

# Seizing the Real: From Global Tools to Design 3.0

Philippe Casens Nathalie Bruyère

August 2020 Cubic Journal (3) *Design Making — The Values Had, The Object Made, The Value Had — Practice . Making . Praxis* 

- APA Casens, P., & Bruyère, N. (2020). Seizing the Real: From Global Tools to Design 3.0. *Cubic Journal*, (3), 104-117. doi:10.31182/cubic.2020.3.026
- Chicago Casens, Philippe, and Nathalie Bruyère. "Seizing the Real: From Global Tools to Design 3.0." *Cubic Journal*, no. 3 (August 2020): 104-117. doi:10.31182/cubic.2020.3.026.
  - Link 10.31182/cubic.2020.3.026

Publisher	Jap Sam Books The Netherlands www.japsambooks.nl	ISSN: 2589-7098 (Print) ISSN: 2589-7101 (Online) ISBN: 978-94-92852-10-6	<b>I</b>
Contact	editors@cubicjournal.org	The Editors – Cubic Journal School of Design	CUBIC RESEARCH NETWORK
	www.cubicjournal.org	Jockey Club Innovation Tower Hong Kong Polytechnic University Hung Hom, Hong Kong	🤣 PolyU Design



*Cubic Journal* is a peer-reviewed, open-access journal. All journal content, except where otherwise noted, is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0). Work may be copied, shared, and distributed when authors are properly accredited; this includes outlines of any work. Amendments to the original work needs to be shown. The licensor does not in any way endorse third party views or how journal content is used by others.

# Seizing the Real: From Global Tools to Design 3.0

### Philippe Casens Nathalie Bruyère

104 - 117

This article reflects the design community's interest in Global Tools, a 1970's radical movement in architecture and design, born in Italy and corresponding to a shift from design considered as a practice to a cultural movement that is able to propose new paradigms. Activists involved in making, such as Victor Papanek (1973), in a post-nuclear culture in The Whole Earth Catalog (1971), and by several actors in Aspen, Colorado in 1971, precipitated this movement to the design community. The movement questions the impact of a mass production and consumption model generating an economic, social, and environmental crisis. Global Tools initiated as a school by Ettore Sottsass and Andrea Branzi, guestioning the role of the industry as part of a paradigm in which the issue was not how designers could contribute to industry, but how industry could contribute to society. In this article conceived as an interview, the research activity of institut supérieur des arts de Toulouse (isdaT) reveals a manifesto towards making in a social economic and milieutechnology new paradigm, with polemic and conceptual relationships to both Global Tools and Design 3.0.

#global tools

#creative commons

#social solidarity economy

In this interview/discussion between Philippe Casens and Nathalie Bruyère, they discuss their work with Global Tools, a post-capitalist framework for design and industry seeking methods to involve consumers and users in co-generation processes. Bruyère's upcoming monograph publication with Victor Petit will describe her work at the isdaT. She worked with students and members of the public to test the abilities of new digital and software tools to foster co-creation, in contrast to historical, industrial models of production. This article was conducted as a back-and-forth interview, and it discusses the literature and premises underlying the upcoming research publication.

**Philippe Casens** <sup>PC</sup> Nathalie Bruyère, you have been conducting research for several years, which will be published by October 2020 in a book on *Global Tools* (GT)<sup>1</sup> co-written with philosopher Victor Petit.

What is your opinion on the problematics posed by protagonists of this non-design movement, gurus, teachers, and work colleagues who in all cases had significant influence on the way we see design?

**Nathalie Bruyère** <sup>NB</sup> Design is taken here as a creation tool that reconfigures and develops the autonomy of the user towards an ecological transition, towards autonomy of eco-technicalcultural milieu, and interacting with the economy of the *Commons*.<sup>2</sup>

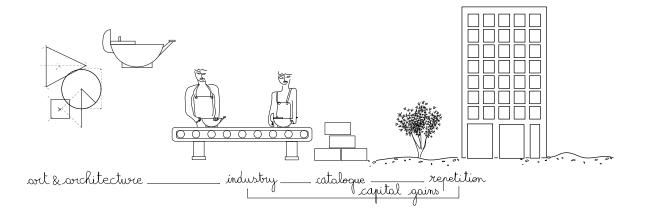
"The making, of any nature whatsoever, must involve a project. It's a cultural issue and not a productive one (it comes naturally right after)." This entails an activity fitting with the notion of project as defined in Italian, "progetto," which means both "projecting" in the sense of design and "drawing," igniting an action through the project (Alessi 2016). *Cultura del Progetto* is a term rooted in Italian Culture and concerns fields beyond design. <sup>PC</sup> Design in Italy is characterised by a relationship between designers and enlightened industrialists, as in the case of Ettore Sottsass and of Adriano Olivetti, an entrepreneur who involved many artists in the design of his typewriters but also the communications and the architecture of his factories, schools, and cinemas. Olivetti was comparable to a Steve Jobs of that time.

