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Everyone designs

Identity and Determinism in the Digital Age

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Design has rapidly permeated our lives since the last century. Its ability to project a desirable scenario at any scale—its fiction: how the world “should” be—seduced us during a 20th century whose character was technological. This paper explores some challenges that the pervasiveness of design in the digital age entails. It argues that the increasing importance of the logic of design demands a theoretical reflection to counter the merely practical or decorative. It considers that concepts, such as innovation, identity, choice, and aesthetics, need constant redefinition, at the deepest cultural level, in the highly globalized world of the 21st century. This effort analyzes the prospects of a theoretical reflection based on the Latin American experience, during the transition from a technological to a digital or information age, to left behind the primacy of imported theoretical and practical models from Europe and the United States.

Keywords: design thinking, innovation, identity, choice, aesthetics

Introduction

“Everyone designs who devises courses of action aimed at changing existing situations into preferred.”

—Herbert Simon, “The Science of Design: Creating the Artificial,” 1988

It is not particularly controversial to claim that the flexible and creative logic of design has become pervasive in the 21st century. Unlike the descriptive logic of social sciences or the positivist reasoning of engineering, design provides a framework to propose the “potential”—what does not exist yet. The increasing primacy of design methods developed gradually. The technological character of the 20th century replaced the humanism and rationalism of the 18th century as well as the tension between the romanticism and the economism of the 19th century (Schmitt, 1996). Marinetti, Gropius, Le Corbusier, Mies, Fuller, Archigram, Banham, Foster,

Gehry, Ito, among others, embraced the technological rationale, while, in a reciprocal process, several forms of knowledge adopted the flexible logic of design as part of their methods. While Gropius and Le Corbusier proposed to build a better world through standardization, design thinking permeated the professional training of business, law or engineering to inform ‘decision-making’ processes. Today, in the transition from a technological to a digital or information age, it may be argued that everyone designs. Everything is regarded to be designed today—from daily-use objects or experiences to our most sophisticated robots—falling prey of “innovation” as a category of aesthetic and economic speculation that is, first and foremost, subordinated to consumerism. This fact, of course, questions its own identity: what is design today? If design is everything, design is nothing.

Week Thought and Design Thinking

Science and engineering rely on precision and clarity to identify problems and their potential solutions, whereas design thinking is open-ended or “weak.” Weak thought, in this context, is understood not literally but through the philosophy of Gianni Vattimo. Therefore, “thinking is no longer demonstrative but rather edifying” (Vattimo, 2002, pp. 452–463). Professor Peter Rowe, former Dean of the Graduate School of Design, argues that *design thinking* synthesizes precision and incompleteness. It provides, thus, both the ability of *precision* “to recognize and understand successive stages of problem structuring and to ensure success in narrowing the search for satisfactory outcomes,” and the openness of *incompleteness* “to prompt useful and novel forms of further heuristic reasoning pushing toward potentially better outcomes” (Rowe, 2017 p. 43). According to the American social scientist Herbert Simon, unlike science or

engineering which study how natural and artificial things *are* and *work*, design “is concerned with how things ought to be, with devising artifacts to attain goals” (1988, p. 67). The propositional content of design equates the findings of the German philosopher Theodor W. Adorno in the Kantian system which was paralleled, retroactively, to the architecture of the French Claude-Nicolas Ledoux by the Viennese art historian Emil Kaufmann through the term *autonomen Architektur*. The architecture of Ledoux, Kaufmann argued, inaugurated a new architectural attitude based on material sincerity and the geometrical autonomy of the parts in relation to the whole, replacing the heteronomy of the Renaissance-Baroque system in which the subordination of the material to animism and the parts to a unified composition prevailed (1982, pp. 69-94). During the second half of the 20th century, this formulation was echoed mainly by the theory of the Italian Aldo Rossi and the American Peter Eisenman, as the “autonomy of architecture.” This implies the return to the theoretical study of the discipline (thinking), in contrast to what the Italian Tendenza, led by Rossi, considered its professionalism (making) based on the commodification of culture (Scolari, 1973). A theoretical study that is scarce in contemporary Latin American architecture and urbanism. Adorno argues that, in Kant’s philosophy, the ideals of the Enlightenment—such as *freedom* and *autonomy*—are “regulative ideas” rather than “constituents of knowledge.” This means, for Adorno, that “there is a sense in which Kantian philosophy strives to define the world—through the immanent values of *autonomy* (reason)—as it ought to be” rather than as it really is (2001, p. 137). This formulation coincides with Herbert Simon’s argument that “design is concerned with how things ought to be” (1988, p. 69). Therefore, it is not a coincidence that Kaufmann equated the subjectivism of Kantian philosophy with Ledoux’s architecture—an analogy that influenced, and even polarized, the architectural discourse in both sides of the Atlantic during the second half of the 20th century.

