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Designing in Liquid Times: Generative Graphic Design in an Age of Uncertainty

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According to sociologist Zygmunt Bauman, we are living in “liquid times.”¹ Because of globalized capitalism, local governments and institutions are unable to respond to the needs of those they have been created for. Where the global elite is able to move through the world freely—to invest where they see fit and leave again at their will—most people are “doomed to stay local,”² and they face increasing anxiety as they realize they have little control over their lives. These theories that Bauman penned in *Liquid Times: Living in an Age of Uncertainty* also resonate with the phenomenon of the information age. In contemporary society, the way we consume information has also started to become more liquid. We “stream” data to our computers. Content “flows” across different platforms and adjusts itself to the material container and the angle at which we view it. Information is no longer held in static, material formats, but is made mobile and ephemeral. This shift has had consequences for the graphic designer too. The designer not only has to adapt to this new medium, she is also no longer the only one with the skills to use it. Digitization and the Internet have made

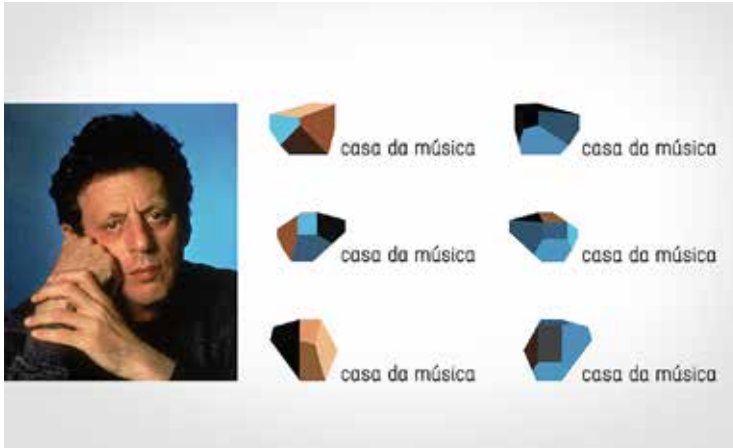


Figure 1. *Casa da Música logo generator*, 2007, brand identity design. Art direction by Stefan Sagmeister, design by Matthias Ernstberger, Ralph Ammer, and Quentin Walesch. © 2007 Sagmeister & Walsh

it increasingly easy for laypeople to access software and tutorials to make their own designs at little to no cost. With these developments, graphic design as a profession has started to lose its definition and its sense of identity.

Generative graphic design has emerged in accordance with these changes in the field. This essay maps the discourse surrounding the use of generative design, with particular focus on how it impacts its audience, or users, in the context of modern, “liquid” life. Rather than the design of a finished product, generative design concerns the organization of a process or a set of rulers from which that product automatically results. Contrary to more traditional or conventional types of design, a generative design cannot be easily reproduced or appropriated. Yet, at the same time, it allows for manipulation by people other than the design’s author. For example, Sagmeister & Walsh’s logo generator for the Portuguese concert hall Casa da Música (Fig. 1) interprets the building’s architectural shape as an empty container that is filled with an uploaded image’s dominant colors. The format ensures the continuity and quality of the brand as well as its ability to adapt to different uses. Generative design enters into an interesting relationship with its audience; it both asserts the designer’s authority and control yet simultaneously gives it away. This

begs the question of what kind of relationship is being established here. Is it negative or positive? How does it reflect back on the issue of the graphic designer's dissolving professional profile?

