Survival Form: Architecture's Disciplinary Tragedy
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Abstract
As a discipline pushes at its own boundaries and engages other disciplines or paradigms the legacy of thought that has defined the discipline to date frequently either constrains or channels the 'progress' in question, tempers the radicality of any new proposal, favours changes that are superficial and incremental rather than deep and fundamental, and forestalls the actual opportunities that other paradigms or modes of thought provide for a valuable, but more fundamental, change to its practices.

In the case of architecture, a telling example of this phenomenon is the manner in which the discipline has attempted to engage the so-called 'digital paradigm'. Despite its formal novelty, this recent work fundamentally adheres to an old model of architectural production—one that favours the exploitation of new materials and technologies to produce material spectacle (such as an arch, or a dramatic cantilever, or more recently a continuously varied form). As such, the emergent, folded, and biomorphic formalisms that serve as architecture's current attempt to engage the digital paradigm are, in fact, the most recent examples of a long lineage of architectural production that include numerous pre-digital precedents of material or technological bravura, such as the early and late modernist exploitation of reinforced concrete to produce extreme cantilevers and fluid forms.

This old model of production, however, has become increasingly irrelevant to an evolving digital-age culture—a culture that values content over form, as well as the ability to disseminate, update, and reformulate this content.

In focusing so myopically on the exploitation of new digital technologies to produce formal spectacle, the discipline of architecture has been constrained by a pre-digital legacy of thought. Consequently, this has prevented it from looking more closely at the ways that digital technology has changed cultural practices and values, and it has therefore missed the opportunity to consider how a response to those cultural changes could sponsor an alternative vision of architecture that could be considered a paradigm shift in its own right, and which could produce a fundamentally new approach to architectural production that is more culturally significant and relevant.

In discussing these issues, this paper recalls the term 'survival form', coined by the industrial designer Henry Dreyfuss in the 1930s to refer to the (rather small) degree of change or innovation that would be tolerable within the marketplace, and beyond which would be considered too radical a departure from the previous model. It is a concept that favours incremental, linear, and superficial change, and eschews more fundamental or radical re-thinking. In examining architecture's primarily constrained and superficial engagement with the digital paradigm so far, this paper considers whether architecture's nature as a discipline—and consequent need to maintain a degree of disciplinary integrity as it simultaneously attempts to grow and progress—dooms it to this kind of moderating influence, and ultimately prevents it from effecting the more radical changes that seem necessary for it to reclaim a degree of cultural relevance.

Introduction: Architecture and the Digital Paradigm
In considering how any discipline pushes at its own boundaries and engages other disciplines or paradigms it is worth noting that the ways in which the legacy of thought that has defined the discipline to date either constrains or channels the 'progress' in question, tempers the radicality of any new proposal, favours changes that are superficial and incremental rather than deep and fundamental, and often blinds those members who comprise the discipline to the actual opportunities that other paradigms or modes of thought provide for a valuable, but more fundamental, change to its practices.

In the case of architecture, a telling example of this phenomenon is the manner in which the discipline has attempted to engage the so-called 'digital paradigm'. Recent work, produced with the aid of increasingly sophisticated digital software, has been formally novel and adventurous, and has been variously referred to by such labels as 'emergence', 'bioformalism', 'new materialism', 'morphogenesis', and others. Regardless of the label, however, the novel formalism of this work and its genesis in digital software have led critics to champion this work as evidence of a new digital paradigm in architecture.[1]

However, it seems inappropriate to regard this work as paradigmatically new, instead of simply a new manifestation of architecture's pre-digital practices. Taken all together, this new work has, to date, been characterized by the adoption of more sophisticated digital tools (primarily software) and the production of certain forms that showcase these tools. This approach, despite its focus on the exploitation of novel technology and its resulting formal novelty, is actually the continuation of a long-standing, traditional mode of architectural production—one characterized by the technical mastery of material and craft for the production of material or technical spectacle (such as an arch, or a dramatic cantilever, or a continuously varied form). The emergent, folded, and biomorphic formalisms that serve as architecture's current attempt to engage the digital paradigm hew closely to this orthodox approach to architecture, and are therefore not truly examples of a paradigmatic shift within the discipline in terms of architectural production. Rather, while they borrow superficially from fields of knowledge that are generally considered to be outside the boundary of the discipline, they are, in fact, the most recent examples of a long lineage of architectural production that include numerous pre-digital precedents of material or technological bravura, such as the early and late modernist exploitation of reinforced concrete to produce extreme cantilevers (such as Frank Lloyd Wright's Fallingwater) and fluid forms (such as Eero Saarinen's TWA Terminal).

