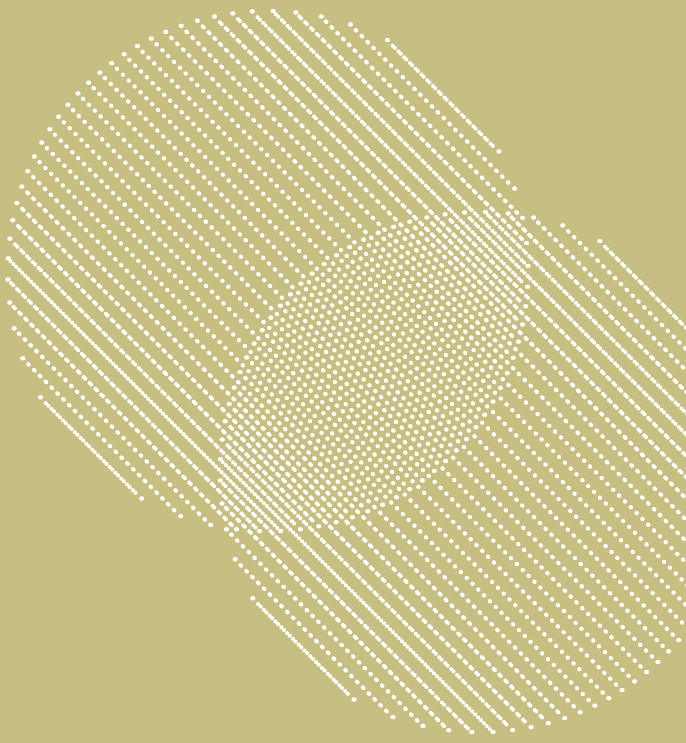

COLLECTION

ART+DESIGN \ SEMIOTICS # 03

COLLECTION

La revue *Collection* est une initiative de l'**Ecole Parsons à Paris** / Paris College of Art.

Créée en 2009 par Brigitte Borja de Mozota, la Revue de recherche internationale en Art & Design à caractère professionnel *Collection* veut être **un pont entre les théories et les pratiques, entre la recherche fondamentale et les acteurs** – les enseignants tout comme les professionnels de l'Art et du Design. Elle cherche à diffuser la recherche et à en faire une synthèse.

La responsabilité scientifique de chaque numéro thématique est confiée à un éditeur invité qui coordonne les travaux des auteurs. Le dispositif d'évaluation en double aveugle garantit le niveau scientifique des contributions.

Chaque numéro de la revue porte sur une thématique différente, et est conçu en collaboration avec le chercheur invité et le directeur artistique travaillant ensemble. **Trois fois par an, elle présente un regard original et pertinent sur les savoirs et les savoir-faire.**

Ce numéro 3 s'intéresse aux liens qui existent entre **le design, l'art et les sémiotiques** : sémiotique pragmatique, enseignement des sémiotiques, sémiotiques et pratique du projet. **Activité à vocation sociale, le design nourrit les sémiotiques et se nourrit des sémiotiques, dans une relation vivante et durable.**

Ce numéro s'enrichit d'une nouvelle rubrique. *Collection* accueillera régulièrement un *collection*neur d'art ou de design.

Nous vous invitons, avec le professeur **Bernard Darras** (Université de Paris I), le collectionneur **Jean Bernard Hebey** et le directeur artistique **Olivier Combres**, à découvrir le numéro 3 de *Collection*.

Linda Jarvin
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(a division of Paris College of Art)

Brigitte Borja de Mozota
Rédactrice en chef

La version française de la revue "Collection" est disponible en ligne.

The journal *Collection* is an initiative of **Ecole Parsons à Paris** / Paris College of Art.

Created in 2009 by Brigitte Borja de Mozota, the research journal compiling international research in art and design, *Collection* aims to **bridge the gap between theory and practice, linking fundamental research and members of the community**—including teachers and professionals in Art and Design. *Collection* seeks to disseminate research, and to create a synthesis of knowledge pertaining to art and design.

The scientific responsibility of each issue is given to a guest editor who coordinates the papers of the authors together with *Collection* scientific board .The double blind reviewing process guarantees the scientific value of all contributions.

Each issue of the journal is based on a different theme, and will be conceived in collaboration with the invited guest editor and the artistic director working together. **Three times a year, it will present an original and pertinent point of view on knowledge and *savoir-faire*.**

This third issue focuses on the connections that exist between **art and design and semiotics:** pragmatic semiotics, education in semiotics, semiotics in practice. **As an activity of a social vocation, design nourishes and is nourished by semiotics, through a vivacious and long-lasting relationship.** *Collection* # 3 introduces a new section inviting a collector in art or design.

Along with Professor **Bernard Darras** (Université de Paris I), **Jean Bernard Hebey** collector and artistic director **Olivier Combres**, we invite you to discover *Collection* number three.

Linda Jarvin
Dean of Ecole Parsons à Paris
(a division of Paris College of Art)

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03

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BERNARD DARRAS

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Design and Pragmatic Semiotics

Abstract

This article aims to demonstrate the relationship between design and semiotics.

The author of the present paper – a semiotician working in the field of design theory and practice – demonstrates how pragmatic semiotics can be useful to designers in the course of their training as well as later on when studying the processes of design, creation and development in a professional context. He also presents the main themes in the field of pragmatic epistemology and its impact on semiotics of experience. Finally, by way of a practical study, he outlines his concept of semiotic studies of design.

Keywords: Design, experience, habits, interaction, norms, pragmatism, research, semiotics

Design and Pragmatic Semiotics

BERNARD DARRAS

1. From Structural Semiology to Pragmatic Semiotics

During the 1970s, there was great enthusiasm for the semiological writings of Roland Barthes, Umberto Eco, Christian Metz, Louis Hjelmslev and Algirdas Julien Greimas[1] whose findings influenced all branches of the humanities. However, at the time when it seemed that structuralism and linguistic theory would dominate, resistance was gathering. Some semiologists of visual culture, for example, found that images could not be reduced to the study of what could be said about them and the linguistic model as seen in the context of structuralism could not directly and simply be transposed to any other field of study. It was then that the pragmatic semiotics of Charles S. Peirce[2] started to become known in France thanks to the writings of Umberto Eco (1972 and 1976) and the annotated translations of Gérard Deledalle (1978) and Joseph Chenu (1984). For certain semiologists this represented a revolution in their knowledge which, whilst providing answers to doubts at that time, opened up new leads of research, including my own.[3]

2. From Semiotics to the Study of Design

As a researcher, teacher and designer, my study interests are varied,[4] but can be grouped into three categories.