The last decades of the 20th century witnessed the pluralism to which architectural theory was subjected. The decay of the Modern movement triggered the search for architectural renovation through technological fascination, biological and linguistic analogies, positivist and sociological methods, or historical references, among other methods. The influence of computer systems revolutionized the design and the practice of architecture toward the end of the last century. This revolution allowed the design and construction of the Guggenheim Museum in Bilbao or the Yokohama International Port Terminal, and the possibility to 3D-print not only musical instruments or food but also entire buildings. In *The Alphabet and the Algorithm*, Mario Carpo describes two events that influenced greatly architectural modernity: Leon Battista Alberti's inception of architectural design and the industrial revolution. First, Alberti's distinction between the design and the making of architecture—during the Renaissance—empowered the architect as a humanist creator. The actual building, for Alberti, is identical to the design. Second, the mass production of “industrial standardization generates economies of scale—so long as all items in a series are the same” (Carpo, 2011, p. 32). The specters of mass production and mass consumption seduced design at all scales, consolidating the alliance between architecture and computer science created since its early development in the late 19th century.



Figure 1. Guggenheim Museum, Bilbao, Spain, designed by Frank O. Gehry (1993-1997)



Figure 2. Yokohama International Port Terminal, Japan, designed by Foreign Office Architects (FOA) (1995-2002)

The problem-solving logic of architecture informed the rationale of computer science which appropriated the term ‘architecture’ to define “the conceptual structure and logical organization of a computer or computer-based system.”¹ The antecedents of our increasingly internet-based communication network and our information age could be traced back to The

Hollerith Machine (1888), The Bombe Machine (1940s), and the SAGE: Semi-Automatic Ground Environment Air Defense System (1950s-1960s). Herman Hollerith designed a machine that captured and processed data for the US Census Bureau whose technology was replaced until the 1950s by computers. Alan Turing designed The Bombe, a machine that reduced the work of the British codebreakers to decipher the German codes during Second World War. The SAGE system was “the first geographically distributed, online, real-time application of digital computers in the world.”² The development of the Defense Advanced Research Projects Agency (DARPA), during the Cold War, engendered the development of internet. It was just a matter of time for the digital logic to permeate the architectural rationale, in the same way that it permeated other cultural realms. The computer-aided design software and 3D-printing started replacing the drafting table at the turn of the century. In *Design Thinking in the Digital Age*, Peter Rowe identifies five domains within architecture influenced by digital technologies: first, architectural representation; second, integrative efficiency such as building information modelling; third, building performance assessment such as climate control or resource consumption; fourth, parametric modelling; and fifth, prototyping such as digital printing and 3D-modelling. These digital tools are so powerful that they inform *how we design* and *what we design*, but Rowe argues that “the ineffable characteristics of design problems and of design thinking” apparently remain (2017, p. 19). For example, he explains how the digital tools seem to prescribe a formal propensity toward “surface” rather than “space” based on the use of applied geometries in fabrication or 3D-modelling. Rowe asserts, however, that the “weak” nature of design thinking that synthesizes *precision* and *incompleteness* has survived the paradigmatic shifts in architectural design since the invention of perspective during the Renaissance until the contemporary digital age (2017, pp. 19-25). This assertion problematizes the understanding of the concept of “innovation” in modern societies as

well as concepts whose constant redefinition is necessary in design such as: identity, choice, and aesthetics.