This mode of production, like any disciplinary knowledge, is one that has been passed down as a kind of tradition within the discipline. While it has perhaps been refined and updated over the years, and has been able to exploit new

materials and techniques as well as accommodate new aesthetic interests and trends along the way, it nevertheless remains fundamentally the same insofar as it is an authored production of a monumental work that achieves its effects through material or technical spectacle.

Although this consistency over time has been crucial in supporting the consideration of architecture as a discipline, the inertia behind this traditional approach has become problematic as cultural change has progressively invalidated it. Architecture is, after all, a cultural enterprise—a disciplined practice that employs a variety of techniques to produce forms and spaces that resonate with society, that are socially and culturally significant. However, by invoking the idea of a cultural paradigm shift brought on by digital technologies, there is also the expectation of a correspondingly radical re-evaluation of what precisely constitutes a culturally significant or relevant work of architecture. Consequently, for architecture to be capable of producing works that are significant and relevant in the wake of such a cultural shift, one would expect to see a similarly profound shift within the discipline—a more fundamental change in architectural production, rather than simply the same old product re-packaged in a 'digital aesthetic', or produced with new digital tools, or given ostensible credence through fashionable rhetoric.

Perhaps cognizant that such a new aesthetic cannot truly constitute a new architectural paradigm, some critics have elected to de-emphasize this work's formal or aesthetic characteristics and instead trumpet its supposed emphasis on performance as a way to justify its status as paradigmatically new. Neil Leach, for example, has proclaimed that this work marks a significant shift 'away from an architecture based on purely visual concerns towards an architecture justified by its performance'. He goes on to argue that this new paradigm is distinguished by the fact that 'structural, constructional, economic, environmental and other parameters that were once secondary concerns have become primary', and that, as a result, this work 'is no longer so preoccupied with style and appearance'.[2] However, such rhetoric has been previously used to justify a long lineage of functionally motivated work, so its use as a basis for considering recent digital work as paradigmatically new is questionable. More importantly, such arguments as these seem specious when considering the work in question, in which aesthetic considerations seem obviously primary, and wherein performative aspects—dubious or otherwise—are deployed only to justify (and slightly rationalize) its formal exuberance.

In fact, the changes in architectural output have been anything but fundamental in terms of its relation to culture. While aesthetically contemporary, the monumental and sculptural work that stands as architecture's engagement with the digital paradigm has actually become increasingly irrelevant to an evolving digital-age culture that values actual fluidity, mobility, and change, as well as individual expression and control—all of which have been intensified by digital technologies, and none of which are evident in the way that individuals relate to contemporary architecture. In fact, rather than responding to these changes in culture, the proponents of contemporary 'digital' architecture have instead speciously argued that the use of new digital technologies to produce new effects will actually impart a change to culture itself, and that this will guarantee the significance and relevance of the work.[3]

In focusing so myopically on the exploitation of new digital technologies to produce material or formal effects, the discipline of architecture has been constrained by a pre-digital legacy of thought—one heavily invested in the idea of architecture as monumental and spectacular, an immutable embodiment designed as an act of authorial genius by the architect.[4] Consequently, this has prevented it from looking more closely at the ways that digital technology has actually changed cultural practices and values, particularly with respect to form, permanence, and authorship. It has therefore missed the opportunity to consider how a response to those cultural changes could sponsor an alternative vision of architecture that could be considered a paradigm shift in its own right, and which could produce a fundamentally new approach to architectural production that would be considered more culturally significant and relevant.

Cultural Consequences of the Digital Paradigm
The quality that distinguishes the current digital age, that both justifies its consideration as a distinct paradigm and also proves the most problematic for architecture's traditional mode of production, is the altered relationship that individuals have to information—both in terms of its form and its direction of flow. In the first case, once information has been digitized it essentially loses its form. Instead, the digital paradigm is distinguished by a higher value being placed on the information itself than on its particular embodiment.[5] Today, rather, the notion of an original, preferred embodiment of this information is an idea that is essentially meaningless; information content now takes precedence over its form(at). What contemporary society values instead is the ability to disseminate, update, and reformulate this content—all of which has been facilitated by the digitization of information.[6]