Input and Output

Generative design includes a wide array of definitions, though not all of them are necessarily appropriate. First, it is often assumed that the term “generative” implies a computer process when this is not necessarily the case. Take for example coding, which is often associated with a computer process. In the book *Form+Code in Design, Art, and Architecture*, coding traces its roots back to conceptual art.³ Much like a programming code contains instructions for a computer to carry out, conceptual art often consists of a set of rules to be carried out by humans. An example given in the book is artist Sol LeWitt's “Proposal for Wall Drawing,” which codes his ideas for an artwork into instructions to be carried out by “draftsmen.”⁴ The language of human programming code can be ambiguous and contradictory, introducing variables to the rules that lead to unexpected results. LeWitt's famous quote that “the idea becomes a machine that makes the art” fits into this paradigm as well, foregrounding the process in image-making.⁵ In conceptual art—and similarly in generative design—a work's success is determined by the quality of the idea and the degree to which this has been effectively transposed to the process. The form is then an inevitable result.

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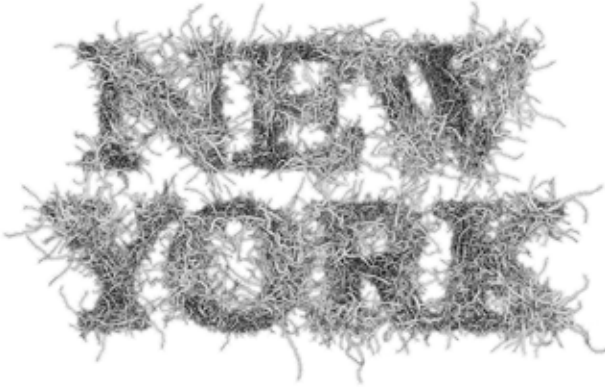


Figure 2. *Growing Data – New York*, 2011, data visualization of air quality in world cities. © 2011 Onformative

Not every work that has been made with or on a computer is necessarily generative. There is an important difference between design that is generative and that which has been generated. For example, generative design has been discussed within architecture as a useful way to create a wide variety of surprising designs or to produce a large quantity of sketches.⁶ In most of these cases, the computer assists in automating part of the process while the architect retains the choice of using (or not using) and tweaking certain designs. This is only logical considering the characteristics specific to the field of architecture, as buildings are usually much more permanent, labor-intensive, and often involve bigger budgets than graphic design projects. Designing the process according to which a building is built without tweaking its results would present too much of a risk. The importance of making this distinction becomes clear when applying it to generative graphic design. For instance, Onformative’s *Growing Data* project (Fig. 2) follows a generative process by using data of air quality in various cities to “grow” its different forms, but it is only the products of this process that are accessible to the audience.⁷ A computer program runs the visualization and audience members are not able to input their own data or manipulate the results in any way. In contrast, LettError’s *Superpolator* (Fig. 3) consists of a software program that allows the

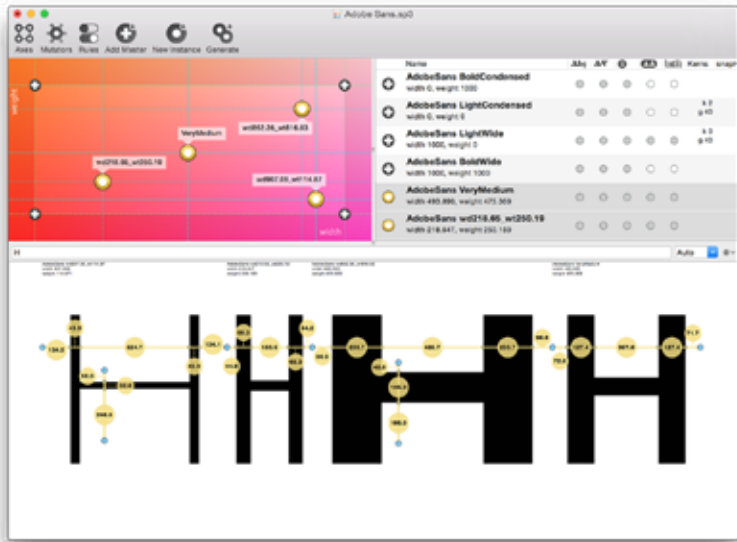


Figure 3. *Superpolator*, 2016, font production software. © 2016 LettError.com

user to generate new fonts by playing with input values. More precisely, the application is used to make interpolations for complex type families that fit the goals and intentions of the user. Contrary to conventional design where the process is the necessary means to get to a particular end-result, in the case of generative design, the process itself is the goal of the designer.