Innovation

In “Architecture, Innovation and Tradition,” the Chairman of the *Fondation Le Corbusier*, Antoine Picon (2013) distinguishes between “innovation” and “invention”. Innovation, for him, “possesses a systemic character,” whereas invention not always spread due to “technical limitations, socio-economic and cultural obstacles.” Picon exemplifies this distinction contrasting the invention of the German engineer Thomas Diesel with the innovation of Thomas Alva Edison’s electric lighting. Diesel designed an engine whose ignition starts through pressure but at the end of the 19th century its broad application was not guaranteed, whereas Edison’s invention revolutionized a technological realm whose eventual broad implementation was a matter of time. Thus, the term “innovation” has deep cultural implications considering its systemic character, according to Picon (2013, pp. 128-133). However, it is so used today that it has lost its meaning. It seems that in our contemporary societies the notion of “progress”—defined as “gradual improvement”—could be exchanged by “innovation,” but in the shallowest sense. The idea of “progress” understood, philosophically during the 18th century, as “moral perfection,” (Schmitt, 1996) has been replaced by its economic and technological counterpart during the 21st century—the ideals of the Enlightenment were replaced by a technocracy that tends to confound technology with democracy.

Choice

In a debate about the influence of big data into urban theory titled “Cities and Technology” at Harvard Graduate School of Design, Carlo Ratti (Director of the MIT SENSEable City Lab) naively asserted that *technology is politically neutral* to which Antoine Picon sharply refuted that *technological devices or tools only legitimize political decisions that have been previously made*.³ The techno-utopia, supported by Ratti, that imagines a better world through the democratization of technology is instrumental for the few that decide in Silicon Valley, New York, Washington, London, Brussels or Berlin. The lack of theoretical reflection about choice, identity and aesthetics subordinates design to an aesthetic and economic speculation—for example, to the superficial fashion of material and visual mass consumption of social media. In *L'Architettura della Città*, Aldo Rossi regarded the problem of choice as political in nature but questions about identity and aesthetics are not less political (1982, p. 162). A clear example in the Latin American architecture of the 20th century is Brasilia whose construction involved political, social, economic as well as aesthetic decisions—as attested by the geometries of its general plan and the specificity of its architectures.

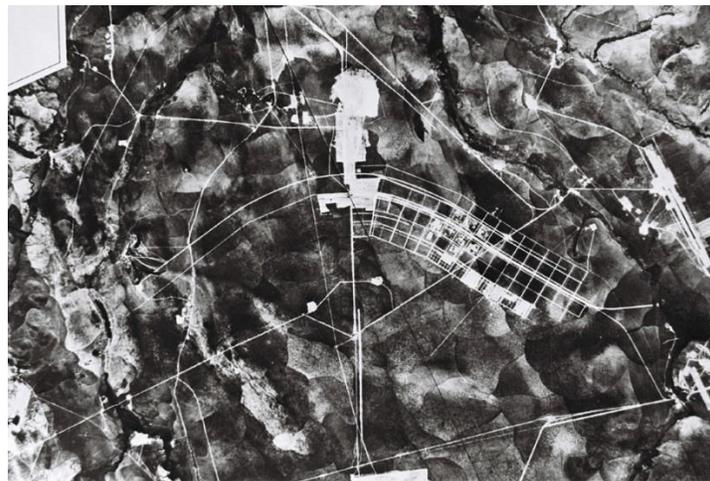


Figure 3. Brasilia under construction, 1957. Geofoto. Arquivo Publico do Distrito Federal

