Notes on Post-criticality: Towards an Architecture of Reflexive Modernisation

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In his *The Language of Post-Modern Architecture*, Charles Jencks famously pinpoints the moment of the death of 'Modern Architecture' at 3.32 P.M. 16 March 1972.[1] This was the instant that dynamite summarily destroyed the first of St. Louis's Pruitt-Igoe public housing towers designed by Minoru Yamasaki. If one tolerates the notion of something as globally dispersed and feral as 'modern architecture' dying at all (it didn't), the absurdity of freezing the clock of modern architecture begs our forgiveness as a dramatic literary device designed to entice and propel the reader into Jencks's novel work.

In the past five years there has been a surge of critical work suggesting a similar turning point has occurred in relation to postmodern theory, particularly in architecture. Reproducing the trope of history as a teleological succession of 'isms', one dying to make room for the next, several authors have declared the death of theory, the end of 'critical architecture', the demise of postmodernism, etcetera. The degree to which this turn is cast in the mould of 'the death of…' is more a matter of writing style than historiographic rigour; no one has yet indulged in the Jencksian device of recording the time of passing on postmodernism's death certificate. Acknowledging the absurdity of such an endeavour, let us suggest the following as a poignant and useful reference point in the unfolding of the discourse around the changing role of theory.

A conference called by the editors of one of the premier institutions of postmodern theory, the journal *Critical Inquiry*, assembled its most valued contributors for a rare public discussion on the future of theory. On 11 April 2003, the University of Chicago's W.J.T. Mitchell introduced the discussion on an optimistic note pronouncing the journal's aspirations to become 'the Starship Enterprise of criticism and theory'.[2] Opening up the panel of prestigious authors to questions from the audience, a graduate student asked what good is criticism and theory if 'we concede in fact how much more important the actions of Noam Chomsky are in the world than all the writings of critical theorists combined?' Noam Chomsky, the Massachusetts Institute of Technology Professor Emeritus in Linguistics, is doubly distinguished as the father of the generative grammar theory of linguistics that revolutionised several disciplines, and the most articulate and damning critic of the collusion between the media and the global projection of hegemonic political and economic power. Despite Chomsky's distinction as the eighth most cited scholar in history (after Marx, Lenin, Shakespeare, Aristotle, the Bible, Plato, and Freud), the unnamed graduate student was referring instead to Professor Chomsky's impact on the critique of power as a 'public intellectual'.[3]

The idea to demolish Pruitt-Igoe did not emerge fully cooked from expert-driven deliberations in the halls of power, but as a chant from an auditorium packed with Pruitt-Igoe's few remaining residents. As theatrically described by Tom Wolfe, it started as a low pulse in the back of the hall and grew in volume to proclaim a rowdy consensus: 'Blow it

up!'.[4] If the paragons of *Critical Inquiry* assembled in Chicago had shrugged off the unfavourable comparison between the utter toothlessness of critical theory and the relative traction of Noam Chomsky, the event would have been just one more unremarkable insistence of 'speaking truth to power' (with no discernible consequence). In this case however, and seemingly to its own surprise, 'power' embraced its own denunciation. Referring to events from the civil rights struggle to the launching of the second Iraq war just days before their colloquium, the standard bearers of critical theory concurred, adding, in the words of University of Illinois at Chicago Professor Sander Gilman, 'not only have intellectuals been wrong almost all of the time, but they have been wrong in corrosive and destructive ways'.[5] The eminent postcolonial literary critic and Harvard Professor Homi Bhabha found himself virtually alone in defending the social and political relevance of intellectual work, although his statement that 'even poetry' has served the cause of resistance movements may in fact be another way to make the same point. Bhabha would appear to be asking: if much intellectual work of the past, 'even poetry', has proven relevant to the negotiations of power and the meaningful improvement of the human condition, how are we to account for the apparent irrelevance of critical theory?