**NB** They say design is the marriage of art and industry. This union was first perceived as an application of Fine Arts to Industry or an application of the Fine Arts Industries. "It took a long time to theorise the transition from aesthetics of the application to aesthetics of involvement: no longer an art applied to the machine, but art involved in the machine" (Petit 2017). What is expressed here is the idea of reproducibility of artistic artefacts by industry (fig. 1).

<sup>PC</sup> Aesthetics defined not as matter of form and style, but instead as a way to involve consumers through appropriate means and transform them into actors raises a key question: How do you see the role that design should play in mitigating overconsumption? In what way can a radical change, a shift to a new paradigm, be considered? Which problematics within design should we focus on to achieve this?

**NB** The consumerist phase of design tells us that everything involves ecology: eco-label, eco-services, etc. The catalogue of consumerist life includes all alternatives. This phase is built upon postmodern principles, in which "one of the most important clues to follow could be indeed the fate of culture: an immense dilation of its sphere." This sphere of goods expands to accommodate even the previously-hypothesised opposite of industry, i.e. ecology (fig. 2).

An accumulation of the Real, the historically original, is a big leap into what Walter Benjamin



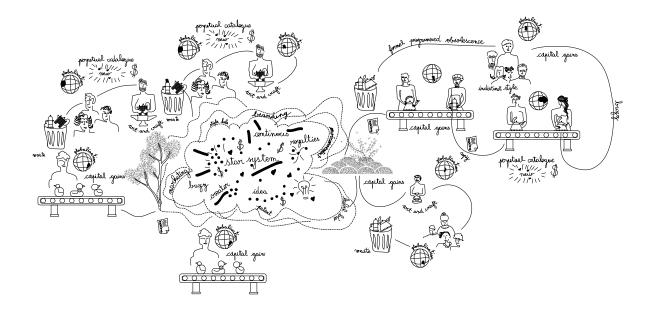


Figure 2 (bottom): Post-modernism. Source: Nathalie Bruyère.

called "the aestheticisation" of reality, which he thought meant fascism. Concerning pleasure, he referred to a prodigious exaltation of this new order of things, a fever of amenities, the tendency for our "representations" of things to excite an enthusiasm and a change of mood that things themselves do not necessarily inspire (Jameson 2011, 20).

<sup>PC</sup> What do you consider to be the role of design today and how could research into Global Tools, a movement that started 45 years ago, help us face present-day problematics?

<sup>NB</sup> We are living in a time that "apprehends the concept of the postmodern as an attempt to think the present historically at a time that first and foremost forgot how to think historically" (Jameson 2011, 15). To distinguish, we use the word *Radical* because it is relative to the normative essence of something.

For design, Italian Radicals understood the principles of radicalism in design and architecture at play in the process and subsequent meaning of modernism's failure.

In Radical Notes number 22 (1975, 8), Andrea Branzi concretely exposes the Radicals' notion of Project Culture in Italy as:

...the conflict between the systems of international culture (good design or rationalism in architecture, etc.) and local minorities or traditional cultures that grow, hand in hand and at the same time, with the cultural and technological certainties to gradually become the basic theme of a generation. This conflict takes root in culture because there are (and this is very clear) two different and opposing conceptions of the term 'minority culture.' The first consists [of] considering a sampling of objects to be re-designed and proposed through the use of complex technologies defending a set of "historical values." This definition is widely accepted in the bourgeois culture in crisis as the only possibility to re-sew a cultural context in a manageable way (Ibid.).

It is important to point out that within this schema, cultural conservation supports social conservation.

**PC** This Radical Project Culture also coined the concept of *Meta-progetto*, or Meta-project, *beyond the project*, as a possibility to graft other elements as ornament. This a-consequential grafting, considered a crime during modernity, allowed designers to hybridise elements together whose relationships could be historical, ethnic, psychological, popular, dramaturgical, or others. How has this approach developed?