Identity

The term “identity” proceeds etymologically from the French *identité* or the Latin *identitas* which means “condition or fact that a person or thing is itself and not something else.”⁴ Therefore, its meaning evokes individuality. The genesis of individuality could arguably be traced back to the decay of medieval societies but the outbreak of the French Revolution—whose preceding centuries were described by Karl Marx as a “prehistory”—could be considered a consequence of its formalization through Kantian philosophy. Kant’s autonomy, along with Rousseau’s freedom, shaped the modern consciousness of the individual toward its emancipation from external ruling—for example, the monarchy. However, in *Dialectic of Enlightenment*, the philosophers Theodor W. Adorno and Max Horkheimer argued that the rationality of the Enlightenment turned into barbarism in the 20th century—fascism and the irrationality of the insatiable capitalist logic (2002). In 1929, in a lecture titled “The Age of Neutralizations and Depoliticizations”, Carl Schmitt declared that the succession of eras—from the Medieval age to the Renaissance, from the metaphysical 17th century to the moral 18th century—implies “the striving for a neutral domain” (1996). The belief that technology is “a domain of peace, understanding, and reconciliation” prevailed in Europe in the 20th century as a heritage from the scientific discoveries of the 17th century such as the telescope. Society is not politically homogeneous, thus, as Schmitt stated, technology is an instrument that “precisely because it serves all, it is not neutral” (2007). By mid-20th century, the consolidation of mass society, according to Hannah Arendt, prescribed “a certain behavior, imposing innumerable and various rules, all of which tend to ‘normalize’ its members, to make them behave, to exclude spontaneous action or outstanding achievement” (1998, p. 40).

The social realm developed in the *modern world*—which for Arendt emerged politically after the first atomic explosion—absorbed, and neutralized, completely the political realm excluding any possibility to be critical through action and speech.

As Arendt theorized the political deficit of society, the functional urbanism of *Congrès International d'Architecture Moderne* (CIAM) and the Athens Charter was first introduced to the United States in 1942 through the publication of Josep Lluís Sert's *Can our Cities Survive?* which was an analysis of urban problems and its potential solutions. The social, economic, political context of these modernist ideas was the reconstruction efforts carried out in Europe after the destruction of World War II. While the Marshall Plan (1948) supported the economic and institutional reconstruction in Europe, the *Comisión Económica para América Latina* (CEPAL) was created, the same year, to develop Latin America where architecture was instrumental toward the modernization of the region through the *ideology of developmentalism*. In "Architectures for Progress: Latin America, 1955-1980," Francisco Liernur clearly explains how Latin American states, from Mexico to Argentina, adopted strategies from the European and North American (United States) experiences to modernize their main cities at an architectural and urban scale (1969, pp. 69-89).

By mid-20th century, urbanization exploded in Latin America and the population of its major cities increased dramatically, while, in 1956, Josep Lluís Sert (as Dean of Harvard Graduate School of Design) organized the first Urban Design Conference. The rapid growth of the American cities and their suburban sprawl, according to Sert, demanded the development of urban design to coordinate the efforts of urban planners, landscape architects and architects to intervene the urban environment. In this historical context, projects such as the *Museu de Arte de Sao Paulo* (1957), the Nonoalco-Tlatelolco housing complex, in Mexico City (1960), or *Teatro and Centro Cultural*

San Martin in Buenos Aires, (1950s-1970s) were implemented to tackle the urban scale referred by Sert at Havard. The ideas developed in other contexts, thus, were implemented in Latin America but without a theoretical framework. The project for Brasilia (1960s), according to Liernur, could be regarded “as the primary symbol of Latin America developmentalism” through its strategy to reorganize the territory (2015, p. 73). But, as the project developed, a paradigmatic shift took place. The slogan “being modern,” for Liernur, described the first half of the 20th century, while the problem of identity dominated the second half of the century. Luis Barragan’s oeuvre, in Mexico, synthesized a colonial heritage, a vernacular tradition and a modern language into a coherent whole—from Casa Prieto to Las Arboledas. Barragan’s work countered the loss of identity—a consequence, perhaps, of rampant developmentalism.