For a long time, still and animated images were my main focus, in particular the study of the production and reception of diagrams, charts and pictograms.[5] In these areas, I have affinities to information design.[6]

I have published articles in the field of semiotics of images and of visual culture (see bibliography) and I also organise and conduct research in this area, particularly visual literacy and visual studies. I argue in favour of all forms of design being taught at all levels of the school system and that the different approaches to the conception should be valued as much as creativity.[7]

Since the end of the 1990s, I have done a lot of work in the field of interactive multimedia and founded a Research and Development centre that includes a research department and offers a professional Masters in interactive multimedia. I supervise multimedia projects as well as teaching semiotics of user interface design and, by extension, all forms of interaction design. In this field, there is a great demand for reception, usability and user behaviour analysis which proves that a designer is no longer an author or inventor, but has become a facilitator of social interaction. (Thackara, 2005).

Since 2006, I have become passionate about product design and, along with my colleague, Sarah Belkhamsa, have developed a dynamic model of object communication that aims to go beyond those currently in force. Research into product design is exciting when approached using tools from pragmatic semiotics as it deals with the world from the perspective of experience, interaction, habits of action and creativity of action. To a large extent, this study has led me to renew many of my theoretical approaches and to emphasise the pragmatic, interactionist and externalist dimensions (see bibliography).

3. What Is the Difference Between Semiology and Semiotics?

As I briefly said, even though the definition and study of the sign are central to both these theories, their concepts and epistemologies are so different that they are ultimately incompatible.[8]

To date, all attempts to unify them have failed. Semiology remains deeply marked by its linguistic origins and continues for the most part to stress the primacy of structure over event.[9]

1 Greimas"s work on structural semiotics formed the basis of the theories held by the Paris School of Semiotics.

2 Pragmatic semiotics was developed by Charles Sanders Peirce at the end of the 19th and beginning of the 20th centuries, within the framework of American pragmatic epistemology.

3 I was initially trained in semiology, then semiotics at the Sorbonne followed by further studies in different semiotics labs.

4 I teach semiotics of images, graphic design, information design and product design at Paris 1 and Paris 8 Universities and as guest professor at the universities of Curitiba and Recife in Brazil and Carthage and Manouba in Tunisia. I am also researcher in semiotics at the Institute of Media Arts of Yonsei University in Seoul, South Korea.

5 Particularly a fundamental study of drawings by children and adults with no previous training in drawing.

6 In this area, I work together with the Society of Information Design of Brazilian universities which regularly organises conferences.

7 Semioticians have a preference for "flat" things, such as texts, images, screens at the expense of the world of small and large objects as well as space. In my opinion, this is a legacy of the academic tradition and its emphasis on books and the written word.

8 The same terms are often used in both theories, but their meanings and usage are different, which can be confusing for a layperson.

9 Jacques Fontanille"s writings on this subject are encouraging in this direction.

Semiology and semiotics - definitions

Toward a structural semiology	Towards post structural semiotics	Towards pragmatic semiotics
Ferdinand de Saussure (1857-1913) Jakobson --> Prieto, Barthes, etc.	Louis Hjelmslev (1899-1965) A. Julien Greimas (1917-1992) --> École de Paris	Charles S. Peirce (1839-1914) --> Morris, Uexküll, Savan, Eco, Deledalle, Seabock, etc.
- Origins in linguistic - Dyadic sign - Semiology of the discontinuous - Structural primacy - Principle of immanence - Production of meaning as consequence of the signs internal structure - Code - Removed from environment - Removed from their creator - Removed from their receiver user - Meaning is frozen - No enunciation - No modalities	- Origins in semio linguistic - Hexadic sign - Continuous - Dynamization of the structure - Immanence / Manifestation - Sense as an effect of a system of meanings - Norms of a discourse and kind of texts - Environment, author and receiver-user are components of a more global text considered as the base for the analysis - Modalities (believing, knowing...) - Enunciation and subject - Meaning and modes of existence	- Origins in logic and pragmatism - Triadic sign - Vaque & continuous - Holistic and systemic - Relation - Interactionnist - Constructivist - Pluralist - Meaning is linked to practical consequences (potential, deliberate or actual) - Beliefs and habits - Situated experience - Context as part of the sign - Dynamic semiosis in the process of becoming *ad infinitum*

It remains committed to the principle of immanence[10] and, accordingly, sees the production of meaning as a consequence of the internal structure of signs and texts. Under this approach, "text"[11] and speech are made up of signs articulated in a system that through analysis are detached from their environment, creators and users. "Outside the text no salvation!", as the saying goes based on a sort of Saussurian vulgate, yet this immanentist principle is increasingly being challenged and laid open to the consideration of other degrees of relevance such as enunciation, argumentative practices,[12] situations, practices, modalities, forms of life, etc.[13]

Pragmatic semiotics is, for its part, much more holistic and interactionist. It examines signifying experiences taken from real life within the network of interlinked environments. Practical consequences (potential, deliberate[14] or actual) of signs are their meaning and these meanings are the result of the interplay of beliefs and habits of action that are re-enacted in a given experience.

Structuralist semiology is as deeply rooted in the dichotomies proposed by Ferdinand de Saussure (Signified/Signifier; Synchrony/Diachrony; *Langue/Parole*; Denotation/Connotation, etc) as pragmatic semiotics is in the triadic systems developed by Charles S. Peirce (Representamen + Object + Interpretant; Symbol or Icon or Index; Abduction-> Induction-> Deduction; etc)

To put it rather coarsely, we might say that the first dissects, reduces, freezes and dualises the world. The second, however, is evolutionist and attempts to address a living world open to diversity, complexity and growth.[15]

10 The principle of immanence characterises that which is part of the being itself without considering external actions.

11 Poems, images and objects are interlinked signs that together form text.

12 For a long time, semiology restricted its study of argumentative practices to those of classical rhetoric, which led it to sometimes excessively adopt the labelling system of tropes and figures as a result.

13 Studies in this field by Jacques Fontanille, Claude Zilberberg, François Rastier, Alessandro Zinna and Groupe μ are open to, and in favour of, change.

14 Or to be more precise, decided on after a period of deliberation, but not yet carried out into real action.

15 Here we should do justice to the efforts of semiologists: following the very important contributions by Louis Hjlemslev, Algirdas Julien Greimas, Jacques Fontanille and others in this field, neo- or post-structuralist semiotics has now renewed itself and increasingly integrates pragmatic paradigms – without necessarily turning interaction into the principle and finality of signification.

4. Should a Distinction Be Made Between Semiotics and Semantics?

16 It is possible in semiology[16] , but it doesn't make any sense to do so in pragmatic semiotics – having said that, Klaus Krippendorff favoured the term "semantic" in *The semantic turn: A new foundation for design*. Aside from the catchy title, his intention was to avoid confusion and set himself apart from semiology's binary approach. In this book, he puts meaning at the heart of design and rejects any kind of dualist approach, e.g. "semioticians who believe in the primacy of the distinction between signs and what they represent and signify (...)" (Krippendorff, 2006: 46). The use of the term "semantic" allows him to highlight meaning in such a way as to clearly break with semiological approaches, but in actual fact, his entire argument is a defence of pragmatic semiotics and the way it puts meaning and interaction at the heart of any meaningful experience. Pragmatic semiotics offers[17] an "organic" and ontological way of articulating meaning as expression of the sign and of semiosis wherein the destination of the sign is the meaning and action that accomplish it.