<sup>NB</sup> Andrea Branzi was already writing in Casa Calda that:

The historical Amnesia of design, in other words, its ability to position itself as action and not as reflection, as history in action and not in relation to its own tradition, has so far built its strength. It is possible today that this radicality might know a decline, at the time when we rediscover historicism as the basis of the current culture. There are two ways to get out of it: by accepting to exist as a style, in other words as a codified historical language, or by defining a new growth strategy, by accepting to act in the present history and to confront each other with that of the past. (Branzi 1984, 81)

<sup>PC</sup> A well-known example of the first approach was the Swatch series (1983), a mass product assuming different expressions. It was the result of the art direction of Alessandro Mendini, former member of Global Tools. It was also considered as a shift in regard to the aestheticisation of deceptively simple looking, mass-produced objects. Why do you describe it as a betrayal of the Global Tools philosophy? What is proposed in the case of Swatch is to use the same technology, the watch movement and electronics, to propose an alternative in terms of languages, like colour and graphics, through different imaginaries. There, we rely on an analysis of behaviour to propose a different organisation of those elements and to justify the changes. But the social status of people as consumers remains the same. It is just about selling another object at a lower cost, re-marketing through Kitsch as Alessandro Mendini defined the term (Geel 2014).

And this last attitude passes for the biggest social swindle, the biggest ecological deception, by the design management of the company as superior and cultural operation (fascism)(Branzi 1975, 8).

Chiara Alessi also says:

I understood that the design fans love names, maybe this need is written in the very DNA of design, which is born and living in a company's branding or in the designer's branding, claiming an identity and a paternity proper to all those objects of common use which for several centuries were considered anonymous (Alessi 2016).

<sup>PC</sup> The shift in meaning towards the consumerism era was between autonomy and creativity. But how did this alternative culture come to be embodied in the figure of the *bobo*?<sup>3</sup>

**NB** The bobo is design's appropriation ambition embodied in a character. It's an executive from Apple, a university professor or a journalist, whose leftist ideas boil down to an Nespresso coffee and a sweater from Gap: a way of life that Brooks is ready to consider with kindness, ultimately, if it is accompanied by a renunciation of transforming the social order (Authier, Collet, Giraud, Riviere, Tissot, 2018, 27).

This figure was born after the 1960s in a fusion of the alternative and liberal culture, thus giving

birth to Radical Chic, defined by allegiance to a radical cause. But in a vital way, demonstrating this allegiance because it is fashionable, a way of being seen in a rich society aware of the designer's name present on the catalogues and press.

This corollary of the larger catalogue of strategies induces a partial relocation of work, in order to shift some of the added value in the branding. Consumers want to pay less, which seems banal to them, and simultaneously always want something new.

Design is seen as "caught" in this game of innovation where the designer becomes the knot of narration (fig. 3).

This state of indistinction — where the old differences no longer apply — is a mixture of scholarly culture and commercial culture, which has ceased to be considered, as an object of contempt to become in turn a 'source of prestige' (Foster 2002, 11).

#### The second approach

consists of the search for a different relationship between man and techniques and between culture and spontaneous creativity. Minority culture is the trigger of proposition, of action, to overcome aesthetic codes and official technological taboos in experimenting a purely and directly 'functional and private' use of the artistic means. It need not be understood as universal experience, but as a constructive act directly linked to the creative thrust of groups and individuals (Branzi 1975, 8).

This approach develops *Project Culture* as it was heard in Italy during the radical era. Radicality is the word for building technical tools for all people's autonomy (fig. 4).

<sup>PC</sup> You mention a third phase of design, placing the designer as production chain analyst and

moving away from the creative advertising slogan as market provocation. This puts the designer at the service of society by questioning the meaning of production. How do you actualise this approach and put it to work?

<sup>NB</sup> We started from a manifesto written in 2012 as part of our professional and research activity to build these three tools (Bruyere 2012, 479). Our practice is based on analysis of how objects and places are used. It examines relationships between production and consumption. This practice consequently integrates the thoughts and opinions of users into the creative process and the ecosystem, rather than being based on an analysis of economic profitability forecasts.

Social relationships are not exclusively marketdriven; in actual fact, the majority are neither of a commercial, nor a financial nature.

Nevertheless, those relations can produce a large number of useful goods and services. Our professional behaviour must guarantee mutual aid and giving practice, even if it aims for market or financial appraisal. More importantly, this valuation must never suffocate non-market relationships.