Consequently, the second significant distinction of the digital paradigm is the blurring of the boundary that had previously always been assumed to exist between the author of a work and its audience. While the flexibility of web browsers has long allowed individuals to personalize the information they receive through filtering (and now more automatically through the use of RSS feed aggregators), this process of selection is not endemic to the digital age, but is rather an exercise in freedom of choice occasioned by a proliferation of information and the resulting competition—dynamics that significantly predate digital technologies. What the digitization of information allows, however, is for the form of information to be deconstructed, and for the same content to be manipulated, augmented, and reconstituted in another form altogether. Coupled with the proliferation of software and the availability of access to the internet, the digital era has witnessed the unilateral flow of information from author to audience being supplanted by a multilateral flow. In particular, the introduction of open-source and open-content databases—such as Wikipedia, Blogspot, YouTube, and Twitter—has allowed individuals to easily become authors through creating and editing information for consumption by others.[7]

The popularity of open-content websites such as wikis, blogs, and online forums or chat rooms that allow or encourage authored content by their users is a barometer of the degree to which society values such participation, and the degree to which individuals associate such digital technologies with the ability to both be expressive and to manipulate or tune their relationships with others. Recent studies focusing on teens are particularly telling—and also particularly consequential for architecture, since this demographic will soon become the dominant culture. A 2005 study, for example, showed that one half of all teens were internet content creators, meaning that they 'created or worked on a blog or webpage, shared original creative content, or remixed content that they found online into a new creation'. This study further asserted that 'teens and adults alike have embraced the ability to gather, chop, blend, and re-blend content to create new expressive materials', and that 'younger Americans have grown up in a world of media forms that allow them to participate in the production as well as consumption of content'.[8] And although this study emphasizes a trend in the teen population, an earlier study demonstrated that of those who currently create content for the internet, nearly half are between the ages of 30 and 49, which indicates that this cultural dynamic is already a demographically broad one.[9]

For a discipline such as architecture that has historically been so invested in the production of original, immutable works by a single author (the architect) the digital paradigm therefore presents a particular problem: it has given rise to a culture that expects and values the ad hoc customization, creation, and reformulation of content, which is a phenomenon that architectural production as it is currently manifested can not satisfy.

A paradigmatic shift in architectural production—one characterized by work that allows individuals to participate in manipulating its physical 'content', such as its formal or spatial relationships—is required in order for the discipline to respond directly to this cultural dynamic, and thereby re-establish a degree of cultural relevance. It would constitute a 'digital' architecture insofar as it could be reconfigured into various different formats by the occupant, in much the same way that digitized information can be reconstituted into various different forms—and, in so doing, it would confer a degree of authorship to the occupant, allowing them to become architectural 'content creators'.

This approach would have the additional advantage of releasing the discipline from its current and prevailing reliance on novel, static formalism as the sole means by which it can assert its relevance to society. Apart from the paradigmatic problems with the notion of a 'digital aesthetic' noted above, such an emphasis on immutable form is problematic given the overwhelming discrepancy between the typically long endurance of a work of architecture and the brevity of society's attention to or association with an idea that would support a particular architectural form. In other words, an architecture based upon a static, immutable formalism is inherently doomed to rapid obsolescence, and will therefore quickly lose its ability to engage the society it is meant to address. In contrast, an architecture that primarily derives its value or affect from its ability to be tuned or manipulated can assert such value in spite of its particular formal character, in much the same way that information largely retains its value across multiple types and generations of formats.