17

In many ways, the invention of pragmatic semiotics by C.S. Peirce marks the real beginning of the semantic turn.

The sign is seen as a dynamic and obligatory combination of three universes: an "Object" (what the sign is about, its *aboutness*) which is the initial *Alpha* and final *Omega* of a sign; a "Representamen" (parts of the world that the sign activates and brings up to date in action, context and situation); and an "Interpretant" (a sort of "translator" called on by the sign to refer to a preconstructed belief that is activated during the construction of the sign, the sense made of the sign).

Once complete, the sign produces a habit of action that is its meaning. So, in pragmatic semiotics, semantics is the integrated destination of the interpretive process and for this reason it is impossible to separate the two.

5. Which Semiotics Is the Most Suited to Design?

Structural semiotics is dedicated to the immanent (separate) study of text, images and objects along with their internal ways of working and for these reasons gives the impression of being completely focused on the object being studied. Little by little, the method has absorbed some of the approaches inherent to pragmatic semiotics, becoming more receptive to actions, interactions, usages and ways of life, and for these reasons remains commonly used in the training of designers. However, its dualist definition of the components of a sign is a theoretical stumbling block that the method cannot overcome without self-destructing.

Due to their use of signs in action and interaction, triadic pragmatic philosophy and semiotics provide a foundation that is closer to the complex reality in which the life of signs is only one part of experience. In addition, this practical theory can be easily combined with pragmatic, holistic approaches as well as findings in complexity science (systemics), cognitive sciences and cultural studies that consider signs as tools and as the object of a power struggle and counter-power.

6. Is Semiotics Useful in Training a Designer?

It is perfectly possible to analyse meaning in various design products using analytical and critical skills picked up along the way. After all, most people develop relatively keen critical skills that are sufficient for everyday, even professional, life.

A professional training period is not only about honing a person's skills, though, it also aims to form people using methods that will lead to a shift in their way of seeing the world – and then changing it.

Seeing as semiotics is a discipline specialised in the study of signs, systems of signs, meaning and processes of interpretation, it is ideal as a means to guiding students' critical analyses of their – and other people's – work. This can help, not only in the analysis of completed projects, but also in the earlier stages, such as when defining the project's remit. A semiotic approach is also called for in the evaluation of an ongoing project.

According to Bernhard Bürdeck (2004 and 2009), Ulm was the first university to offer semiotics training to designers and most other higher education institutions have followed suit, with varying degrees of success.

A designer's training period is a particularly crucial moment in the relation between semiotics and design.

More than ever, the success of a product, poster or website is now determined by the depth of understanding of their design and usage processes. Consequently, the ability to analyse different ways of producing meaning through visual, auditive or material signs is vital in a) understanding the object being made and b) learning from its success or failure.

Furthermore, for design, this implies a fundamental change of direction and requires of it increasing participation in and integration into society (Klaus Krippendorff, 2006 and in this publication). A good example of this is the current revival of jobs in this field: in web design, companies are increasingly hiring user experience architects, interaction designers, usability analysts, user interface designers, etc. On this subject, I entirely agree with Thackara and Krippendorff in seeing the designer as the user's advocate or representative. (Darras, 2009)

7. Do Designers Need Semiotics to Do Their Job?

Once they become professionals, designers, artistic directors, project managers and market researchers all spend their time reflecting on and giving meaning to the things they produce. In addition, they define the meaning of our environment. Furthermore, they manage meaning by sharing the design phase of artefacts with future users who are, as a result, involved in co-design.

Designers are, therefore, particularly influential receivers and producers of signs and meaning because the things they make are so widely distributed.

Even though they are constrained by professional considerations, they are nevertheless constantly making choices, defending ideas, meaning and projects. Regardless of their job title and no matter how important or independent they are, their work will require them to analyse signs, discourse, sign-actions, meaning, signifying experiences and user behaviour. Taking all of this into consideration, it is clear that they are anyway doing semiotics, just more or less well, depending on their training.

The more they are in possession of a good grounding in semiotics, the better they can understand what they are doing and carry out their main expertise, i.e., producing signs and being experts in meaning concerning anything to do with artefacts and interfaces: semiotics really is their world.

On the other hand, it is debatable whether semiotics have anything to contribute to the instant when something is actually being created. Of course, there is an indirect and implicit contribution in the forming of a way of thinking, an attitude, a network of norms and implicit rules, etc. However, it is clear that the explicitness and explanations that semiotics provides takes place at the beginning and the end of the creative process.

8. Can a Designer Also Be a Semiotician?

After working with designers for a while, it becomes clear that they are mostly quite gifted with regard to the study of signs. They are constantly using them, constantly coming up with new ones. In a way, they devise things so that the user can act without having to think about it. What's more, the result of their creation or invention is designed to be used on a large scale, resulting in feedback being generated regarding the effectiveness and usability of the things they have made. Increasingly, designers are directly involved in user and reception studies, therefore, inevitably, they need to know how to interpret the results of such studies to then integrate them into their own concepts. Unlike a semiotician, who, at the most, concludes an analysis with a recommendation, a designer-semiotician has to think up innovative and pertinent solutions that are both well-suited to users and compatible with the market.

Designers are agents of signs and meaning and if they lack understanding of what they are doing and the impact it has on users, then they are nothing more than executors or a suggestion box.

9. Is There a Real Gulf Between Industry and Research?

People working in product creation and design don't generally have much time to spend on looking up recent research, they are often under pressure and mainly focused on keeping an eye on the results and methods of their competitors. However, many professionals from industry do

[16] See Rastier, 2009.

[17] In pragmatic semiotics, semiosis is the process of "meaning in action". A difference is made between, on the one hand, the semioses that are internal to the sign (that is, the way the sign articulates the Representamen, an Object and an Interpretant to produce meaning), and, on the other, the semiosis that occurs when a sign is completed and becomes the vehicle for another sign (for example, when the sign "white bird" is identified and becomes the vehicle for "liberty"). In theory, commutations such as these from sign to sign are unlimited. In experience, as long as a sign-action is viable, semiosis works. However, as soon as a problem presents itself (Doubt), an Inquiry is undertaken and continues until a viable solution can be found and semiosis is stabilised – until the confrontation with the next problem arises, etc. ad infinitum.

take part in the training of design students and through this maintain some degree of contact with researchers in higher education: in any case, this is often what is claimed by professionals at the conferences to which they are invited. Having said that, the gap between theory and application doesn't only exist in the design profession. How many teachers read the latest research done in education sciences? How many mechanics read research in mechanical theory? Do researchers look up research in epistemology?

This is a widespread problem and is the result of failing to build bridges between seemingly divergent worlds. Yet, in actual fact, academic research has a direct impact firstly on the initial training received in higher education, then later on in professional training programmes. For professionals who work with educational establishments or who invite researchers to their agencies, research becomes much more accessible. However, there is a lack of contact between researchers and smaller agencies and this results in problems adapting to change and improving performance.