Once you participated with us in a first experiment on embroidery at Bonnefoy Social Center in Toulouse (Bruyère 2012).

The workshop tested people's autonomy to formulate their own patterns, and by doing so create a valuable relation with their productions, enabling a sense of belonging thus fighting against their own aesthetic obsolescence.

<sup>PC</sup> The research was then developed into the collective *Ultra Ordinaire* involving your studio. Which methodology did you use? What are the principles that are to be retained from this research? How did you implement them in your professional and academic activities?

#### Three principles emerged:

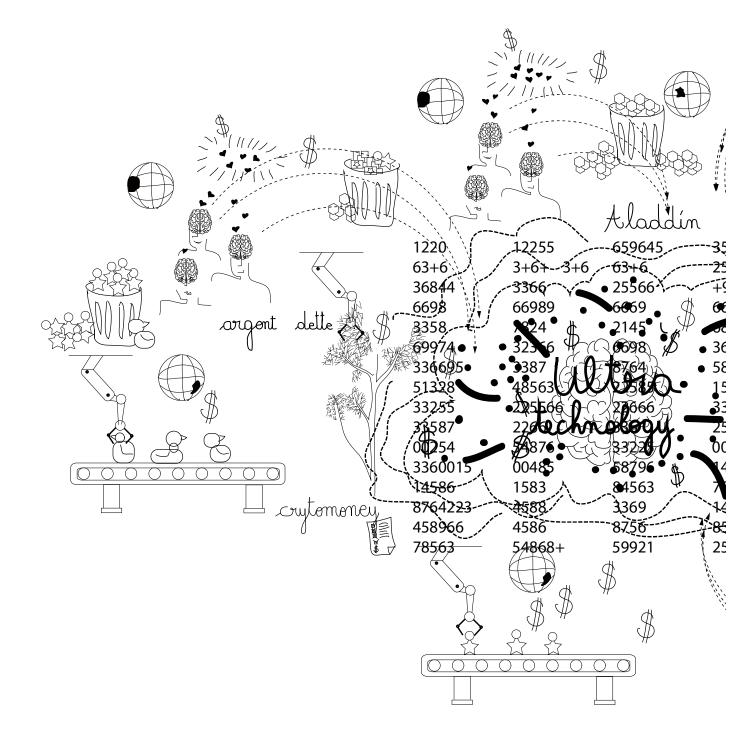
The first principle concerns observation of a context. A situation study through workshops uses the principle of immersion to create and understand the capacities of a context to support an ecosystem. As in the example of the Albi project, which aimed at food self-sufficiency, this resulted in bringing the designer's working tools to a specific eco-technical-cultural milieu site.

The technology was used to visualise the environment, and further analysis allowed the individualisation of the incorporated capital of a person or a group of people. This includes symbolic or material cultural capital, social capital, the network of mutual knowledge capital of a person or group of people, the natural capital of a place, and an infrastructural capital to identify the common practices of a community.

The second principle is the opening of standards. Deconstruction of the design process fosters a certain autonomy in allowing a different composition of an object to contribute to the reduction of obsolescence in objects. This is an approach close to the world of *makers*, who use 3D printers, laser cutters, and computer numerical control (CNC) electronics in Open-source hardware (OSH), as social tools.

In this example we developed a platform enabling users to create embroidery applied on objects, like furniture, lamps, or accessories, and an application which allows users to choose or upload an image as a pattern. The software we developed interprets the image and turns it into a pattern of holes of different dimensions, to create a canvas on a panel or silk, where the user can realise his/her own embroidery.

The same software can transform designs into patterns on wood, which users utilise to create traditional embroidery on paper cut-outs.



