions and actions." Working in them, students "experience the act of construction as a process of 'doing the right thing' ... ethical conduct emerges from the student's confrontation with difficult choices" (quoted by Gjertson, 2011: 24). One could say that they are humble but complete interventions by aspiring professionals in the built environment.

In sum, architecture schools must still teach basic tools of design and construction. However, these tools have changed decisively, moving

away from iconic form toward multi-disciplinary endeavors and joint degrees, projects abroad and critical exploration of the most advanced technologies (Amelar, 2013). I believe that sociology should look at the production of architecture for what it is -- social actors performing collaborative work—and that implies de-emphasizing the role of the genius architect and of iconic architecture. When I studied the passage away from modernism, which amounted to a paradigm change in the discourse of architecture, I talked with the major designers of the postmodern shift, but not only with them: I interviewed more modest recent award winners, and I paid special attention to the give-and-take of juries who tried to confirm by their awards the emergence of new conceptions of design (Larson, 1993). Discourse too is made collectively.

A note on architecture as a STEM occupation.

The supply of professional design has not been adjusted to the labor market, a matter of profound concern since the 1980s. We cannot ignore employment statistics entirely, for they express what happens in architectural practice and affect directly what happens in schools. Architecture in the U.S. suffered so much from the Great Recession that it earned unwanted distinction in the New York Times and Salon as the second worst field from which to graduate. The fallout from the real estate bubble was dramatic: the revenues of architectural firms declined 41.3% in 2009-2011, compared to a peak growth of 54.4% in 2006-2008. Even construction declined less than that (26%), although it was already losing steam in the base period. The large majority of firms, which, as we know, have fewer than 4 employees, showed low net revenues and presumably had to absorb big losses. Concomitantly, the unemployment rate among architects increased by a staggering 450% in that same span of time --double the next highest rate among STEM occupations, 225% for electrical engineers. Recent architecture graduates, with 12.8% unemployment rate were somewhat better off than majors in information systems (14.7%), while graduates with some experience did better, with the same unemployment rate as the overall economy (9.3%).

The holders of graduate degrees did even better, with 6.9%. Yet, in 2012, a survey of 1,007 designers reported that both firms with more than 50 employees and firms with less than 10 anticipated some kind of shortage of architects in 2014 “resulting from a combination of designers exiting the profession, baby boomers retiring, a lack of skills among architects looking for work, and less talent in the pipeline as job prospects discourage students from entering the field.” The prospective supply of professional architects was diminishing, without any special attempt by the schools to produce this once-desirable effect. In 2012, both large and small firms, especially the smaller ones, were having great difficulties finding employees skilled in sustainable design (Hanley, 2012, ital. mine).

The Bureau of Labor Statistics reported 107,400 jobs in architecture proper in 2012, and projected a faster than average rate of growth by 2020 for an estimated total of 126,000. STEM occupations, together with those in healthcare, community services and arts, were estimated to grow faster than all other occupational clusters. However, the larger aggregate category of “Architect and Technical” [including building, structure and landscape architects and designers, cartographers, geographers, mapping and surveying technicians] was not projected to return to the 2007 pre-recession high of 550,000; after a loss of 80,000 in 2010, it would reach only an estimated 520,000 in 2020 (Carnevale et al., 2013). Architects proper may fare better than that, but we should not wish for the speculative boom years to return. The questions asked by Thomas Fisher in 2011 – “What will architecture in the deleveraged world of the new millennium look like? What part will it play in defining the new normal?” remain valid.

Architecture, design and teaching in the Anthropocene.

I have been polemical in my critique of sociologists who aspire to make great theoretical innovations in the study of architecture while confirming the obsessive concern with form and monumental landmarks that is the field’s particular ideology. This kind of analysis

appears particularly incongruous in a lingering recession. Bruno Latour, the brilliant sociologist of technology, seems to me more apt for reconfiguring the problems of architecture than Pierre Bourdieu, who did not study it among the cultural fields “that deny the economic.” Architects often learn to neglect how a building is used or useful, while critics emphasize heroic gestures as the paramount expression of the field and ignore their collateral damages. Latour has offered sociologists a path breaking analysis of the scripts contained in inanimate objects (Latour, 1988) and, more recently, important suggestions for a philosophy of design. I can only outline them here.

Latour argues that the concept of design, which has grown enormously in the elements it covers and the areas of production to which it applies, has five advantages over the idea of creation: first, it “implies a humility that seems absent from the word ‘construction’ or ‘building’ ... In design there is nothing foundational”. Second, there is in design “an attentiveness to details that is completely lacking in the heroic, Promethean, hubristic dream of action ... a careful attention to detail, craft and skill, was precisely what seemed reactionary [in our recent modernist past] as this would only have slowed the swift march to progress” (Latour, 2009: 3). Third, because a design has meaning, “wherever you think of something as being designed, you bring all of the tools, skills and crafts of interpretation to the analysis of that thing ... When things are taken as having been well or badly designed then they no longer appear as matters of fact ... their place among the many matters of concern that are at issue is strengthened” (Ibid: 4, ital. mine). Fourth, design “is never a process that begins from scratch:

to design is always to redesign ... there is always something slightly superficial in design, something clearly and explicitly transitory, something linked to fashion and thus to shifts in fashions, something tied to tastes and therefore somewhat relative” (Ibid: 5). Fifth, design “necessarily involves an ethical dimension ... when you say that something has been “designed”, you are not only authorized but forced to ask whether it has been well or badly designed ... it is as if materiality and morality were finally coalescing” (Ibid: 6). Needless to

say, objects that become matters of concern and moral entities from having been just matters of fact are the essence of politics. Moreover, “all designs are “collaborative” designs – even if in some cases the “collaborators” are not all visible, welcomed or willing” (Ibid: 6). Let us consider what these principles involve.