It does have to be said, though, that university researchers generally don't like doing applied research or making their work accessible to a wider public – semioticians are as guilty of this as anyone.

10. What Are the Most Important Characteristics of Pragmatic Semiotics?

Pragmatic semiotics has the reputation of being complex and theoretical and whilst this is still often true, it is slowly becoming more accessible due to the increasing numbers of people who are working with and teaching it.

Pragmatic semiotics was invented as a branch of pragmatic philosophy, a branch that is vitally important. The works of Charles S. Peirce, who founded both of these theories, heavily influenced American intellectuals who then spread his ideas to other countries.[18]

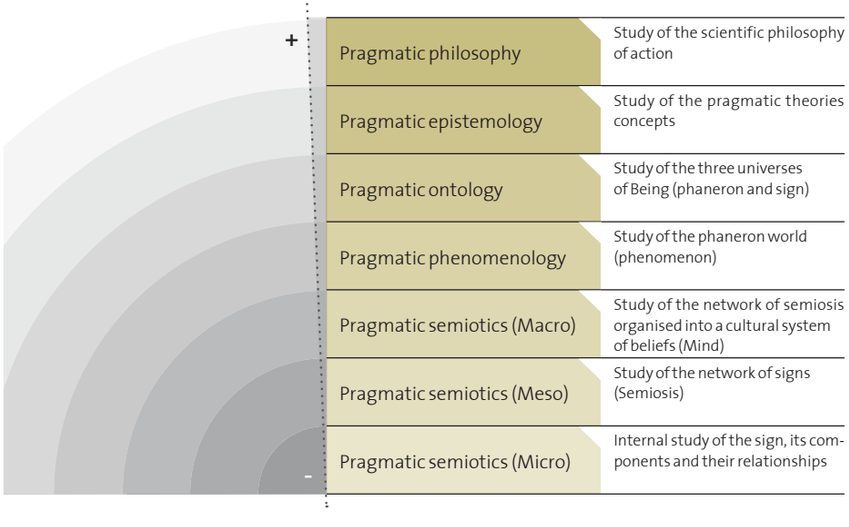
Rather than writing a long list of all the characteristics of pragmatic semiotics, I will focus on the most essential themes.

10.1 The 7 Milestones of Pragmatic Conception

To provide an image of pragmatic semiotics in its pragmatic environment, it helps to use the metaphor of "nesting concepts".

Firstly, there is pragmatic philosophy, which contains pragmatic epistemology, that contains a triadic ontology, that contains a phenomenology

The seven steps on pragmatic design ladder



[18] His work equally impacted logic and mathematics as well as the humanities. Several articles on this subject can be found in the first issue of "Collection" which is dedicated to links between design and sociology. These texts are directly inspired by the pragmatism that Peirce founded.

(phaneroscopy), that, finally, contains semiotics. Semiotics is similarly made up of macro-semiotics (study of the mind that collects all semioses), which contains meso-semiotics (study of unlimited semiosis from sign to sign), that contains micro-semiotics (study of semiosis within the sign).

This interlocking principle continues further with semiotics enabling the study of philosophical signs and ontology amongst others.

10.2 Semiotics of Inquiry and Habits

Both philosophy, pragmatic epistemologies and subsequent semiotics share the prioritising of research and inquiry. As a result, anything that is resistant to habits or inspires doubt and instigates the search for new solutions is at the heart of the pragmatic approach. Habits, research and change of habits: the links to design are once again obvious.

Semiotics also studies the process of stabilising these solutions. When a solution is found and adopted by a person and their community, beliefs are created and habits are formed and fixed. Habits are viable solutions that can be more or less fixed and that become effective and predictable. They are the result of regularities that ensue from action and interaction and are reinforced by producing meaning and shared meaning which then generally go on to become normal, then the norm. Of course, habits are incorporated into user behaviour and representations, but they are also present in artefacts which are actually materialised habits. Our entire environment is made up of distributed intelligence, i.e. concretised links and relations, and we are merely one part of it.

10.3 Beliefs, Habits of Action and Interaction

Embodied or materialised beliefs and habits of action[19] can be a) a predisposition to act or b) pragmatic programmes followed by executive programmes.

They can remain deliberations (action deliberated without acting it out) or availability, but whether they are human or artefactual (artificial), they are carried out within interaction of which experience is the framework.

Interaction and experience are at the origin and the end of evolutive and dynamic processes, processes that are embedded in the diversity of different cultural practices.

Pragmatism is therefore a theory of action, of habitual action (habit) and of socialised action known as interaction. "There is no action without interaction and this is precisely what gives action a social dimension" (Cometti, 2010: 299)

As we mentioned, it is also a theory of doubt – a real and living doubt that only occurs when an action fails thus resulting in the de-stabilisation of habits and beliefs. Consequently, it is also a theory of the creativity and invention that is called on to overcome the irritation caused by doubt and to find solutions that will stabilise themselves as new beliefs and habits.

The rise of the concept of interface in the field of design is probably linked to the increased importance given to interaction in democratic societies as well as in the humanities and social sciences.

Consequently, most artefacts function as interfaces that are predisposed to action. This is the way they can and should be treated in semiotic approaches.

10.4 Experience, Interaction and Meaning

On account of our experiences, actions and interactions, the dynamic ensemble of our beliefs, habits and changes of habit is constantly adapting, co-determining and co-evolving with our environment. Our beliefs and habits congregate together and become more or less interdependent. At this stage they constitute what C. S. Peirce called "the Mind"; Ludwig Wittgenstein, a "language-game"; Jakob von Uexküll, "Umwelt"; Nelson Goodman, a "possible world" and Stanley Fish "interpretive communities".

It is in this unstable environment that meaning is actualised and concretised in the process of interaction – and that the interaction produces meaning. However, even when it becomes a habit or automatism, this meaning is never definitive: it constructs and deconstructs itself in the complex network of meanings that are in competition and cooperation.

History of science shows us that despite all the rigour surrounding scientific practice, it is only able to produce conclusions that are "provisionally definitive" and acceptable only in temporary and partial ways. The same is true for all scientific

[19] Cornetti, (2010: 57) reminds us of the fact that Peirce took these concepts from the Scot Alexander Bain"s (1818-1903) utilitarian philosophy which defined a belief as a habit of action "upon which one is willing to act.

knowledge that, equally, can be categorised as beliefs.

In the process, different systems of signs, whether more or less stable and adjusted, are part of action and include language and all forms of spatial, visual, aural, tactile, kinesic, gustatory and olfactory communication.

10.5 Habits, Rules and Norms

Habits are types of signifying regularities that occur during actions and interactions of an agent with and in its environment. Pragmatist semioticians study these habits of action and their co-determination by and with norms and rules. With regard to this, the pragmatist approach demands a reappraisal of the traditional hierarchy between rules, actions and facts. (Cometti 2010: 177-180)

Pragmaticists believe that customary experiences and interactions are not governed by rules and that they aren't simply rules made actual. Rules aren't above the action, nor are they detached from it or explicit,[20] and we have to knock them off their idealist, abstract pedestal to see that, in fact, they are inextricably linked to the usage and practices of which they are merely a component part.