If the voices of change emanating from St. Louis led to the literal destruction of an architectural idea, what do the voices of change in Chicago have to do with architecture? The cross-fertilisation between literary theory and architecture during the 1980s has been both heralded as the welcome source of renewal in the wake of the disaffection with the built outcomes of high modernism, and cursed as a distraction from architecture's core principles and values. Whether blessing or curse, the connection remains significant and the discontents in both literary criticism and architecture became suddenly more vocal in the years and months before and after the April 2003 *Critical Inquiry* colloquium. In 2002, the first explicit articulations of what has become known as the 'post-criticality' argument were ventured. Both the insights *and* the shortcomings of this argument have fuelled a partial re-examination of postwar architectural thought and production in potentially useful ways.

Critical theory

The history of 'critical architecture', put forward by the 'post-critics', traces back to the Italian architect/historian/theorist Manfredo Tafuri's introduction to his 1968 *Theories and History of Architecture* and the subsequent readings and misreadings of this work. In the context of a failing 'modern project' and discredited expert knowledge, Tafuri pointed out that the architect/critic could no longer judge the value of a work based on a set of merits and faults from the perspective of everyday life in the manner of a Jane Jacobs.[6] Instead, the architect/critic was to evaluate a work based on that work's relation to its larger ambitions, the framing of theoretical aspirations, accessible to the critic only 'through a temporary suspension of judgement'.[7]

After Tafuri, two figures loom large in the propagation of a new ethos of 'critical architecture' that came to dominate the elite US East Coast architecture schools in the 1970s and 1980s. The theoretical 'autonomy' of the design work by Peter Eisenman served as the key reference point for the critical architecture further developed through teaching at his Institute for Architecture and Urban Studies and The Cooper Union in New York. Eisenman transmitted his ideas through the journal *Oppositions* (1973-1984), which he founded, and the Architecture New York (ANY) conferences and publications. In keeping with Tafuri's call, Eisenman offered processes of architectural production safely removed from the conditions of technocratic governments and the commodifying forces of the free market. Pointing at Tafuri's Marxian critique of the corrupting influences of capitalism, Eisenman constructed a theoretical framing for his projects, set apart from

the commercial interests that make up the bulk of architectural commissions. Instead he developed his forms in a series of Petri dishes untainted by the impurities that might force compromise in the quest for a theoretically rigorous architecture.

K. Michael Hays provided the canonical interpretation of Tafuri for the US, foreshadowing and preparing the soil for the further penetration of literary theory into the realm of architecture.[8] He edited the influential journal *Assemblage* (1986-2000) and teaches history-theory courses at Harvard. Tafuri had, apart from being the first to articulate the conditions of a critical architectural production, also been the first to point out the risk that such an approach might produce, namely an 'architecture of the boudoir' that is insufficiently engaged to affect meaningful social change.[9] This note of caution was no longer emphasised by Eisenman and Hays. In Europe, Frankfurt School critical theory retained a commitment to radical social change in contrast to the depoliticised American theory-of-criticism. Europe's 'critical architecture' appears to have developed 'through a *temporary* suspension of judgement' in which experimental cultures spawned in Petri dishes are eventually brought out of the laboratory into the hothouse, and perhaps even transplanted to the field. The apotheosis of postmodern theory and the penetration of literary criticism into the world of architecture came with the techniques of 'deconstruction' as performed by French theorist Jacques Derrida. In 1988, Philip Johnson and Mark Wigley co-curated the exhibition *Deconstructivist Architecture* at the Museum of Modern Art, self-consciously echoing the paradigm-establishing significance of Johnson's 1932 exhibition *The International Style*. Building upon critical theory's position that language, and thus all cultural production, is contingent upon the system of signs and symbols radically disconnected from human experience and dominated by operations of hegemonic power, Derrida held that 'there is no meaning outside the text'.[10] Derrida's textual 'autonomy' was brought together with the autonomous framing of critical architecture in a series of collaborations between Derrida and Eisenman around the time of the *Deconstructivist Architecture* exhibition. What Derrida celebrates in prose, Eisenman induces through poetic effect. The loose association between text and its interpretation extends to a promiscuously open relationship between architectural form and meaning or experience. Even readers uncomfortable with authors more or less openly complicit in their own '(mis) readings' feel liberated by the absence of any one-to-one association between an architect's intentions and the dweller's experience. Thus the common critique during the 1980s and 1990s, that the cross-fertilisation of the two disciplines has produced both bad philosophy and bad architecture, would appear to be more damning for philosophy than it is for architecture. Indeed the 'deconstructivist architects', Frank Gehry, Zaha Hadid, Rem Koolhaas, Bernard Tschumi, Coop Himmelblau, Peter Eisenman and Daniel Libeskind, have thrived in the ensuing two decades. Though the notion of deconstruction has slipped out of the lexicon of popular criticism, three of the seven 'deconstructivist' architects have won the Pritzker Prize, and all have seen their paper visions move from the exhibition halls into the built reality of some of the most significant commissions of the new century.