Figure 4. San Cristobal Stable, Horse Pool and House, Planned by Luis Barragan, Mexico City, Mexico, 1976. Presented by Pierre Brahm 2015

Barragan’s architecture provided the aesthetic index of what until today could be called “Mexican architecture.” An architecture that lacks any critical reflection toward the redefinition of its identity during the 21st century. In *Poesía en Movimiento*, Octavio Paz expressed his skepticism about the term “Mexican poetry.” He wrote that it is believed that Lopez Velarde is the most Mexican of our

poets, but his oeuvre is so personal that if its “Mexicanity” distinguishes it; thus, it cannot be compared with that of any other Mexican (Paz, 1981). Lopez Velarde’s case might be analogous to Luis Barragan’s aesthetic sensibility which, despite all the efforts, cannot be replicated. But the search for identity was not exclusive to “Mexican architecture.” In the context of post-modern concerns, *The Architectural Review* asked in 1984: Is there a British Architecture? At the turn of the century, the sociologist Manuel Castells considers that in the increasingly globalized world, the redefinition of individual and collective identities is the main source of social meaning (2000, p. 3). The rise of nationalisms in international politics, the racial tensions or the cultural homogeneity prescribed by Facebook, Instagram or Google legitimize Castells’s argument.

Aesthetic

It seems that the contemporary eagerness for innovation lacks any theoretical and cultural reflection as well as any historical reference. Antoine Picon (2013) argues that, after *Delirious New York* whose theoretical argument is based on the historical process of modernity experienced by New York City, there seem to be, finally, a return to a historical consciousness in the parametricism of Patrik Schumacher and the use of contemporary ornaments. In *The Autopoiesis of Architecture*, Schumacher attempts to trace a genealogy from Vitruvius, to Bernini, to Le Corbusier. Additionally, Picon argues that the architectural ornament is back via the influence of digital tools. He explains that the use of the ornament attached to surfaces today differs from its traditional use—from the Renaissance to the 19th century—constituting essential parts of the building such as pediments or columns. The rebellion against the ornament of Adolf Loos informed the strict geometries and plainness of the architecture of the 20th century. But today our

dissatisfaction with the recent past has led us to turn to a distant one: the historical use of the ornament. In the Prada Aoyama in Tokyo (2003), by Herzog & de Meuron, the ornament synthesizes the structure and the external skin in the structural façade of the building, while in the Aqua Tower in Chicago (2010), by Studio Gang, the slabs become constituent parts of an ornamental composition.



Figure 5. Prada Aoyama, Tokyo, designed by Herzog & de Meuron (2003)



Figure 6. Aqua Tower, Chicago, designed by Studio Gang (2010)



Figure 7. Aqua Tower, Chicago, designed by Studio Gang (2010)

Picon argues that this ornamental return responds to technological developments—i.e. building envelopes often relate to sustainable concerns—and that “innovation in architecture could be defined through the interaction between formal change, technological challenges and cultural concerns” (2013, p. 133). What Picon did not consider is that this recurrence of the ornament can be found in Latin America—half a century ago—through the Biblioteca Central of Ciudad Universitaria in Mexico City, by Juan O’Gorman, Gustavo Saavedra and Juan Martínez de Velasco, in which the two dimensional ornament gives aesthetic character to the simple geometries of its structure (1948-56); the masterly church of Cristo Obrero in Atlantida (1958-60), designed by Eladio Dieste, in which the brick walls are structure, skin and ornament, at the same time; or Rogelio Salmona’s Torres del Parque (1964-70) whose ornamental composition merges with the geometries of its immediate context.