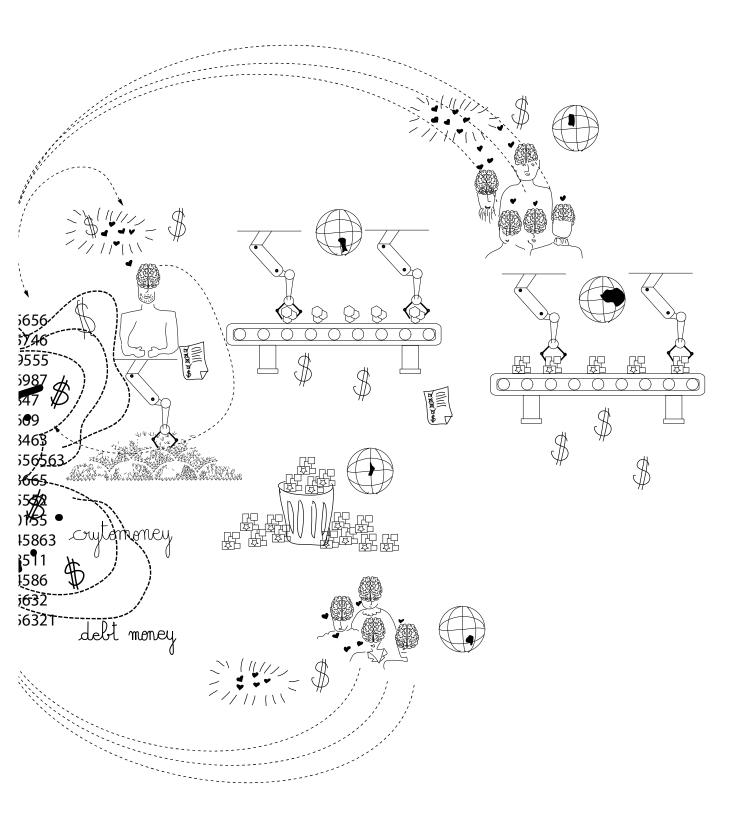
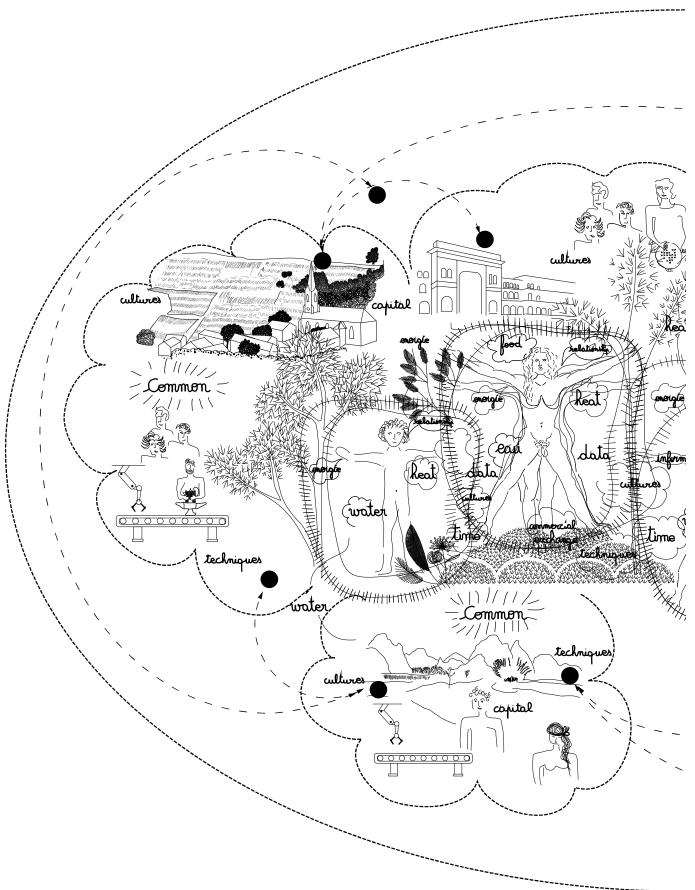
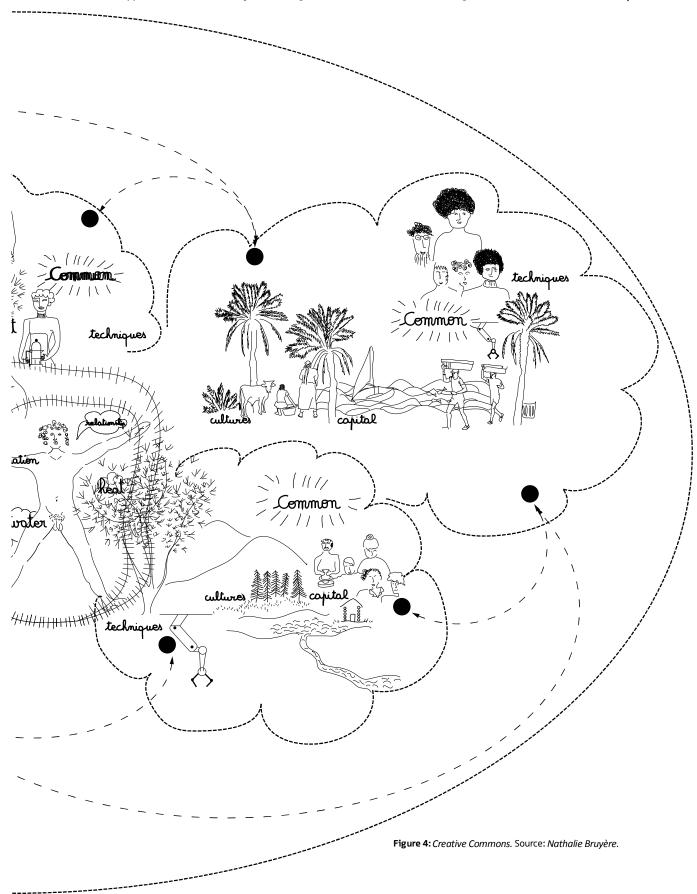