The story posited by the authors of the 'post-criticality' argument traces its critique back to Rem Koolhaas's 1979 'Delirious New York' and subsequent deviation from the anything-but-commercial orthodoxy of critical architecture in the 1990s.[11] Even though Koolhaas was not the first to point out the troubled relationship between critical theory and the creative act, the post-critical retrospective history highlights his apparent defection as salient.[12] The common ground of the 'post-critics' lies in the disaffection with critical theory's 'negation' of the Vitruvian imperative to build our way towards a better world.[13] How long, they seem to ask, can critical architecture delay the inevitable moment when its hermetically

sealed laboratory cracks open under the impact of widening social disparities, wars of choice, and an unfolding environmental cataclysm?

While there is a sense of convergence among the post-critics on the key reference points they consider relevant to their developing story, they remain cautious in too quickly jumping to what happens next. With a nod to Hickey,[14] Somol and Whiting proceed within the recognisable framework of theory while venturing beyond the critical autonomy of a 'hot' avant-garde to examine a set of 'cool' projects with an eye towards their performance in solving (non-theoretical) problems in the world of everyday experience. Here the works of Rem Koolhaas anchor claims to theoretical rigour while gaining currency by engaging 'real world' problems along with issues of popular culture, commerce, globalisation, etcetera. Violating the sterility of critical architecture's Petri dishes, Koolhaas drops in a handful of dirt to see what happens next. Where Somol and Whiting proceed from a position of the critical insider, dissatisfied with what they identify as a stagnating orthodoxy, Michael Speaks starts out from a similar critique but veers sharply towards a rejection of not just critical theory, but theory itself. Echoing Gilman's renunciation of postmodern theory at the 2003 *Critical Inquiry* colloquium, Speaks writes, 'I would argue that theory is not just irrelevant, but was and continues to be an impediment to the development of a culture of innovation in architecture.'[15] In the place of theory, Speaks offers 'intelligence' (as in information, CIA-style), and the serial speculations of emerging practices employing Computer Numeric Control (CNC), rapid-prototyping technology. Speaks's market-driven 'innovations' are in opposition to Hays and Eisenman's critical 'alternatives'.

The response to Speaks's attack on theory (the piece was provocatively titled 'After Theory'), was overwhelmingly a plea: 'Don't throw the [theory] baby out with the [postmodern theory] bathwater'.[16] Despite this outcry, curriculum committees already uncomfortable with theory found new support for their struggle to squeeze sustainability and computer skills into an already packed course schedule of professional accreditation requirements. Even if 'Theory' the college course goes away, theory itself is not going anywhere. As a precondition for moving forward, theory, like memory, doesn't disappear, it simply goes into hiding while we struggle to find a language that allows us to discuss it openly once again. We have travelled this path before. The danger is not that we proceed *without* theory; the danger is *thinking* we can proceed without theory.

More troubling than the attack on theory, is the suggestion that being 'critical' is a problem. Any argument in favour of being *less* critical fails to acknowledge properly the political economy of forces that architecture as a profession imposes upon architecture as a discipline. Given that the post-critical argument was christened during the same period that gave us the contested 2000 American presidential election, the destruction of Manhattan's World Trade Center (Minoru Yamasaki's other towers), and the launching of the second American war on Iraq, is the problem then about being 'critical' or about not being critical *enough*? Is it the problem that 'resistance is futile' or that, having withdrawn from the conversation, hardly anyone notices? The unflattering comparison between the authors of *Critical Inquiry* and Noam Chomsky derives from Chomsky's traction as both a theorist *and* a social critic. In *Perspecta 33: Mining Autonomy*, Hays's reminder that what makes architecture 'critical' is the production of 'alternatives' to the dominant social order, would seem to neutralise the post-critical position declared a few pages later.[17] The evidence suggests the problem is not about being critical but instead about how these 'alternatives' have been inscribed by limitations, imposed by the formal orthodoxies reproduced in the schools associated with 'critical architecture'.[18] The emerging engagement celebrated by 'post-crit-