Figure 8. Biblioteca Central, Ciudad Universitaria, Universidad Nacional Autónoma de México, Mexico City, designed by Juan O’Gorman, Gustavo Saavedra and Juan Martínez de Velasco (1948-56) Photo by Wayne Andrews



Figure 9. Iglesia de Atlántida Cristo Obrero y Nuestra Señora de Lourdes, Estación Atlántida, Canelones, Uruguay, designed by Eladio Dieste (1958-60) Photo by Facultad de Arquitectura | Universidad de la República | Montevideo, Uruguay

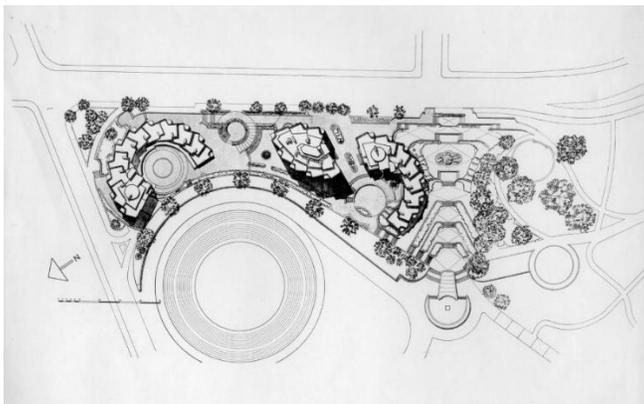


Figure 10. Plan. Residencias El Parque, Bogotá, designed by Rogelio Salmona (1965-1970) Fundación Rogelio Salmona.

The historical development of *aesthetics* as special cultural realm reveals its cultural significance and its potential contemporary application to theories and practices related to design in general. The philosophical theories of Kant and Schiller not only consolidated the principles of aesthetics as autonomous cultural realm but also exposed its political and social nature. Kant proposed an aesthetic judgment disinterested on the utilitarian concerns of bourgeois society; on the other hand, Schiller considered that art could restore the humanity lost through the division of labor of the capitalist logic. The avant-garde movements—for example Dadaism—tried to cancel the distance between art and society, while the Bauhaus, according to Pier Vittorio Aureli, proposed the creation, or design, of a (social, economic, and political) context rather than objects.⁵ In Latin America, as Liernur points out, the Paulista Brutalism—such as that of Vilanova Artigas and Mendes da Rocha—“represented an important development in the Marxist debates about architectural expression” (2015, p. 82). Today, the lack of these theoretical and cultural reflections in Latin America subordinates our practices to the merely *practical and decorative*—to the picturesqueness of social media—and condemns our architecture, our urbanism, our design to the tropicalization of external experiences. Paradoxically, we could trace the roots of this critical Latin American reflection to the philosophy of Immanuel Kant, who greatly influenced our contemporary Western thinking, and whose ideas constantly evoke the motto of the Enlightenment: “*Sapere aude!* Have the courage to use your own understanding!” We, in Latin America, have the means, we have the knowledge, do we finally have the courage?

Word Count: 3,385 words

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³ The debate was organized by the City Form Lab on Wednesday, March 7th in Gund Hall (48 Quincy St, Cambridge, MA). The panel speakers were: Antoine Picon (G. Ware Travelstead Professor of the History of Architecture and Technology, Harvard Graduate School of Design and Director of Research, Harvard Graduate School of Design), Cesar A. Hidalgo (Associate Professor of Media Arts and Science, Massachusetts Institute of Technology and Director, Collective Learning group, MIT Media Lab), Carlo Ratti (Professor of Urban Technologies and Planning, Massachusetts Institute of Technology and Director, MIT SENSEable City Lab), and Alan G. Wiig (Assistant Professor of Community Development, University of Massachusetts Boston). The panel was moderated by Andres Sevtsuk, Assistant Professor of Planning and Director of City Form Lab.

⁴ "identity, n." OED Online, Oxford University Press, March 2019, www.oed.com/view/Entry/91004.

⁵ Ilka and Andreas Ruby. *Endless Bahuaus*. Ruby Press. Video Installation (part of the exhibition “Modell Bauhaus” held at the Martin-Gropius-Bau, Berlin, 22.07-04.10.2009).