Figure 3: Hyper-normalisation. Source: Nathalie Bruyère.





| 113

<sup>PC</sup> In your professional activity you also operate at a space and architecture level that concerns another scale; the expression of *dal cucchiaio alla*  $citta^4$  expressed by Ernesto Nathan Rogers in 1946 (Rogers 1946, 215) at the Chart of Athens, suggested that designers would use the same approach to draw a spoon or a city. In most cases we see specialists drawing door handles, others windows, others houses, and others cities. When we put it all together, we find that spaces are often uninhabitable. What is the approach you are proposing to this divided, specialised industry issue in architecture?

**NB** This is about the third principle which concerns the habitability of our worlds: the design of an environment, the project of the mid-place between art, design and architecture, engineering for liveability of the world and the autonomy of users.

Habitat here is used in its primary sense, as a fundamental. It is not a question of designing an environment, but again about autonomy and openness of systems. For example, the renovation of buildings' curtain walls is based on the modern principle of a reparable, alterable architecture.

The hypothesis thus starts with an interaction with the user and questions the structural obsolescence of our buildings. For this, we shall turn the programmatic registry into a design registry and rethink the architecture from missions that are not limited to functional/formal/ technical plans, but that refer to their contribution to society, culture, and urbanity, and more specifically to lifestyle.

It is therefore a question of reviewing the notions of *need* and *use* through a re-imagining of their spatialisation in a more autonomous manner, through the design management of architectural elements.

Design is already ubiquitous in architecture practice through catalogues of products to implement. We make this connection more open by inscribing catalogues into libraries, whether computer-aided design (CAD) block libraries on the internet, or more sophisticated Building Information Modelling (BIM) libraries.

The designer as well as the engineer will be working on the opening of this catalogue to allow the practice of users by removing them from preformatted catalogues.

In collaboration with Technal products <sup>5</sup> we conceived the BIM library platform containing parametric elements based on thermal and lighting conditions, and also decorative elements, both responding to users' needs.

<sup>PC</sup> You mention in your book that the inscription of making raises the question of industrial property. How are the *Creative Commons* and other intellectual and industrial property structures facing this reality?

<sup>NB</sup> As a starting point, it is a question of considering if techniques are appropriable. The project works to open industrial necklines while respecting and protecting the investments and know-how of everyone involved. It means thinking in bundles of legal protection between patents and creative licenses of commons, to allow their free use and a consequent mix of styles. It is about conceiving artefacts as elements used for the habitability of our worlds, not as a catalogue of finished products. It is about working with the real economy by removing parasitic margins.

<sup>PC</sup> How do the Creative Commons differently impact designers' realities compared to the traditional process of industrial design?

<sup>NB</sup> We do not discuss the principles of evolutionary economic growth to make a difference within industrial, consumerist design processes. We refer to *swarming*, a phenomenon observed in beehives when a part of the population leaves with a queen to form a new colony. The open use of artefacts, through *open standards*, must enable stable swarming and production through local cultures, still open to existing economic exchanges.

<sup>PC</sup> Finally you mention the relationship between design and economy. How do the Creative Commons assume a different connotation in this case?

**NB** It establishes a *frugal*, but not *poor*, design in meaning and form, backed by the Commons. We therefore make a clear distinction between the collaborative economy and the contributive economy as the former serves common sense and common interests, while the latter does not.