icality' threatens to displace an aesthetic hegemony with a technology-driven free-market hegemony. A perhaps more socially relevant interdisciplinary move is suggested by a more precise location of the problem in architecture's orthodoxies and its resonance with a growing literature around the notion of a reflexive modernisation.

Reflexivity

Facing their own disciplinary crises, sociologists turned towards a 'new pragmatism' that has proven remarkably productive. Building upon Bourdieu's work, a rich literature has been increasingly informed by problems of everyday life. In contrast to the course proposed for a 'post-critical' architecture, recent scholarship growing out of sociology demonstrates the benefits of being both engaged *and* critical. The better-targeted critique of 'critical architecture' echoes a sociological literature on the ossification of modernisms that not so long ago were still characterised by 'movement, flux, change, and unpredictability' and by the phrase 'all that is solid melts into air'.[19] Scott Lash has moved freely among several disciplines to examine the nature of modernity. Like the post-critics, Lash re-examines the postwar history of modernity, but draws his insights from a rich cultural studies literature, and particularly on modern urbanism via Baudelaire, Benjamin, Bourdieu and Berman.[20] The history of high modernism imprinted on American cities offers a particularly vivid demonstration of how powerful utopian diagrams suffer when physical and social infrastructures impose ideological fixity. The stunning failures of the American city are both cause and effect of the 'critical' distance maintained by American architecture, and stand in stark contrast to the successful engagement of architecture in the Dutch landscape at the intersection of post-criticality and reflexivity. Bart Lootsma has hinted at the possibilities for understanding the growing body of primarily Dutch architectural production as constituting an architecture of reflexive modernisation.[21] Working at a distance from the American debate between 'critical' and 'projective' architecture, Lootsma points at much of the same Dutch architectural work identified by the post-critics. Given the stakes, Lootsma's speculations seem to offer a firmer basis for moving beyond the critique of late twentieth-century architecture than that produced by the debate in North America. Lootsma's key reference point is the 1994 publication of separate essays by Ulrich Beck, Anthony Giddens, and Scott Lash in a single volume bearing the title *Reflexive Modernization*. The term 'reflexive' is used in both its technical sense, as 'a relation that exists between an entity and itself', and refreshingly in the more familiar sense of the term 'reflex': 'an automatic and often inborn response to a stimulus […] without reaching the level of consciousness'.[22] As developed by Beck, Giddens and Lash, 'reflexivity' is not only the most characteristic attribute of the systems associated with the second modernity, it also provides a means for identifying processes that signal the transition from the first or 'simple' modernity, to the second or 'reflexive' modernity.

Before examining what a reflexive system looks like, we first elaborate on how the notion of reflexivity helps to draw a distinction between first and second modernity. The *first* process of modernisation operates radically to challenge, transform and ultimately displace the institutions and practices of pre-modern societies that history has documented from around the eighteenth century to the present. For example, the process of modernisation is conventionally credited with replacing God and a set of life chances fixed at birth, with the institutions of the nation-state, modern science, democracy, the corporation and its infrastructures, disciplinary knowledge, the nuclear family, and the aspirations of class mobility.[23] The second process of modernisation operates upon these very institutions previously established by the first modernisation - reflexively, as defined above, as a relation that exists between the process of modernisation and itself. Thus the products of the first modernisation are subsequently