Once we see things in this way, we can regard each signifying interaction as a moment of adaptation, of *bricolages exécutifs* (Belkhamsa and Darras, 2009) and creativity of action (Joas, 1999) – an interaction that takes place within a framework of social and language games that are brought to bear in the network of interactions and agencies between human and non-human actors.[21]

With regard to this, rules are considered to be: normative operators of correction, regulators and intermediary operators that provide communication, re-linking, solidarity, identity and power relations (agencies) in and between communities of usage and interpretation.

"In this case, rules become something that are no longer the types of laws whose application represents actualisation or authority, but as the normative dimension of actions that agents carry out in a public context where the ability to react and understand is involved in the very acts of each agent." (Cometti 2010: 308)

It is not the abstract rule that fulfils during the interaction, rather the interaction that "idealises" itself in the rule the moment it is rendered abstract by institutions or theorists.[22]

Adjustments, *bricolages exécutifs*, creativity of action and abduction[23] are operations that develop in interaction with the available norms, whether they are incorporated by human agents or materialised by non-human actors (space and objects).

Pragmatism considers the rule to be more a regulating and mediating component that is always reconstructed in action than a governing, dominating, ordering and rigid form of authority.[24]

11. How Do You Conduct a Semiotic Study in Design?

11.1 Doubt and the Research Problems to Be Addressed

Everything depends on the type of study being done and on the audience it is aimed at, but overall, the research issues or "problematics" are determining.

During the researcher's work, there needs to have been a problem, a crisis, a real doubt that has arisen in the real-life experience of the researcher or client. This requires looking closely at the real-life situation. Without involvement or interest in the actors' points of view, without hindrance or being recalcitrant[25] and resisting change, an investigation would be impossible. Otherwise, it would be just doing research for the sake of it. This issue is also valid in the case of beliefs and habits of action, doubts, crises, change and learning.

[20] This is not the case in phases of formal learning where rules are clearly defined before being integrated. In immersive learning, the situation is more like real life and rules aren"t necessarily made explicit, rather developed during interaction.

[21] This is the focus of Actor Network Theory (ANT), developed by Bruno Latour and his colleagues. [22] Here I have re-formulated the following phrase by François Rastier (2009: 2) "(...), abstract language doesn"t become speech, instead speech idealises (or alienates) itself in language such as it is understood by grammarians."

[23] In his triad of logical inferences, Peirce always favoured abduction (inference as a result of a possibility, something *may be*), over the other forms – induction (inference as a result of experimentation, something *actually is*) and deduction (inference as a result of a system of laws, something *must be*).

[24] It should be noted that the degree of flexibility or rigidity of regulation and mediation that is exerted by norms depends greatly on the ways of life, groups, individuals and situations. If we take the example of norms that are directly under the control of a form of authority, e.g. the police, we can see that there is considerable variation in the pressure exerted on actions whether by explicit (laws) or implicit rules (a repressive atmosphere) or norms. In situations like this, some actors will find they are more audacious, spontaneous and "free" than others. The impact that norms, instructions and regulations will have on a group depends on the importance placed on creativity within it and will accordingly inhibit or encourage.

[25] This proves the importance of research action.

11.2 The Experiences's Scope and Framework

Choosing the framework of a real-life experience depends on the problem to be addressed – this applies to any part of the semiotic cycle of habits and change of habits that has been developed from Peirce's work (See Belkhamsa and Darras, 2009, see also page 20 in this issue). The perimeters of relevant interactions, the duration and depth of the investigation then go on to be defined.

The use of the word perimeter helps to define and limit the network of interactions generated by the experience.

In theory, the network of interactions is infinite but the power of action (agency) decreases in intensity, power and pertinence the further away we go from the centre. The length of time sets the temporal limit of the experience being studied. Depth refers to the different levels of the experience and to broader levels of the study – these can be macro-, meso- or micro-semiotics.

Most of the studies that I carry out relate to website production and anything to do with digital interfaces on the screen, i.e. the study of specifications, logo communication, visual identity, information architecture and interactive design. I also carry out studies that amount to more theoretical research and are not directly connected with production. Even then, I try to put myself in the shoes of the user, sometimes using my own experience – as I'm convinced that what we call "first person studies" are extremely useful in exploring experiences.

This is as true for actualised habits of action and the creativity of action that we deploy to attain our goal as it is for crisis or learning situations.[26]

Generally, I try to use situations where interaction – whether human or non-human – can be observed. If this isn't possible, I turn to other investigative tools and use experimental set-ups that are more controlled – of course, these are then more artificial. This way, there are fewer variables, although it's clear that in "lab" conditions, complexity is reduced.

11.3 The Analyst is Part of the System Being Analysed

It is important to bear in mind that analysts are part of the network of agents and actions, that their beliefs and interpretations are also at stake and that they should not try to hide behind some impossible objectivity or neutrality. Our world is human and it is impossible to take a completely independent stance detached from the humanity that we are part of. Neither the divine view from on high, nor a view from nowhere make any sense. We are not independent of the network of semioses with which we mostly interact and this has to be taken into account. We have to remain conscious and critical of the power resulting from the state of semioses we construct and to which we are assigned and this, depending on the doubts that destabilise our beliefs.[27]

11.4 The Inquiry

The next stage of the study depends on the issues being addressed, which part of the semiotic cycle is being targeted, the scope of the experience and depth of the investigation.

Using qualitative and quantitative methods, such as the techniques of investigation that have been developed by the humanities and social sciences, is advisable – particularly investigative techniques, comprehensive approaches and action research.

- Qualitative methods are closer to real-life experiences which are integrated in complexity. They try to grasp and understand the various beliefs and habits of action that are provoked or inhibited during the course of different interactions and the production of meaning, *bricolage*, creativity of action, crises, logical inferences, ways of fixing or destabilising beliefs and representations, learning and the like. In this field, comprehensive studies and action research are better suited.

- Once the results are obtained and if time and resources allow, quantitative studies on larger population samples are necessary to gain the consensus and dissensus regarding the beliefs of the community of agents and the interpretive community. This then enables the study of their influence on norms and rules.[28]

Whilst these collectivities are not uniform, static or coherent, they do allow us to build typologies and segments of population in terms of "clus-

[26] Video recording can be very useful in cases such as these.

[27] I am a MWWHSIC: Male, Western, White, Heterosexual, Secular, Intellectual from the Creative class. This necessarily impacts the way I see the world as my beliefs and habits of action along with the interpretive communities I mix with are all quite coherent (light-hearted reference to WASP).

[28] The study of the life of signs and semioses in groups can be produced by an integrated socio-semiotics.

ters" of habits of action or processes of inference that are common to different groups, social or cultural classes, "tribes", niches, etc. However, we have to ensure that the groups and abstractions that we make do not obscure the diversity, plurality and versatility of the way the world is made.