Latour’s conception of design stands in clear opposition to the great iconic landmarks and the phenomenal buildings of global capitalism. A form of design that is attentive to detail, craft and skill is concerned with a building’s life cycle and use: sound design does not produce the kind of iconic building that may shed entire slabs, or where users do not understand the basic paths toward exits or elevators, utilities are poorly placed and major pipes break. Surely, those are mainly problems of construction, but the designers of buildings must know enough to guide their birth and life in the physical world. Also, because design is not a solitary conceptual activity, the designer, no matter how gifted, must learn collaboration from the very beginning. And in the increasingly threatened planet where we build, there cannot be “unintended consequences:” the first commandment of ethical design in the Anthropocene is to do no harm. This means not only learning but also teaching transiency, transformation and “a light footprint.” If no design begins from scratch, a prize goes to context, adaptation and redesign.

Values like craft, attention to detail and collaborative work may be reflected in what major commercial clients demand now, after the recession. Industry experts tell us that clients no longer tolerate projects that do not meet schedule or budget or waste materials; they do not only demand productivity but also that designers take into account the project’s life cycle and its costs, and that larger and ever more complex professional teams collaborate seamlessly (Simpson, 2015). And while major clients are not likely to spontaneously make “matters of fact” into “matters of concern,” the time and cost constraints of construction may change how they view its political consequences. Even in large global projects, architects and other design professionals, as political players, may have to learn how to go beyond the usual cast of characters, toward users and neighbors.

What can this mean for architectural education? Most firms experienced considerable loss of talent as an effect of both the recession and the retirement of experienced architects. Many consider that they “can’t rely on academia to adequately prepare students for what they will encounter in the new era of practice, so they must provide training themselves” (Simpson, 2015). We know, moreover, that fewer students have entered the pipeline. The publicly traded mega-firms that have grown to dominate the field may not continue to expand or restructure it for long (Cramer, 2014); however, they are big, they are global, and they look for talent. Given shortages in supply, they will be increasingly pressed to develop talent “at home,” encouraging licensure and certification, leadership, and knowledge of new technologies. A huge firm like Gensler has an internal “university” – “A Learning Council of about 300 drawn from the regional and local offices and the firm’s 20 Practice Areas” (Cassidy, 2012).

The large firms with global practices need specialists, experts and multi-disciplinary team players. For this kind of work, students will have to learn continuous learning in order to master changing technical fields and develop social and integrative abilities together with organizational savvy and business acumen. That’s one path. It will have to encourage specialization and tolerate divergence. It is not, however, what Latour would call the path of design.

The path that could be reconciled with the humility inherent in design is practiced today in an astonishing and marvelous diversity of forms. These forms are attentive to the context, which is primarily urban for a very large number of remarkable young firms. They are attentive to materials, with which they experiment and which they do not waste. And they are attentive to users – knowing how to elicit, in fact, their input and participation. Their buildings are mindful of cost and function. These extremely diverse forms of architecture also live in a global world, but it is different from the star designers’ global world. Here, the social entrepreneurs of the Skoll Foundation, the sustainable architecture of the Locus Fund and the Shack/Slum/

Dwellers International matter more than the architects who “know how to aestheticize their practice” --more the Rural Studio and the Urban Think Tank, Elemental and the Metropolis/Proyectos Urbanos (to just pick a very few names) than Delirious New York or Norman Foster’s Project Orange Moscow. After Katrina, after the tsunami, after the Japanese earthquake, after permanent and cruel wars, redesign may indeed matter more than design.

In order to be ethical, architecture does not have to become a charitable enterprise; there will always be many kinds of architecture and many kinds of clients, and many kinds of design and designers will suffer in an economy that does not reward “do-gooders.” Architecture schools, however, may have to prepare their students for diversity and fluctuations and educate them to find beauty in modest buildings that shelter many forms of life competently and without bombast. Star designers are not created in schools, although good architects can start there and learn there the elements for doing architecture in a world in crisis.

If ethical architectural objects must become “matters of concern,” as Latour says, architects can no longer say morally that the workers are not their responsibility, because they are. Civic responsibility for the death and exploitation involved in building gigantic sculptures and monumental towers should be obvious. But what architects consider most worthy, even in the awards they give themselves, should acknowledge at last that the age of the pyramids is passed. These curved or rectangular masses of cement, plaster and glass are not going to age like Giza in the teeming cities around them and in a looming ecological disaster. Perhaps architects should first of all accept that they may be designing at the end of the Anthropocene, and not forever.