subjected to a further stage of modernisation. The examples used to illustrate this second or reflexive modernisation are familiar enough to those who have followed the recent critiques of globalisation, much of which has been elaborated elsewhere by Beck, Giddens and Lash. As the process of modernisation turns to operate on entities themselves wrought by an earlier modernisation, the nation-state recedes from dominance with the rising role of trade blocks (European Union, ASEAN, etc.) and the regional city-state (Shanghai, the Randstad, Southern California, Dubai). The scientific certainty, rational discourse, and expert knowledge that swept aside earlier ontological sources of meaning and authority, are themselves increasingly contested by competing claims on truth, many of which are resurrections of modernisation's earlier victims, as with the rise of religious fundamentalisms and indigenous belief systems. Finally, just as modernity breached class borders between the proletariat and the bourgeoisie (culturally if not materially), the second modern phase is witnessing multiple border re-mappings that allow subject identities to become increasingly a matter of personal choice (often negotiated remotely over the internet) against a shifting and disorienting grid of reference points. These are the markers by which the second modernity has come to be identified.

Returning now to the nature of reflexive systems, it is useful to first describe Beck, Giddens, and Lash's central critique of the first modernity. The growing discrepancy between the promises of modernisation and the actual outcomes experienced is largely produced by a set of unexpected side effects of the modern project. These secondary consequences of technological progress, rather than being minor inconveniences, have proven resistant to further 'technological fixes'. Instead they have grown in significance to such an extent that they are unacceptable to a growing segment of humanity. While some unpredictable outcomes have yielded to further efforts, or proven manageable over time, others have come to loom so large over the human condition that it is increasingly difficult to avoid a re-examination of our core faith in modernisation itself. Unfortunately, denial remains a popular alternative to facing these challenges head-on. As Jared Diamond and others have shown through histories of social 'collapse', human societies are capable of ignoring evidence of the cliff up ahead and just keep on running.[24] Beck, Giddens and Lash add their own far-reaching evidence to the mounting body of work by suggesting that the global environmental crisis is just such a threat.

The appeal of the technological fix can be difficult to curb as seen in the fanciful, but still well-funded, notions that a nuclear missile can be shot out of the sky, or that mirrors can reflect just enough sunlight back into space to compensate for the heat trapping effects of greenhouse gases, without causing significant side effects of their own. But where the modern mega-project would proceed without consideration for side effects, and the postmodern critique would dash the hopes of any chance of success, the second modern project seeks out positive feedback loops capable of responding to changing conditions in real time - reflexively, as defined above, as an automatic response to a stimulus - including the emergence of unintended consequences.

The most famous of all such reflexive systems is the law of supply and demand as articulated in the eighteenth century, most famously in 1776 by Adam Smith.[25] When called upon to account for the ominous persistence and even acceleration of inequities in the distribution of the benefits of modernisation, proponents of the new global neoliberal economic order are quick to celebrate the reflexive qualities of capitalism in terms of a liberating self-regulation. It is perhaps a useful reminder that prior to September 2008, it proved difficult to resist the seemingly something-for-nothing magic of free markets. Behind the rhetoric of free market reflexivity, the legion of capitalist cogs spends most of its time actually working

against the reflexive operation of markets. The cultural infrastructures of capitalism reproduced in the media, business schools, and a steady flow of new books on business practices dominated by the task of consolidating and fixing 'competitive advantages' and 'dominant market positions' to resist the corrective mechanisms of financial and ideological marketplaces better. The Adam Smith portrayed in neoliberal mythology is almost unrecognisable to the Adam Smith who espoused the necessity of government intervention against these monopolistic tendencies of firms, until conditions approach a status of 'perfect competition'. This conditional necessity of regulation was justified by the recognition that the profit motive drives the engine of social progress in reverse just as fast as it drives forward – 'bads and disservices' contribute just as much to the economic bottom line as goods and services.