11.5 From Implicit to Explicit

When the information has been observed, described and collected, it has to be modelised then turned into practical and possible theoretical solutions by looking at the way in which the semioses of the products and services previously studied were integrated into the usages and semioses of users. Ultimately, we can look at how they are linked with the network of human and non-human agents.

We can then go on to identify which sign components have contributed to the production of meaning or counter-meaning, which are the integrated and functional "signs" which have not been identified as such, what are the implicit norms, rules and interpretants that are built into the action and into the creativity of action, etc. It is also possible to note the diversity of beliefs in a community of usage and interpretation as well as the resulting agreements or conflicts.

11.6 A Short, *In Situ* Practical Application of a Semiotic Study

Here is a brief application of semiotics to a very common experience: the use of a ruler.

During my semiotics lectures, I make sure that each theoretical presentation is accompanied by concrete studies that use everyday experiences and transform them into learning experiences. To this end, I take physical semioses that are easily found in the classroom and use them as teaching material. The room, walls, floor, corridor, tables, chairs, even the students' clothing and belongings, mobile phones and books are all design products I can use as examples in my semiotic analyses.

In this particular lecture, I first specified which concepts were present in the communication model of the object the lecture was examining. Among these were the differences between semiosis of production and reception, the importance of experience in framing a field study and also intelligence that is integrated into the artefacts by the production community (clients, engineers, designers, marketers).

I focused my analysis on a simple experience with a ruler that was carried out by one of my students.

Lilli R. uses her ruler to underline or highlight certain words or sections in her notes and to draw the diagrams that I present in class. At this stage of Lilli's experience, the meaning of the ruler is a reliable guide for drawing straight lines in her notebook. For Lilli, and anyone else using this instrument in a similar situation, the ruler is a guide to her pen which gives regularity and straightness to drawn marks and figures. Not only do the lines that Lilli draws correspond to the geometry of the shapes I project onto the screen, but she also attains the standards required of her by the school culture with regard to neatness, tidiness and aesthetics.

This aggregate of meanings is obtained by the implementation of a habit of action that consists of transferring the shape of the straight edge of the ruler on to paper using a pen pressing continually along the side of the ruler.

In a more technical lecture, the signs to be reproduced would require more detail and Lilli's experience would become different in that it would mobilise substantially different sign actions.

The ruler itself is an embodied habit. If it is straight, its edge forms the shortest path between the corners of both ends. A more mathematical interpretation would tell us that it embodies the shortest segment between two points. Geometrically speaking, the physical ruler is merely a realisation that is more or less respectful of the general rule: the law of geometry that defines a straight line in the Euclidean system. The slightest curve or crack (at any other angle than 180°) in the ruler would result in it betraying its fidelity to the law.

Not only does the ruler represent the "type" of rectitude, but it is, here and now, the manifestation, substitute, continuity, a sample and verification of the rule – it can even bear the same name.

However, in her experience, Lilli does not need to push semiosis back (or forward) as far as general law, she simply produces a long, ruled line rather than a "free hand", approximate one. By this, she actualises all the relevant visual aspects (which are suitable and viable) of regularity and rectitude that place this instrument in the world of mathematics.

Regularity and straightness are both desired properties of the line to be drawn and what the sign "line" is about (aboutness). In this experience, the object of the sign that Lilli is aiming for is represented by the sign "straight line" or "precise line" or "well drawn line" or "neat line" or "a line acceptable to the teacher" – and in any case, "a line that meets Lilli's requirements."

Lilli does not doubt the quality of her line because it is guaranteed by the contract that is implicitly included in the ruler, that the ruler is an instrument for ruling and measuring: this is as much guaranteed by the maker as much as the commercial semiosis that accompanied her in her purchase of the instrument.

Whenever she draws a line, Lilli updates a group of habits that manage the relationship between the line that is obtained and the line that was expected. This relationship is guaranteed on an iconic level (the mark resembles a normal line), an index level (a sort of physical imprint that is adjacent to the ruler) and on a symbolic level (a convention ensuring reliability of the instrument). The ruler is therefore an example of a straight line, materialisation of the law, a standard, guide, value, sign and token as well as a contract.

These properties have all been assembled and aggregated during different usage and learning experiences and into a "living habit that shapes behaviour and actions".

11.6.1 Behind the Flipside: Locating the Problem

At no point in her experience of drawing did Lilly specifically need to be aware of the measuring system of her ruler. However, the habit of measuring and the habit of reading the graduations are permanently and discretely performative and factitive and they establish a preferred way of using the ruler for the person who is using it. This habit of action predisposed Lilli to use "the side to read and measure with" for drawing against (also for cutting with, when necessary).

The action of drawing the line is completed without any problem, a habit of action that was never questioned.

Because of this success, Lilli has no need to explore the opposite side of her ruler and does not find out that the other side is designed to facilitate drawing (and cutting). The area for guiding the pen is thicker than the bevelled, parallax free, tapered area, and it is machined or moulded in such a way that a slight gap prevents the pen from touching the paper thus avoiding smudges and making the edge stain-proof.

However, this advantage is overlooked because semiotically and pragmatically, competition between the two sides is unequal. One has an overload of information and the other is too discreet to enter into semiosis: it simply does not make a sign. This is the type of problem that has to be considered by the semiotician and resolved by the designer.

11.6.2 From a Design Point of View

If we look at it from the production community and designer's point of view, what can be learnt from a study like this? Firstly, many of the client's specifications are not enabled in this type of common practice and some are overlooked until something is done to update them in a semiosis in action.

A message on the packaging or in an advert is not enough to establish a habit of action, so we could recommend that some sort of permanent and insistent communication be installed on the ruler itself, for example through the use of diagrams.

We have also seen that when someone draws or cuts with a ruler for the first time and is given the anti-smudge side to use, they transfer their adjusted habits of action to the tapered side. They go on to realise that when using this side of the ruler, it isn't the tip of the pen that is guided by the ruler's edge but the pen's main body. Unless they move the ruler back by a distance that is equal to that of the radius of the pen's body, the line will not be drawn in the place intended.

The person using the ruler will be able to see that they have drawn a flawless line, but they will bitterly regret the fact that it is in the wrong place. Changing their habit in this situation would require learning the action all over again, but this is generally not done where the gain to be had is minimal.

11.6.3 One Experience, Many Experiences

Given that a chosen experience will only addresses a few relevant aspects of an artefact, it follows that other experiences will uncover or se-

miotically involve other embodied components. Consequently, a new sign is formed each time a sign action is modified. The fact that this ruler is so versatile encourages multiple relationships to be activated during different tasks or uses.

In addition to the ones already mentioned (measuring, drawing and cutting), a ruler can be used as a paper knife; a line- or bookmark; a catapult; a fly swat or as a blunt instrument (to administer the infamous rap on the knuckles). It can even be a static electricity generator or a space for adverts and logos.