Since a generative design apparently does not focus on creating a system in order to speed up or simplify the design process, its added value for designers must consist of something else. It is hoped that a generative design will yield something more (and in some ways something better) than a conventional, author-controlled design process would. This phenomenon is known as emergence. In his paper, “Emergence and Generative Art,” Gordon Monro, a generative artist and PhD candidate in generative art at Monash University in Melbourne, Australia, reviewed various notions of emergence before giving his own definition relating to generative art. Monro’s emergence is behavior or output that is “unobvious or difficult to predict” and “evokes feelings of surprise-wonder-mystery-autonomy.”⁸ Monro emphasizes that these characteristics need to persist despite

our knowledge or understanding of the generative system, which suggests that the appeal in generative design lies in its surpassing of what can be imagined from its input and setup alone. Though this definition is interesting, it seems too broad and unspecific for a graphic design context. The unpredictability of the end result would not be very conducive to a client-designer relationship, and evoking feelings of surprise does not sufficiently explain why the designer would choose to keep the creation process open. A more specific definition of emergence is needed for it to be adequately researched.

Context and Constraint

The phenomenon of emergence has been researched outside of the context of fine art as well, which offers some clues as to how a generative approach may benefit graphic designers specifically. Organizational scientist Benyamin Lichtenstein bases his definition of emergence on findings from evolutionary studies, philosophy, and social sciences.⁹ Like Monro, Lichtenstein acknowledges that strong emergent systems transcend and are irreducible to their components (as well as the relations between these components). However, he adds that they affect “mutual causality.” That is: all emergent properties have influence on all the system’s components and the system as a whole.¹⁰ This, Lichtenstein notes, reflects the “ongoing interdependency of agency and constraint” and leads to increased capacity within the emergent system.¹¹ In other words, the system efficiently achieves what could not have been achieved by any of its individual agents alone. Generative emergence thus offers a bespoke solution to the problem at hand. If emergence works the same way in a generative graphic design process, this would present an ideal opportunity for the designer to produce something that cannot be copied or appropriated by an amateur designer given its specificity for a particular time, location, or use. This would also explain why the work remains “open” rather than becoming fixed in a product, since the design would have to afford being affected by circumstance in order to reflect its context.

It seems that generative design as a method has strong advantages for the author of the design, but what about its audience who has the possibility of exerting influence? The semiotician Roland Barthes has discussed the role of the reader in establishing meaning within the context of literary theory, which offers some ideas on how we may understand this interplay between author and audience in generative design as well. In his essay “From Work to Text,” Barthes argues that a piece of literary fiction should not be seen as a “Work” (a static object with fixed meaning and status), but it should rather be seen as a “Text” (a fluid and inconsistent convergence of meaning).¹² To be clear, both exist at the same time, but the Work pertains to the construct that has been created by the author while the Text concerns the process of meaning-making in the mind of the reader that results from engaging with the Work. Transposing this idea to generative design, it becomes clear that Work and Text approach each other, and the audience is allowed to contribute to or manipulate the Work—which, in turn, contributes to the Text again.

“The process itself is the goal of the designer.”

The Text, Barthes says, “decants the Work (the work permitting) from its consumption and gathers it up as play, activity, production, practice.”¹³ In other words, a Work that permits itself to be “decanted” allows for a reader to re-read and thus reproduce it in a myriad of different ways. Barthes compares this way of reading to the playing of a musical score. The author lays down the ground rules—the schema to be played—and the reader performs it as part of the creation of the work at the same time that he/she is consuming it. Musicologists Jeongwon Joe and S. Hoon Song suggest that Barthes is referring here to aleatoric music specifically, a genre that explores the role of chance in producing sound.¹⁴ A good example is John Cage’s *4’33”*, in which the score instructs the musicians to stay silent.¹⁵ As a consequence, the entirety of the concert hall’s sounds are framed in the piece, becoming music in the process, and the audience becomes part of the performance. In focusing on a process

that is customized to a particular context, a deeply immersive experience takes place: emergence occurs and fades the boundaries of Work and Text, author and reader, composer and listener, designer and audience.