About a half century after Adam Smith first described the magic operation of the free market's invisible hand, an amateur mathematician published a pamphlet entitled 'The Tragedy of the Commons' that has become, since its rediscovery and study in 1968, a seminal work of the environmentalist movement.[26] Using the model of shared grazing rights, Garrett Hardin points out that markets do a poor job of accurately modelling the capacity of environments to supply natural resources for production and receive the trash, effluence and smoke of factories. Classical economic models are notoriously flawed in their basic assumption that nature is both a virtually endless source of raw materials and a bottomless repository for waste products. In the absence of either assertive governance, or reflexive feedback mechanisms to moderate the excesses of capitalism, the more one reaps and the more one dumps, the higher the profits. In terms of systems theory, the feedback mechanism of modern capitalism rewards negative social outcomes. In terms of economics, these negative social outcomes carry the label 'externalities', indicating that their impacts are only poorly, or not yet, factored into the operation of markets. The economic mechanisms capable of registering the limitations of both supply of raw materials and the capacity for dumping only kick in as the system approaches the extreme margins of its operating range. Even then, rising prices can sometimes accelerate the rate of depletion and negative impacts. Firms also benefit from finding ways to cheat the invisible hand of free markets to establish monopoly conditions while maintaining appearances of healthy competition. While financing the onward propagation of (reflexive) free market rhetoric, firms are driven to create rigid (non-reflexive) systems of monopoly arrangements, the 'externalisation' of true costs, and the by now familiar configurations of human society that favour low labour costs and willing markets. The nuclear power industry for example, by 'externalising' the incalculable costs of waste disposal (no technically viable solution yet exists) and the costs of plant decommissioning (more expensive than the original construction), industry proponents manage to tout electricity that is 'cheap and clean'. In a second modernity, many of the monopoly practices thinly veiled by 'free market' masks would be displaced by an extension of self-regulating mechanisms like supply and demand rhetorically celebrated by the cultural infrastructures of capitalism.

Similarly, the monumental failures of twentieth-century state socialism are revealed through the retrospective lens of second modernity to stem from its dependence upon non-reflexive bureaucratic command and control. The reflexive alternative would be to activate the instantaneous feedback loops of a more local social scale where the play of pride and embarrassment has for centuries done a more or less effective job at regulating human associations and tempering inevitable excesses of antisocial behaviours, mostly without themselves becoming tyrannical. Seen through the lens of reflexivity, conventional responses to often-epochal questions of system design are revealed as unnecessary distractions or false dichotomies.

The urgency of choices between modernity and postmodernity, socialism and capitalism, paper and plastic, etcetera, give way to other questions: how can reflexivity inform our responses to new challenges? What is the best way to increase the reflexivity of established systems? What is the best way to displace the feedback loops that favour socially negative outcomes with those that optimise the cost-benefit ratio for the largest majority? How do we best address feedback loops that favour the reproduction and further concentration of power?

Whither postmodernity?

If the notion of reflexive modernisation operates in terms of first and second modernities, what is the role, if any, of our own familiar 'condition of postmodernity'? This question cuts a line parallel to the notions of post-criticality as articulated since 2002, but it cuts through a thicker body of social evidence. Once we step back from the modernity-postmodernity construct, it appears somehow more precisely as a phenomenon limited in its scope to the challenges of the 'short' twentieth century roughly corresponding with the period of 'high modernism'.[27] In this perspective, postmodernity is less a response to the larger trajectory of modernity than it is a response to the far more limited, even aberrant, aspirations of high modernism from the 1920s to the 1970s (including the demolition of Pruitt-Igoe). From this critical distance, the early flourish of divergent modernisms take on a renewed significance suddenly beyond the reach of postmodern criticism. Born of the revolutionary paintings of Manet and Cézanne, the early modern movements each embarked from different cultural capitals of Europe to chart their own courses through an unprecedented explosion of new forms, concepts, and media.[28] But in each case, the rising arcs of these visions were caught in mid-flight and stopped short just as they seemed to be picking up speed. The segue into Fascism of the Italian Futurists can only partly be blamed on a fascination for the violence of fast cars and war. The return to origins of the Suprematists and the utopian constructions of the early Soviet period disappeared under Stalin's iron fist. The German Werkbund, Bauhaus and Glass Chain were displaced by the architecture of Hitler himself, working through Speer.[29] It is perhaps the genealogy of the Dutch De Stijl that has cut the widest arc with survivals in The Netherlands and elsewhere after the Second World War.