Apart from these well-known secondary uses, the strip of plastic can be integrated into a sign-action in all sorts of ways (as a wedge, prop, stick, back-scratcher, crumb-collector, spoon, fan, missile, etc). In order to produce meaning, each "official" or "unofficial" usage of the ruler operates one or more of the physical and symbolic properties of the artefacts and inhibits others. Each time, a new semiosis is formed in experience resulting in the production of different signs.

Some rulers are equipped with additional features that meet specific demands, for example the Cras navigation plotter (nautical instrument) or rulers with an integrated magnifying glass; line gauges for printers; tactile Braille rulers for the blind; radiologist's rulers that show up on x-rays; compass rulers for hikers.

11.6.4 Packaging and the Buying Experience

One of the main connections with an artefact takes place during the phase leading up to purchase. The period of time spent looking for the object, comparing technical, practical, aesthetic and identity features involve at least two important semiotic phases: forming a first impression and the reception of information about hidden characteristics. These semiotic phases also require close in situ examination as they influence the packaging design.

The First Impression

This relates to the visual qualities of the materials (of the ruler in this case): transparency and shine are important as are precision of shape and engraving, the smoothness of the edges, as well as the finish and presentation. These are all *qualia* that serve to create an aura of attractiveness and desirability that contributes to a first impression whose impact is decisive and lasting. As a result, the designer's choice of materials has an enormous influence on the consumer's purchase: this should be enhanced by suitable packaging and communication about the product.

Functions and Qualities of Usage

Any of the ruler's invisible or barely noticeable functions or features – such as anti-slip, glare, wear and stain coatings – that are designed to set it apart from others on the market, can only be appreciated when the ruler is actually used. For this to be apparent to the consumer before they buy, such features need to be substituted by pictures or words.

12. Conclusion

Any semiotic analysis is interaction between an agent (the analyst) and the phenomenon being studied, of which the artefact is just one dimension. In most cases, analysts are unaware of the fact that they are unavoidably part of this relationship: this can lead to various methodological and epistemological problems.

Again, immanentist studies will restrict their investigation to the limits of the artefact, thereby forcing semiologists to look at it from a universal angle by reducing them to the role of neutral and objective technicians. To take a chemical metaphor, the semiologist has to act as though he and his theory are mere catalysts of meaning that do not affect the signification.

Under the guise of a scientific approach, the rhetoric of an "objective" analysis reinforces this tendency to erase, by neglecting the interaction and analytical experience of the analyst as well as skirting around his agency over the findings. The absence of any trace of subjectivity of the analysis makes up part of the norms governing the tenets of this scientific model. However, this device only erases the signs of subjectivity on a superficial level as it will inevitably manifest itself at any moment in the form of beliefs, habits, agencies and doubt that all produce meaning.

This objectivist "habit" will only end up meeting expectations of truth, scientificity and operationality present in the recipient of the analysis whilst in passing reinforcing the value of the whole procedure.

If an analyst addresses an audience of semioticians, he will look for validation of the theoretical angle from peers. However, when addressing designers, theory and objectivity are merely assurances of the "scientific" value of the analyst's expertise and reveal nothing about the concrete viability of the artefact as distinct from theoretical discourse. This viability depends on the ability of the analyst to be an average representative of real users: if this is the case, the analysis is viable. If not, the analysis cannot be proved in practice.

Another major bias concerns the actual object being studied, more specifically the material studied by the analyst. Is the material made up of components of the artefact and their organisation or is it only a representation that the analyst makes of the organisation? An analyst who doesn't investigate the way an artefact was produced and who is then restricted to only studying the final, physical version of the process of production can only generate a study of "theory of mind"[29] which the analyst will, rightly or wrongly, attribute to the designer. Again, whilst claiming to study an artefact from the inside, it merely becomes a study of the analysts's own representations of the artefact and projections on the intentions and decisions of the designer.

There is another problem along the same lines which relates to the process of elaborating meaning. We can ask ourselves whether, in the eyes of a typical user, the meaning of an artefact is produced from the lowest level of its components or whether it is merely an illusion of depth that will strike the reductionist analyst? The process of decomposition by analysis is warranted if, in its basic components, the artefact is affordant, factitive or performing. If, however, the artefact acts on the upper level of its *qualia* and relevant aspects, then this process of de-composition serves no purpose. Pragmatic micro-semiotics support this thesis as it shows that meaning is developed in only those aspects of the artefact that are relevant to action and interaction.

When the analysis approaches deeper levels, this is only relevant to the designer (and analyst) and irrelevant to the user whose habits will make cognitive and practical awareness of this unnecessary. Yet, a designer's skill amounts to combining basic components in such a way that they act directly on the level that is most pertinent to the user. Such projective studies of deeper levels – which claim to be universal – are largely responsible for the partial or complete failure of semiotic analyses of artefacts.

By claiming to be something they are not and choosing the wrong processes and aims, analyses like this have confused relations between communities of semioticians and designers. In fact, the pretext of objectivity really amounts to epistemological and practical bias as it suggests that the findings of an analysis are "universal" and that the signifying processes applied by the analyst correspond to the interpretive processes of the real user and their predisposition to take action.

The consequences of these theoretical, methodological and pragmatic errors have resulted in distortions between expectations of practical usage as set by semioticians and real-life user experience. Pragmatic semiotics, however, is not subject to the bias outlined above due to its interactionist, constructivist and pluralist principles. A semiotician's role is to reflexively integrate his own mediation in the process of interaction between the artefact and potential or actual users of which he is also one.

In order to do this, the study has to be clearly situated and specifically focused on one or more experiences of interaction between identified agents and an artefact that is linked to its own network of actors. In any case, it is experience, interaction and their real (or declared) effects that are under investigation.

Agents of interaction can be habitual users, subjects won over by doubt or primary users. In the first case we study the well-established beliefs and habits, in the second we study the habits of the user in their deconstruction and in the third case, the beliefs and habits are examined in their process of formation.

Once semioticians are well-integrated into the process of design and production of artefacts, they can also go on to study the interaction experience between the designer and the object in the process of being made. In a case like this, the analysis is integrated into the creative process and becomes action research.