FIGURE 1: *Urban Freeway Message Boards (Los Angeles, California, USA) by Doug Jackson Design Office, 2009*. This proposal for Los Angeles subverts the social and cultural segregation that has resulted from the physical intrusion of the arterial freeway system within the city grid by suggesting the installation of a series of neighbourhood-specific message boards along the freeways that allow individuals and commuters to post content and interact with one another. (Image courtesy of Doug Jackson Design Office).
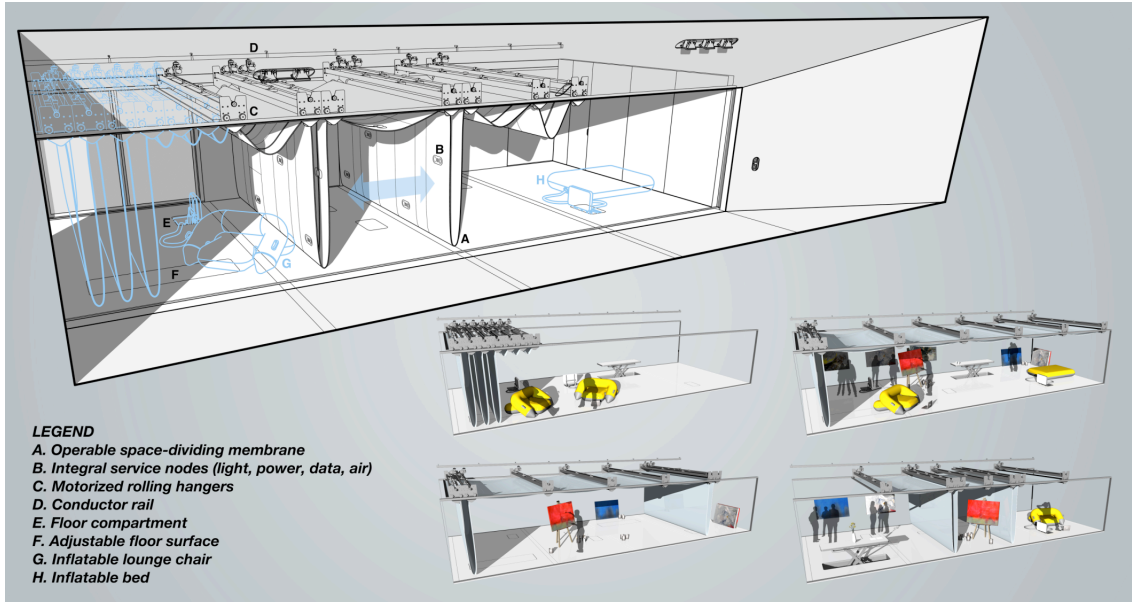
FIGURE 2: *DRAPE Artist Residence and Gallery (Lincoln, Nebraska, USA) by Doug Jackson Design Office, 2007*. This proposal for an artist's residence, workshop, and gallery features a flexible space-dividing membrane draped over movable hangers that can subdivide the open gallery/workspace as desired by the occupant. In addition to its ability to inflect programmatic relationships, this membrane allows the occupant—through the manipulation of its form—to make relatively nuanced statements about the relationships and status of the spaces that result, and the relative significance of the activities they support. (Image courtesy of Doug Jackson Design Office).

The images that illustrate this essay (Figures 1-4) serve as an example of this alternative approach. While none of them are formally novel, they have not been produced in order to be evaluated based on their form. Rather, their value—as well as their paradigmatic difference—lies in their focus on supporting varying degrees of co-authorship by the individuals that interact with them, which allows those individuals to impart a significant change to the architectural quality of the work in question. While this act of authorial enfranchisement has been implied by certain marginalized early Modern works (such as examples by Eileen Gray, Pierre Chareau, and Gerrit Rietveld) as well as works from the 1960s (such as that by Archigram and Cedric Price), these previous examples failed to truly emphasize the potential for allowing individuals to produce significant changes to the architectural character of the work in question.[10] Moreover, none of them succeeded in diverting the course of the mainstream away from its traditional emphasis on the architect as the sole, genius author of an immutable form. In fact, the disciplinary inertia behind the architectural mainstream's emphasis on form, novelty, and individual authorship is so strong that it remains difficult to consider these prior examples as anything other than marginal curiosities whose value has been depleted, rather than as prescient and still credible (if somewhat nascent) examples of a change that now seems necessary for the discipline of architecture to fully engage contemporary culture.

FIGURE 3: *Shuffle (Los Angeles, California, USA) by Jones, Partners: Architecture, 2003*. This installation at the Southern California Institute of Architecture demonstrates a prototype system for re-configurable architectural space-making elements. In this case, three columns can be repositioned in order to allow individuals to create different architectural relationships within the gallery space. (Image courtesy of Jones, Partners: Architecture).

Discipline vs. Change

The paradigmatic change in architectural production suggested in this essay is, however, frustrated by architecture's very nature as a discipline, and the way that such disciplinarity precludes radical change. As the very word 'discipline' derives from the Latin root for knowledge and instruction, it consequently implies a definite sphere of knowledge that grows slowly through addition and tempered refinement, and maintains a tradition that is passed down through generations of disciples. This process creates an inertia that resists sudden, radical change.

Yet, architecture is unique in that it is both a discipline and a cultural practice, and it must therefore grow in relation to the culture within which it operates. As long as culture changes slowly and predictably, this remains entirely possible. However, as culture has become increasingly diverse and subject to drastic changes, architecture—which is further hampered by the sluggishness of the medium of building—has been hard pressed to maintain its connection to and status within that culture, and has been forced to contend with the idea of more rapid and extreme changes than the idea of a discipline would typically allow. Consequently, over the last century the discipline of architecture has attempted to salvage its cultural connection by behaving in a fashion that is rather undisciplined—desperately casting about for both inspiration and credibility from other areas of knowledge that have more cultural cache, including engineering, linguistics, mathematics and, more recently, biology.