In the cold war conditions of postmodernity, discourse was all we had to work with, caught as we were, in the crosshairs of nuclear Armageddon to be triggered by a remote concentration of power caught up in a moment of ideological excess.[30] There are better problems to have. For example, we might take some measure of comfort in the fact that the currently perceived dominant threat to human existence has dispersed from the singular push of a button to the collective impacts of individual choices, vastly distributed in time and space. Even if it all went away in a nuclear winter, at least it wasn't the direct act of anyone we knew personally. By contrast, in the conditions of second modernity, 'we are not *in* the traffic jam, we *are* the traffic jam'.[31] Taken to the logical extremes of eco-fascism (and why not?), what used to be trivial daily choices of whether to drive or to take public transportation, whether to have a burger or go vegetarian, whether to buy a clothes dryer or plant a tree and hang a clothes line from it, now require an enhanced capacity for taking on a pallor of planetary life or death. In the absence of an easily accessible means of quantifying the relative impacts of different choices in everyday life, comparison between very large and very small impacts are flattened into a sameness that inspires a feeling of powerlessness and resignation.

As conditions of architectural production have undergone a significant transformation in the past half century, so have the responses offered by each generation. If war, social injustice, and environmental crisis once compelled street demonstrations, and the triumph of late capitalism inspired a critique

of discourse and examinations of power, the new conditions of war, social injustice, and environmental crisis would seem to inspire changing light bulbs and presidents, but little else.[32] The expansion of options beyond the old responses and transcending the conventional false dichotomies are perhaps the prerequisites for taking more effective action.

If the late twentieth-century popular rejection of the modern project salted the earth against further crops of high modernism, perhaps one account of what we are witnessing is the sprouting of the long-dormant seeds of early modern movements opportunistically sending up new shoots to fill the void.[33] One of the significant differences in this generation of seedlings is that we now have tools of representation and fabrication better able to model and, though to a more limited extent, produce the forms that the early modernists dared to imagine. Computation has shifted dramatically in a very short time from being an elaborate (and inelegant) pencil - limited as it is to producing representations of architecture in two dimensions - to a more interactive three-dimensional modelling platform for testing spatial relations and anticipating experiences. From an earlier focus on *representing* forms generated in actual materials and space (crumpled paper), it is now common for architects, and architectural students, to *generate* forms digitally within the virtual context of computational environments independent of any material, spatial or temporal framework. Software developed to produce three-dimensional models has been extended, supplemented with add-on programs, and/or combined with other applications, to create dynamic relationships between various quantifiable 'parameters', thus entering the realm of 'parametric design'.[34] Thus far, the most celebrated work explored under the various banners of parametric design remains predominantly formal exercises, often not much more than a three-dimensional screensaver pattern given scale. The promise of moving beyond mere modelling and moving digital models directly into full-scale production remains a tantalising goal even as it remains prohibitively expensive.

If computational tools have expanded our capacity to realise some of the formal ambitions of the early modern movements, what of the accompanying utopian social aspirations? Or acknowledging the pitfalls of utopia, what of the more modest interest in distributing the benefits of human progress more widely? Is it even possible to entertain such aspirations in the context of withering welfare states? Has once-'triumphal' capitalism turned sufficiently introspective to make room for a pragmatic retooling of governance? Can a critical attitude in architecture escape the ossification of 'critical architecture' to mobilise new tools in a more effective social engagement, and simultaneously offer alternatives that transcend the 'merely' pragmatic? While parametric design is best known for generating a startling variety and complexity of forms, designers are not limited to working with form alone. The considerations available to generate or influence architectural outcomes are limited only to performance characteristics that can be quantified numerically. Tremendous possibilities for structural analysis have been opened up through these tools by dynamically modelling interrelated structural characteristics. Other performance characteristics that are being modelled using parametric design tools include: construction costs, energy use, carbon footprint and other environmental impacts. In each case, the performance characteristics are inherently quantitative in nature. However, the important far-reaching considerations of architecture and the built world are not universally well-represented in the form of numbers. The larger challenge lies in expanding the capacity of parametric design for dealing with architectural performance characteristics that are not conventionally captured in quantitative analysis. Do the critical techniques of postmodern theory have useful application beyond simply demonstrating the malleable nature of associations between meaning and experience? While the power of Derrida's technique of textual decon-