Community and Commerce

Generative design reflects back on the field of graphic design practice at large. It has close connections here to the theories of Nicolas Bourriaud, who coined the terms “relational aesthetics”¹⁶ and the “Altermodern.”¹⁷ Relational aesthetics concern human interactions as the product of artistic endeavor. These interactions are importantly not fixed and closed, but open and fluid. The Altermodern concerns art and artists that are only locally bound in the moment of artistic practice, taking their influences from all over the globe. The liquidity of modern life, for both practitioners of relational aesthetics and the Altermodern, is rather a blessing than a curse.

In the online article “Towards Relational Design,” Walker Art Center Design Director Andrew Blauvelt does not mention relational aesthetics explicitly, but he makes many parallels between its main points and graphic design.¹⁸ To an extent, Blauvelt says, graphic design has always been relational in that it has always been concerned with organizing and steering people’s behavior. In this era however, the audience has become central to design—sometimes actively contributing to its creation as prosumer or amateur. With this development, according to Blauvelt, “the nature of design itself has broadened,” expanding into “the creation of systems and more open-ended frameworks for engagement: designs for making designs.”¹⁹ As an example, he cites LUST’s *Poster Wall for the 21st Century* (Fig. 4), a digital installation that responds to its users and generates over 600 posters per day, gathering content from diverse online sources. Blauvelt celebrates the coming of this type of design as a natural progression from postmodernism, and modernism before it—a move “from form to content to context.”²⁰ In contrast to its predecessors, relational design does not impose



Figure 4. *Poster Wall for the 21st Century*, 2013, interactive installation at Walker Art Centre, Minneapolis, approximately 8 x 3 meters. © 2008 LUST

meaning onto its audience, but organizes the conditions in which the meaning happens, which is unique to a given moment or location.

In this way, it is suggested that engaging with a system, rather than a product, performs as a kind of transparent intermediary for communication, which offers the perfect opportunity for audiences to customize their own process of understanding. This view seeps through in an interview with the LUST designers as well: “It’s very simple, through a thorough and complete research phase, a piece should design itself. That means we try not to allow preconceptions to influence any of our projects.”²²¹ According to them, the increasingly immaterial nature of design is a sign of the graphic design field maturing, doing away with the “crutches” of figurative representation and ultimately all representation, where design “doesn’t refer to anything else” and “becomes its own reference.”²²² Statements like Bourriaud’s and Blauvelt’s

exemplify a positivist and linearly progressive view of history that is much like that of their modernist predecessors.

Writers Monika Parrinder and Colin Davies also see potential in relational aesthetics for graphic design. Its open-endedness resists commercialization in a world where Bourriaud says every interaction is scripted and commoditized. Parrinder and Davies give the example of an installation at the Tate Modern's Turner Prize exhibition by A2 graphic designers.²³ In this project, museum visitors were encouraged to provide their comments and generate discussion on the artworks and exhibition. This is to be read as more than a participatory project. According to Parrinder and Davies, "it is about meeting and creating a live community,"²⁴ providing a counterweight to the increasingly commercialized museum space. Unfortunately, the writers prove reluctant to follow through with this argument completely. Certainly, money can still be made from relational design; Parrinder and Davies mention a project by Mende Design and Volume Design which employs relational design to promote a gallery show.²⁵ Even the A2 project cannot be taken out of its economic context. After all, it was only accessible and interesting to those who paid money to see the Turner exhibition. Though advocates of relational design think it has potential, it can be questioned whether issues like the commercialization of interaction can be so easily sidestepped by a focus on the process.

