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in Architecture

Digital Technologises

Parametricism

The Politics of
Introduction

Chapter 1

We are in the epistemology business.

Matthew Pook and Manuel Schwartberger

"By consensus, we believe President Ronald Reagan has been a real estate and multi-billionaire phenomenon of our time. "
The anthology is an attempt to question, map, clarify, and imagine what these political parameters of parametricism are. Caught between the urge for utilitarian instrumental innovation, on the one hand, and on the other a more unpoliticized, decoupling interest in a more aesthetic and formal possibilities, the discussion of parametricism seems to have so far been largely limited to a small group of architects and critics. To talk about political and parametricism requires a different vocabulary, a more forensic and less metaphorical. The problem is that the contours of today's political landscape are not as clearly defined as they once were. The traditional distinctions between political and economic parameters are becoming increasingly blurred as the use of advanced information technologies, such as digital platforms and social media, transforms the way in which political power is exercised.

Parametricism may present itself as a case study of the relation between technology, ideology, and contemporary history, where the former drives of technology, the latter drives of ideology, and the former drives of history, all interact and inform each other. But the central political and social challenges of our time are not simply technological, nor are they simply political. They are, rather, complex interactions between the two, and it is in this interplay that parametricism may offer us insights into the future of architecture and society.

In the end, it's not just a question of the limits of architectural discourse, but of the very nature of political discourse itself. How do we construct the narratives that shape our understanding of the world, and how do we use these narratives to influence the actions of others? It is in this context that parametricism may offer a new way of thinking about the role of architecture in society, and the potential it has to shape the future.
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What is “Parametricism”?

How it could and should be different.

The Policies of Parametricism

Conclusion.

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The common slippage between the terms “algorithmic design” and “parametric design” is a semantic pitfall that has its foundations in the ontological and epistemological differences between the two. More generally, the semantic distinction is in the way that the terms are used in mathematics, and the main applied uses in engineering, science, and computing.

In mathematics, parametric design is a formalism for representing the relationships between variables. It is used to model the behavior of systems, and to understand the underlying structure of complex systems. Parametric design is a powerful tool for exploratory design, but it is also a challenging one. It requires a deep understanding of the underlying mathematical concepts, and a strong commitment to the development of robust and reliable design methods.

On the other hand, algorithmic design is a more informal and intuitive approach. It is often used in the early stages of design, when the goal is to explore a range of possibilities and to generate ideas. Algorithmic design is less rigorous than parametric design, but it is also more flexible. It can be used to explore a wide range of design possibilities, but it is also subject to the limitations of the human mind.

The two approaches are not mutually exclusive, and they can be used in combination. Parametric design can provide a formal framework for exploring a range of possibilities, while algorithmic design can be used to explore those possibilities in more intuitive ways. The key is to find a balance between the two, and to use them in ways that are appropriate to the specific needs of the design project.
The Politics of Parametricism

Introduction

The orchestrated confluence of postwar (and some prewar) sciences, technologies, and obsessions, such as the focus on cognitive-behavioral psychology and the interest in executable modes of codification, whether as pedagogical curricula, computer programs, or urban design protocols. Parametricism, to a certain degree, represents the nth iteration of this type of methodology, even though today it is infused with a different distribution of “sciences,” tools, and motivations—from neuro-marketing to real estate, from issues of social justice to environmental collapse, and more.

There is clearly much work to be done in this realm of digital design’s multiple “prehistories” beyond the limited set of case studies mentioned above, and while some of the contributors to this volume do engage with this necessary task, more thorough-going critical-historical works recounting and weighing the relative importance of these myriad technical and discursive interventions (for “parametricism” as much as for other strands of contemporary digital design) are patently yet to be written.

However, the very act of recognizing these various “programs” that both “run” and “run on” parametricism, through and beyond its literal procedural functionalities, as well as the recognition of their similarities with earlier techno-ideological paradigms and ideals of “the political,” constitutes the starting point for the critical discourse we are attempting here. To this end, as well as the rigors of historical examination, there are also a variety of contemporary methods, approaches, and intellectual frameworks that we consider indispensable for the task—some of which we will now briefly introduce.