struction has been repeatedly demonstrated, the insistent critique of 'instrumentality' has locked potentially useful tools of deconstruction away from applications that might betray a sense of social intention. In the name of 'autonomy', the selection of the texts for deconstruction is adamantly *asocial*, and seemingly unconcerned about the risks of slipping into the realm of the *antisocial*. Rather than being merely personal or arbitrary, the methodological lenses of history, political economy, and culture yield associations between meaning and form as being *constructed*. Terry Eagleton's 1983 *Literary Theory: An Introduction* earned him a special place for unabashedly asserting the inherently political project of critical theory.[35] In his 2004 work, *After Theory*, he revisits these aspirations only to acknowledge their failure in terms similar to those heard in the 2003 *Critical Inquiry* colloquium. Though he remains committed to the social project of critical theory one cannot help but hear a note of defeat in the title *After Theory* - the same phrase chosen by Michael Speaks for his frontal assault on the role of theory in architectural education.[36] The question remains: can critical theory be redeemed in application to solving the problems that architecture has historically addressed? To what extent can the tools of critical hermeneutics contribute to deeper understandings of complex processes that result in the mappings of meaning onto form at different moments in history? Is any aspect of this relationship quantifiable?

After a period when theory served to impede rather than propel action, a healthy dose of pragmatism is a good start towards more effective engagement.[37] Rather than suffering the consequences of having 'thrown the [theory] baby out with the [critical theory] bath water', can we instead re-examine the tools that were so carefully forged in the rich period of postmodern criticism and test them against the challenges of the twenty-first century? The embrace of complexity as a positive attribute is sure to have benefits for the world we find ourselves in now, three decades later. Where the choices of everyday life were once driven by individual self-interest and the logic of a simply quantitative bottom line, they are now infused with latent significance as the front line of the battle for human survival. The very local scale of consumer choice and human behaviour is inextricably connected, through a distributed web, to large scale and long-term consequences. The internet has vividly demonstrated how a new set of tools can turn what a few short years ago was undreamt of complexity, into a mundane matter dispatched through a swift babble of acronyms hammered out by suddenly nimble thumbs. The agile management of ever-increasing levels of complexity and interconnectedness is one of the essential prerequisites of the new reflexivity. More importantly, the new conditions call for reflexive design processes that produce architectures in support of socially reflexive systems capable of displacing the non-reflexive mechanisms of high modernism, and the negative feedback loops of late capitalism. It will not suffice meekly to fill voids left in the wake of the linked collapses of Pruitt-Igoe, the World Trade towers, and that of critical theory as suggested in the *Critical Inquiry* colloquium. During an earlier time of rapidly changing conditions, Thomas Paine famously articulated the alternatives as: 'lead, follow, or get out of the way'. Of these, the 'post-critics' have suggested that theory should 'get out of the way'. Others have started to develop theory that promises to illuminate the significant ongoing technological advances, following the lead of practitioners working to slow the pace of the unfolding environmental disaster. Beyond these two roles, what opportunities for leadership have yet to be identified?

Notes

1. Charles Jencks, *The Language of Post-Modern Architecture* (New York: Rizzoli, 1977), p. 9. The story of Pruitt-Igoe stands as a potent historical myth examined in Katharine G. Bristol, 'The Pruitt-Igoe Myth', *Journal of Architectural Education*, 44, 3 (May 1991), pp. 163-71. Among the several historical misreadings of Pruitt-Igoe is the date of demolition, which Jencks reports as being 15 July 1972.
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11. Robert Somol and Sarah Whiting, 'Notes Around the Doppler Effect and Other Moods of Modernism', in *Perspecta*, 33 (theme: Mining Autonomy), ed. by Michael Osman, et al. (New Haven: Journal of the Yale School of Architecture, 2002), pp. 72-77; Michael Speaks, 'After Theory', *Architectural Record* (June 2005), pp. 72-75; and Dave Hickey, 'On Not Being Governed', *Harvard Design Magazine: Urban Design Now*, 25 (Fall 2006/Winter 2007), pp. 74-76.
12. See especially Somol and Whiting, 'Notes Around the Doppler Effect and Other Moods of Modernism', and Baird, '"Criticality" and Its Discontents'.
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Biography

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