Ironically, despite this loosening of the boundary of the discipline, the actual benefit to the discipline has been small. Intellectual borrowings have given rise to successive formalisms, but even the most extreme revolutions in thought and production have been relatively superficial, and have failed to dislocate architecture from a traditional practice that increasingly fails to captivate the culture it is meant to address. Meanwhile, this opening up of the discipline to other fields of interest in a desperate attempt to maintain a connection to culture has also rendered it both vulnerable and obscure. The boundary of the discipline has become extremely porous and irresolute, and the territory within that boundary is constantly shifting. As a result, there is an increasing lack of consensus about the very nature of the discipline, about its boundaries and its direction. And while such debate is potentially instrumental in keeping any discipline from becoming too orthodox, in the case of architecture it has also allowed outside forces to variously define it and thereby neutralize it.

Regardless of whether this is viewed as a healthy debate or an identity crisis, it has a profound affect on the way that architecture is viewed from a cultural standpoint. Specifically, it makes it difficult for architecture to once again act as a cultural force, because it is currently manifested in such diverse forms and motivated by different agendas. This discord has contributed to a substantial loss of cultural prestige, and so its works have come to be evaluated by more mundane market-driven criteria such as practicality, performance, and economy—which has, in turn, drastically limited the opportunities for architects to produce works that attain a level of cultural significance.

Therefore, while architecture's confused and desperate embrace of other disciplines' knowledge and practices can be understood as a recognition of its own loss of cultural prestige, its simultaneous and contradictory resistance to fundamental change can be seen as a necessary tactic to preserve its own survival as a discipline. In his 1955 book *Designing for People*, the industrial designer Henry Dreyfuss coined the term 'survival form' to refer to the formal elements of the prior model that must be retained within the new model for it to be successfully marketed.[11] It recognizes that a large part of the value of a product is carried in the continuity of the brand and its identity, and that a radically innovative model can actually fail based simply on the degree of its deviation from the identity of the brand. Therefore, with the survival of the brand as its priority, 'survival form' is a concept that favours incremental, linear, and superficial change, and eschews more fundamental or radical re-thinking. It is challenged, however, when a competitor is able to successfully market a fairly significant innovation that would require a significant overhaul to match. In such a scenario, a difficult decision must be made between the value of the brand lineage and the value of the change.

In essence, recent cultural changes brought on by digital technologies are forcing architecture to contend with a similar dilemma. While, as suggested above, architecture needs a fundamental overhaul in order to re-align its production with the interests and priorities of the digital-age culture within which it attempts to operate and thereby produce works of significance and relevance, it also needs the sense of identity, tradition, and consensus that the idea of the discipline confers in order to preserve the opportunity to do so in the face of the overwhelming mediocritising pressures of the marketplace. Like circling the wagons in order to hold the hostile forces at bay, architecture requires an increased sense of disciplinarity in order to survive as a cultural practice.

The critical question is whether these two requirements are compatible. In a culture that is so ideologically diverse it becomes difficult to imagine achieving the consensus of opinion within the discipline that would be required to enact any radical shift in production while maintaining disciplinary cohesiveness. Indeed, architecture's primarily constrained and superficial engagement with the digital paradigm so far begs the question of whether architecture's nature as a discipline—and consequent need to maintain a degree of disciplinary integrity as it simultaneously attempts to grow and progress—dooms it to the kind of superficial changes observed so far, and ultimately prevents it from effecting the more radical changes necessary for it to reclaim a degree of cultural relevance.

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[1] See, for example, Neil Leach, 'Digital Morphogenesis,' *Architectural Design*, vol. 79, no. 1 (January 2009): pp. 34-37.
[2] Ibid., p. 34.
[3] This argument is clearly expressed in Ali Rahim's introduction to the 'Contemporary Techniques in Architecture' issue of *Architectural Design*. Rahim acknowledges that architecture must engage culture, but argues that this engagement takes the form of a 'feedback loop' in which architecture responds to cultural change and then produces works that, in

turn, impart a change to culture. 'Manufacturing and production techniques', he writes, 'such as rapid prototyping, CNC milling, laser cutting, three-dimensional printing, mass customisation and flexible gel molding should be understood as part of cultural proliferation. As culture adapts to the effects produced by contemporary techniques, the evolution of the cultural milieu is further influenced'. However, this paper suggests that architecture has had and continues to have relatively little effect on culture—particularly when compared to digital technologies—and that this condition is unlikely to change unless the character of architecture's built work fundamentally changes in a manner that allows individuals to exercise some degree of creative control over the work. As such a fundamental change is not evident, neither in the examples that Rahim provides nor at large, the veracity of his position is questionable. See Ali Rahim (ed), 'Introduction', *Architectural Design*, vol. 72, no. 1 (January 2002): pp. 7-8.