The political

You will be wondering at this point what do we mean by “the political” and “politics”? Answering this question is obviously a mammoth task, and while there are many iterations by a myriad of thinkers who have addressed it, here we can only give an extremely partial description. Yet, we believe the relation between parametricism and politics would be best served by considering, at least, the following fundamental fields and authors.

At some level, all of the humanities and social sciences—from comparative literature to anthropology, sociology, etc.—touch on the question of politics, but a common starting point into the discourse is the work of Hannah Arendt, who worked from Ancient Greek, Roman, and Modern intellectual sources to detail the complexities of the aesthetic and performative dimensions of “the political.” Reading Arendt would open up other political thinkers and philosophers of note, including classics from Thomas Hobbes to Karl Marx and...
“Biopolitics” was originally proposed by Foucault as a lens through which to understand the history of governmental theories and techniques—reflecting States’ progressive hold over “life” in all its forms: via policies and practices around education, regimes of care and health, etc.—and also provided him with a banner-term to discuss the technical, ideological, and theoretical dimensions of liberalism, an important historical-political actant over the last three centuries.27

In liberalism, Foucault finds an articulated technical and ideological program for organizing social life around economic activity. This new control over civil society’s “nature,” disclosed by the development of “economic sciences” such as statistics, makes liberalism a kind of “governmental naturalism.”28 According to Foucault, the governmental principle of liberalism is to govern according to the market because the market is understood as a site of truth—the natural truth implicit in the relation of exchange between autonomous individuals whose interests cannot be externally anticipated or known, and which therefore only the spontaneous operations of the market can compute. Liberalism thus poses the principle of laissez-faire as the most expedient mechanism for governing—finding the right measure between government “too much” and “too little” according to what “naturally” works in the market.

The history and theory of liberalism is important for understanding “neoliberalism,” a term already mentioned a few times in this introduction, as well as in many chapters of this anthology. Indeed, intensifying liberalism’s focus on economic scienticism over the social sphere, neoliberalism, from its early diverse formulations to the more consolidated form we see today, essentially operates by producing a political field that subsumes “political agency,” responsibilities and effects of political institutions (such as government bodies, State-run social welfare agencies, workers’ unions) into the machinations of economics at various interconnected and “nested” scales (from the personal and local to the national and global) of capitalist economies. That is to say that it subsumes political action into the operations of “the free markets” of trade and exchange between private businesses, corporations, and individual private citizens in order to attempt to increase economic efficiency and sustain growth within national economies across the globe. To achieve this, proponents of neoliberalism argue for economic liberalization via the mechanisms of free trade, privatization of public services, deregulation of financial and industrial working processes and methods, as well as through massive scaling down of government spending at all levels (except, in most cases, for national defense budgets).

The neoliberalism that is referred to most often in this book is that which is most closely allied to the work of the Austrian/British economist Friedrich Hayek...
and other relational markers of subjectivity, at the same time as they provide for new communicative and experiential possibilities—a new techno-political reality of quasi-invisible, embedded, pervasive systems of environmental modulation and control, for better and for worse.

Many of the contributors to this anthology thus refer to key figures dominant in the politico-philosophical interrogations of these conditions, such as Jean-François Lyotard, Gilles Deleuze, Félix Guattari, and Alain Badiou, among others. Lyotard’s 1979 book, The Postmodern Condition: A Report on Knowledge, is especially important in this context as it outlines the impact of digital computational and networked communications technologies on the changing status and value of knowledge in postindustrialized societies, exploring and speculating upon the shift from knowledge to “information” and the possibilities and ramifications of information as a commodity form in the face of industrial “globalization.” Much of Deleuze and Guattari’s writing follows such a path also to interrogate the complex interplay of social and market forces upon the changing ecology of epistemology, aesthetics, and ontology in a technologically driven global world. Badiou’s body of work intervenes in perhaps the most militant manner in the politico-philosophical debates around technology, capitalisms, and neoliberalism, where we see his recasting of ontology as a specifically mathematical function. For the issues outlined in this book, the question of the computation of numbers and the issues that develop due to the increasingly complex technologies of calculation, which are developing in and beyond the fields of architecture and design, must be addressed in order to understand their effects upon all social and political actors and actants and the forces that they exert upon one another in socio-political ecologies, which are more wide reaching and interconnected in their effectiveness than ever before.