User and Used

Indeed, much of the criticism on relational aesthetics and its applicability to design centers on the objection that its proponents fail to recognize the bigger context in which these processes take place. Graphic design critic Rick Poynor counters Blauvelt's and Parrinder and Davies' article by pointing out that the designing of social interaction, as opposed to a finite object, does not necessarily constitute a democratic space free from financial or ideological value. As he explains, the online environment (often hailed as the ultimate democracy) makes

money from its users—perhaps even in more covert ways than “traditional,” offline sales.²⁶ In this case, the relational is not the solution to the identity crisis of graphic designers, but “a euphemism for ever more subtle ways of social monitoring and control.”²⁷ The idea that a focus on the social somehow cancels out the possibility of exploitation seems dangerously naïve.

Philosophy and fine art scholar Stewart Martin’s essay “Critique of Relational Aesthetics,” offers a more extensive evaluation of relational aesthetics in light of its claims of facilitating social interaction outside of commercialized spaces. Bourriaud asserts that relational aesthetics circumvent capitalist commodity fetishism by emphasizing the social over the object. Martin counters that this is a fundamental misunderstanding of Karl Marx’s definition of this phenomenon, which he argues does not originate in the object itself but in the object as abstract measure of human labor.²⁸ Artistic practice that foregrounds the social does not evade this issue but, at best, it highlights how social relations are embedded within capitalist systems.



Work and Text approach each other.



Moreover, even though a relational or generative design may allow for a large degree of audience interaction, there is a difference between affording circumstances to influence the work and allowing an audience member to participate. The parallel that Roland Barthes made between the reader of a literary text and the performer of a musical score falters when the professional context of music is taken into account. Jeongwon Joe and S. Hoon Song, who connected Barthes’ ideas to aleatoric music, question his idealized view on the basis that it is often not the audience, but the performer, who participates in its creation. Though they admit that *4’33”* is one of John Cage’s more open works, they point out that the piece’s instructions leave it up to the performer to decide whether or not to afford the audience’s participation, and emphasize that Western music has had institutionalized intermediaries just like the literary

world has.²⁹ Barthes describes an idealized situation that may be more difficult to achieve in reality, simply because long-standing hierarchic structures in the arts, even if weakened, cannot be so easily undone. Similarly, in generative design it can be questioned to what degree and in what way the audience is allowed to control parts of the process. The Casa da Música logo generator, mentioned at the beginning of this essay, is only accessible to the concert hall's employees, not to the general public. Moreover, manmade processes are not neutral or self-referential, as Poynor and Martin point out. Generative design is therefore not capable of constituting the neutral intermediary that the LUST designers want it to be. They cannot do away with the crutches of presentation, because at the very level of their rules, processes are representative of subjective notions on the world and will bear the traces of these ideas even after other humans—or the computer—have interfered.

Generative design concerns the design of a process rather than an end product, and this offers possibilities for designs that transcend expectation and imagination to come into existence: a phenomenon called emergence. Aside from its radical formal originality, when emergence occurs it provides the advantage of efficient self-organization according to a specific spatial and temporal context. This has enthused some designers and theorists, who consider process-focused design an appropriate solution for the identity crisis that graphic design is currently facing. Processes are, after all, not so easy to copy or appropriate, and simultaneously seem to offer a more open or transparent way of communicating with design audiences. Critics have objected that a social context does not necessarily imply a democratic space. It needs to be considered by whom, in what way, and to what degree the work can be influenced apart from by its author, as well as how this interaction itself is embedded within larger systems and structures. Unfortunately, these relations and contexts have become “liquid”—as dynamic and elusive as the designs themselves—making analysis akin to reading between moving lines. However, in order to make sense of generative design, it must be traced as a process in development without losing track of the bigger movements of which it is part of.

Endnotes

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