[4] The fact that such 'authorial genius' is now aided by sophisticated software that can model dynamic systems does not change the key issues: that the value in such work, if any, is carried in the final form and the effects produced by that form, and that the work is an immutable embodiment produced by a single author.

[5] In fact, to digitize something is to fundamentally strip it of its form. Consequently, in an age of digital information, the value placed on an original embodiment has both lessened and also adopted a nostalgic connotation—such as, for example, the lingering value ascribed to vinyl records in the face of the overwhelming cultural adoption of digital music files.

[6] To take the musical example even further, the rise in popularity of DJ-ing and of the use of sampling, mixing, and mash-ups within the music scene over the last 20 years is one of many indications of the cultural importance placed on content customization, and the respective diminution of importance placed on the original embodiment. And while the vinyl format has long retained a foothold within the DJ community for both practical reasons (the ability to 'scratch') and symbolic reasons (marking this community as an anti-mainstream subculture), even this format is losing out to digital ones—and in the process making it easier for the average individual to DJ as well. An article that appeared in *The Guardian* in 2004 noted the rise of 'MP3Jing', and trumpeted the importance that the Apple iPod has played in extending the accessibility of DJ-ing. See Raj Panjwani, 'Last Night an MP3J Saved My Life', *The Guardian,* January 7, 2004.

[7] 'Open-source' indicates software in which the scripting language is made available for editing and refinement by its users, whereas 'open-content' refers to software, such as a database, where only the content is made available for editing and refinement by its users. The distinction in terms of authorship is that in the case of an 'open-source' creation the original author's contributions are slowly manipulated by the efforts of other authors over time as the work is refined and edited. In the case of an 'open-content' creation, however, the original author's contribution constitutes the framework that supports the editable content contributed by other authors, such that the original authorship is preserved. An example of this distinction would be between Linux, an open-source operating system whose source code is freely editable by anyone, and Wikipedia, an open-content database whose content is editable by anyone within an established, non-editable framework that preserves the look and functionality of the database. Whereas the first is more radically open and democratic, it is also problematic in terms of its ability to serve as a useful model for architecture, in that its essential character is not necessarily preserved over time. An open-source architecture, therefore, would necessarily be a transient one, since those aspects that define its architecture-ness (its architectural 'source code') would be able to be modified in such a way that could potentially undermine its nature as architecture. Open-content creations, meanwhile, sacrifice a degree of openness in exchange for the ability to preserve their essential character. As a model for architecture, therefore, they describe an object whose nature as a work of architecture is preserved over the course of its manipulation by others.

[8] Amanda Lenhart and Mary Madden, 'Teen Content Creators and Consumers', Pew Internet & American Life Project (November 2, 2005). Online. Available HTTP: http://www.pewinternet.org/Reports/2005/Teen-Content-Creators-and-Consumers.aspx (accessed 14 March 2009).

[9] Amanda Lenhart, John Horrigan, and Deborah Fellows, 'Content Creation Online', Pew Internet & American Life Project (February 29, 2004). Online. Available HTTP: http://www.pewinternet.org/Reports/2004/Content-Creation-Online.aspx (accessed 14 March 2009).

[10] While the works of Cedric Price and Archigram stand as remarkable challenges to the monumentality of orthodox Modernism, the kind of freedom that they confer upon the occupants is more of a freedom of choice than a freedom of (architectural) expression. In imagining frameworks that supported activities, programs, and experiences that could be manipulated over time, the plug-in or catalogue-like effects described in their work frame the users more as consumers or channel surfers than as true authors of the architecture. Rather, these users or occupants were meant to operate within a formalization of a hardware-software dichotomy—an architectural dichotomy that remained formally unaffected by any specific manipulations at the hands of the occupants. In contrast, the alternative approach to architecture suggested by this essay would enable individuals to manipulate the work in such a way that the architectural character is affected, thereby elevating the individuals to the status of co-authors.

[11] Henry Dreyfuss, *Designing for People*, New York: Simon and Schuster, 1955, pp. 59-60.

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