Within this sphere, the recent work of a younger generation of philosophers and theorists of technology and politics has also been instructive to the issues that are presented here. The Italian Operaismo and Autonomia theorists, including Paolo Virno, Christian Marazzi, Maurizio Lazzarato, Franco “Bifo” Berardi, and Antonio Negri, among others, present compelling problematizations of the techno-utopianism often associated with post-Fordist labor models and post-Taylorist management structures, both of which are made possible by digital networked communications and digital electronic computation. These writers explore how capitalist activity is now able to evaluate, process, and intervene within not only the semiotics of social interactions but actively embeds within the codes of the communicative, affective, and behavioral aspects of social life. Lately, this approach has continued through the work of writers associated with “Accelerationism,” a loose grouping of theorists, philosophers, designers, and


14. Procedurality: "When you model using parametrics you are programming following similar logic and procedural steps as you would in software programming. You first have to conceptualize what it is you’re going to model in advance and its logic. You then program, debug and test all the possible ramifications where the parametric program might fail. In doing so you may over constrain or find that you need to adjust the program or begin programming all over again because you have taken the wrong approach." Rick Smith, Technical Notes from Experiences and Studies in Using Parametric and BIM Architectural Software, published March 4, 2007, at http://www.vbtllc.com/images/VBTechicalNotes.pdf [accessed September 25, 2014], p. 2.

Flexibility: "Changing the order in which modelling and design decisions can be made is both a major feature of and deliberate strategy for parametric design. Indeed, a principal financial argument for parametric modelling is its touted ability to support rapid change late in the design process." Robert Woodbury, "Chapter 1," Elements of Parametric Design (Abingdon: Routledge Press, 2010), p. 43.

Variability: "Initially, a parametric definition was simply a mathematical formula that required values to be substituted for a few parameters in order to generate variations from within a family of entities. Today it is used to imply that the entity once generated can easily change." Chris Yessios (founder and CEO of the modeling software FormZ), "Is There More to Come?" in Architecture in the Digital Age: Design and Manufacturing, ed. Branko Kolarevic (New York: Spon Press, 2003), p. 263.

Correlation: "parametric modelling introduces fundamental change: ‘marks,’ that is, parts of the design, relate and change together in a coordinated way." Burry, Scripting Cultures, p. 9.


17. "(...) one of the more noticeable trends in recent architecture is the turn from metaphysics to immanence. Whereas postmodern architects thought of buildings and cities as fragments of an expansive texture or fabric, contemporary spaces are mostly involuted and introverted. The turn to immanence takes on different forms in current architectural practice. The resulting architecture in no way encodes the design process in the contours of indexical form, but sublimates it into asgnifying, involuted worlds for which new theoretical concepts are just starting to emerge. (...) The trust in the generative self-sufficiency of codes (in algorithmic and parametric processes and in the collection of big data) largely proceeded without any detours through the questions of formal meaning that played such a central role in the preceding decades." Emmanuel Petit, "Involution, Ambience, and Architecture," in Log #29 "In Pursuit of Architecture" (New York: Anyone Corporation Press, Fall 2013), p. 27.


The historical pertinence of parametricism and the prospect of a free market urban order

Patrik Schumacher

Introduction

To respond to manifest societal trends, i.e., technological, socioeconomic, and political trends, is a vital capacity of architecture. However, this response must be an architectural rather than a political response. Debating politics within architecture can only concern the identification of manifest political trends. It can never be political debate, i.e., never a participation in the political controversies themselves. Architecture cannot substitute itself for the political process proper and must leave politico-economic innovations and the elaboration of radical politico-economic alternatives to the political and economic arenas. Architecture has no capacity to resolve political controversy. Political controversy and activism would overburden and explode the discipline. However, architecture can and must respond to transformative historical developments that become manifest within the economy and the political system. Architecture can only react with sufficient unanimity and collective vitality to dominant political agendas that already have the real power of a tangible political force behind them. Architectural discourse must develop innovative architectural responses to these historical transformative trends. This task raises the question of the historical adaptive pertinence of the various competing architectural tendencies, and in particular the question of parametricism’s historical pertinence might be posed.

The political and socioeconomic premises of parametricism are found in the advancing processes of post-Fordist restructuring, globalization, market liberalization, and democratization. The methods of parametricism operate in line with the demands of post-Fordist flexible specialization and deliver attendant