The former, which will be taken in a very broad sense, is nowadays used to designate a set of particular arrangements (often, but not necessarily based on digital platforms) that connect one actor with another enabling trade monetised goods and services. Other expressions are also often used as synonyms or equivalents: we also speak of sharing economy, peerto-peer economy, economy on demand or 'odd jobs economy (Cornu, Cornu, Orsi, Rochefeld 2017, 497).

The latter, the contributive economy, was established around 1993, and concerns the generalisation of the Internet and the creation of websites located on servers via the Hypertext Transfer Protocol (HTTP) standard. This took on new meaning in the last decade through open hardware such as Arduino.

To speak about the economy of the Commons means to find at the same time a political principle and an economic principle.

The political principles which Pierre Dardot and Christian Laval identified as the premise of building a common economy were: any economic form that maintains or creates commons, with the purpose of creating and distributing shared resources for the reproduction of human communities" (Ibid.).

Similarly,

(...) it is only the practical human activity that can make things common, just as it is only this practical activity that can produce a new collective subject, far from the fact that such a subject may pre-exist as rights-holder (Dardot, Laval 2014, 80).

# Notes

- 1. *Global Tools* wish to develop the first open-source catalogue. The booklets deal with the relations between egalitarian production, human action and the evolution of technical cultures.
- 2. The Commons refers broadly to economic principles developed by Elinor Ostrom's : "Governing the Commons: the Evolution of Intuitions for Collective Action."
- From the French, "Bourgeois Bohème," referring to liberalised middle class aesthetes appropriating the aesthetics of working class culture.
- 4. Italian: "From the spoon to the city."
- 5. Technal is an aluminium extrusion and manufacturing company. See https://www.technal.com/en/

Philippe Casens & Nathalie Bruyère · Seizing the Real: from Global Tools to Design 3.0

# Bibliography

Alessi, Chiara. 2016. Design Sanza designer. Bari: Laterza.

Authier, Jean Yves. Collet, Anais. Giraud, Colin. Riviere, Jean. Tissot, Sylvie. 2018. *Les Bobos n'existent Pas*. Lyon: PUL.

Benjamin, Walter. 1920. 'Begriff der Kunstkritik in der deutschen Romantik', Berne: Verlag A. Francke, in Jameson, Frederic. 2011. *Le Postmodernisme ou la Logique Culturelle du Capitalisme Tardif*. Paris, France: Ed. Beaux-arts de Paris, 16.

Branzi, Andrea. La Casa Calda. 1984. Milan: Idea Books.

Branzi, Andrea. Radical Notes, Design et Culture Minoritaire. 1975, n°22. *Casabella* n°401.

Bruyère, Mireille. Bruyère, Nathalie. Duffau Pierre. 2012. *Faire de l'Architecture et du Design dans une Société du Partage*. Digital auto-edition. Manifesto of Ultra Ordinaire.

Cornu, Marie. Orsi Fabienne. Rochfekd, Judith. 2017. *Dictionnaire des Biens Communs*. Mayenne : Puf.

Dardot, Pierre. Laval, Christian. 2014. *Commun, Essai sur la Révolution au XXIe Siècle*. Paris: La découverte.

Foster, Hal. 2002, *Design and Crime: And Other Diatribes*. New York: Verso.

Geel, Catherine. 2014. Ecrits (architecture, design et projet) Alessandro Mendini, Paris: Ed. les presses du réel.

Jameson, Frederic. 2011. *Le Postmodernisme ou la Logique Culturelle du Capitalisme Tardif.* Paris: Ed. Beaux-arts de Paris.

Ostrom, Elinor. 2010. *Governing the Commos: the Evolution of Institions for Collective Action*. Cambridge: Cambridge University Press.

Papanek, Victor. 1973. *Design for the Real World: Human Ecology and Social Change*. New York, USA: Bantam.

Petit, Victor. 2018. "Perspectives sur le design. Métier, enseignement, recherche." http://www.costech.utc.fr/ CahiersCOSTECH/spip.php?article26#principe-indisciplinephilosophie-lieu-12

*The Last Whole Earth Catalog: Access to Tools,* 1971. London: Random House.

## Bio

During 25 years of professional collaboration with Italian designers and architects such as Andrea Branzi, Trini Castelli, Pierluigi Cerri, and Isao Hosoe, Philippe Casens has experimented with different approaches and developed specific methodologies in the field of industrial production and its communication. His teaching experience began at Domus Academy in 1995, where he directed the master in product design, then at the School of Fine Arts in Toulouse, France, and taught history and theory of design. He then taught materials and technology at NABA in Milan, Italy, before being appointed assistant professor at the School of Design at The Hong Kong Polytechnic University. He teaches design experience in the design practice of MDes and Design history, structure, materials and processes of BA (Hons), product design. His research focuses on multidisciplinarity and complexity in sustainable design.

Nathalie Bruyère is a professor in the design department at the Institut Supérieur des Arts de Toulouse, where she graduated in 1993. After obtaining a master's qualification in Domus Academy in 1994 she and Lorenz Wiegand cofounded the design agency POOL, where they design products for maximum versatility of use. In association with architect Pierre Duffau, she founded studio Duffau & Associés - Ultra Ordinaire, exploring the concept of "plug-ins" applied to architectonic structures to create an imaginary natural ambience and the boundaries between private and the public. The degree of domesticity in relation to the context space aims at the creation of an ambience developed through the demand of the people living there, instead of forcing them to adapt to an imposed environment. These city interfaces transforming the living spaces became something nonspecific, mobile, flexible and fundamentally more human.

DOI: 10.31182/cubic.2020.3.26

**CUBIC JOURNAL 2020** 

#### CUBIC JOURNAL · No. 3 · Design Making – The Values Had, The Object Made, The Value Had

#### Cubic Journal Design Social, Design Economies, Design Making

#### Number 3

Design Making — The Values Had, The Object Made, The Value Had | Practice . Making . Praxis

# Issue Editors

Daniel Keith Elkin James Stevens

#### **Operational Editors**

Gerhard Bruyns—School of Design, PolyU, Hong Kong Leon Buker—School of Design, PolyU, Hong Kong

#### Editorial Board

Peter Benz—Baptist University, Hong Kong Gerhard Bruyns—PolyU, Hong Kong Jörn Bühring—PolyU, Hong Kong Daniel Elkin—PolyU, Hong Kong Pirjo Haikola—IADE-Creative University, Portugal Peter Hasdell—PolyU, Hong Kong Yan Tina Luximon—PolyU, Hong Kong Camilo Pinilla—Universidad Nacional de Colombia Heidi Sohn—TU Delft, The Netherlands Huaxin Wei—PolyU, Hong Kong Hanna Wirman—PolyU, Hong Kong

#### Advisory Board

Eli Blevis—Indiana University Bloomington MC Boyer—Princeton University Patrick Healy—TU Delft / Free University of Amsterdam Peter Gall Krogh—Aarhus University Ilpo Koskinen—University of New South Wales Kun-Pyo Lee—The Hong Kong Polytechnic University Sheila Levrant de Bretteville—Yale University Lawrence Wallen—University of Technology Sydney Natalija Subotincic—MEF University, Istanbul

Layout Gabriella Lai and Daniel Echeverri

Cover Pattern Yiu Yim Wa (Ada)

Cover Image James Stevens

Copyeditor Khokela K. A. Daula

ISSN: 2589-7098 (Print) ISSN: 2589-7101 (Online) ISBN: 978-94-92852-10-6 Publisher Jap Sam Books, The Netherlands. www.japsambooks.nl

#### **Reviewing Policy**

Cubic Journal operates on a double blind peer review process, unless mentioned otherwise. All work is checked against plagiarism before publication.

#### About

Cubic Journal, is published in conjunction with Cubic Society and the Cubic Research Network as an academic platform aimed at the dissemination of design related research.

Operating from within The Hong Kong Polytechnic University's School of Design, the platforms aims to draw together global scholars in order to generate, exchange and discuss contemporary questions within the pursuit of advancing knowledge through and within a number of design disciplines.

#### Licensing

All work part of the Cubic Journal falls under the Creative Commons Attribution 4.0 International License (CC BY 4.0). Work may be copied, shared and distributed when authors are properly accredited. Any amendments to the original work needs to be shown. This agreement does not directly or indirectly endorses third party views or how the information is used in other formats.

#### Contact

The Editors Cubic Journal c/o Dr.ir. Gerhard Bruyns Environmental & Interior Design School of Design 802 Jockey Club Innovation Tower Core V The Hong Kong Polytechnic University Hung Hom, Hong Kong editors@cubicjournal.org

Associations Cubic Research Network





www.cubicjournal.org



#### 208 |