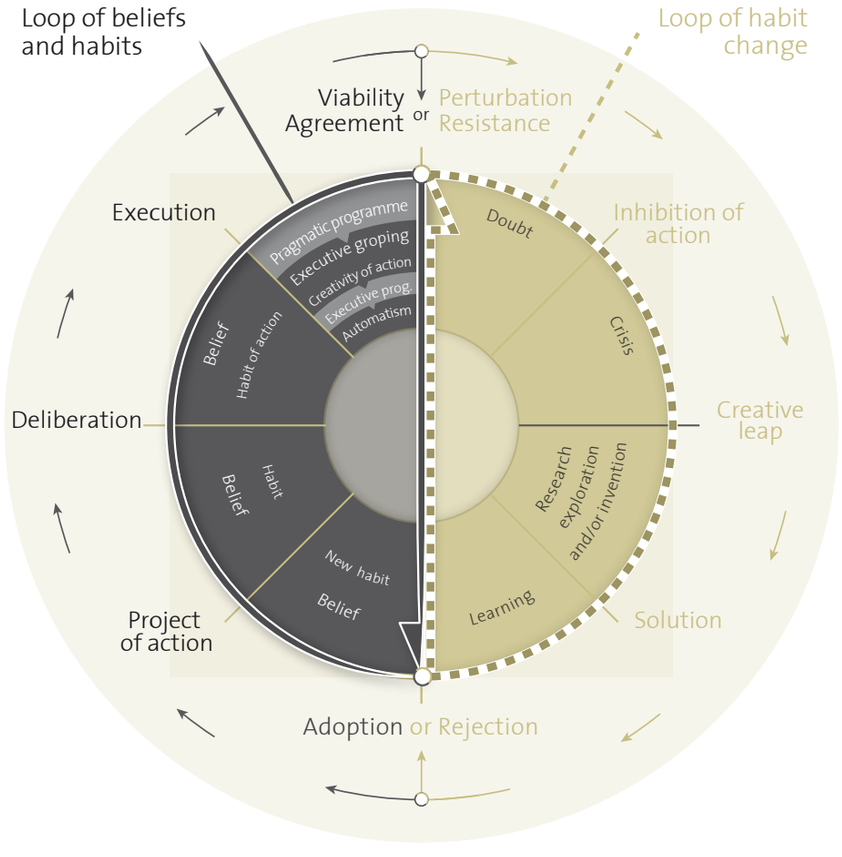
According to our state of knowledge, this is the best way of applying semiotics to design.

TRANSLATION FROM FRENCH
Alison Cullen-Plitt

[29] The "theory of mind" is the ability to attribute mental states, such as intent, feelings, knowledge, to others. Empathy is a related concept.

Cycle of habits and habit change after C.S. Peirce.

B. Darras



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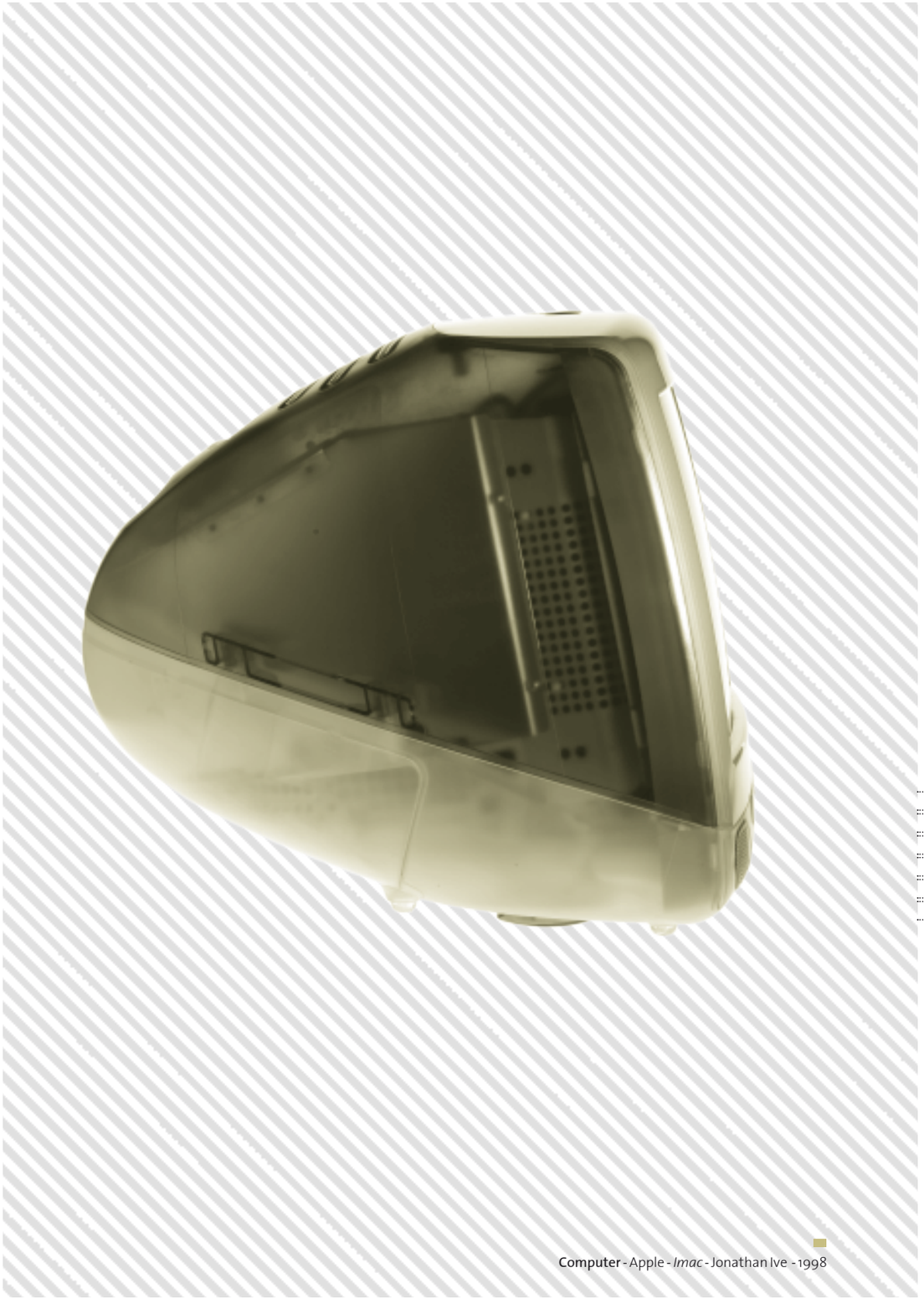

Computer - Apple - *Imac* - Jonathan Ive - 1998

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Towards a Semiotics of Controls and Commands

ALESSANDRO ZINNA

Abstract

What is the difference between controls and commands in an electromechanical appliance and an electronic interface? This study proposes some observations about a semiotics of controls and commands by way of a comparison between the startup systems of a PC and a Mac at the end of the 1980s.

Towards a Semiotics of Controls and Commands[1]

ALESSANDRO ZINNA

Premise

The present study is a historical and theoretical contribution to the development of a *semiotics of controls and commands*[2]. Within the context of the morphological evolution of objects, it is easy to show that the introduction of controls marks the transition of *tools* to *machines*. This transformation is a vital step in the evolution of the *interface* of objects.

This evolution lends a more complex morphology to the object as a whole. Any reflection on the subject of controls has to therefore provide a description of the signification and of the predisposed functions for the use of any mechanical, electrical or electronic device. This is in order to indicate the conditions of usage to the user in order to create the construction of a cognitive schema of the overall functioning of the object. From the perspective of signification, the identification of controls is entrusted to the *shape* and/or *colour* that are meant to produce *plastic discontinuities* in the design of the machine's surface in the form of the various buttons, levers, wheels or other devices that create a link between these external features and the mechanical discontinuities that are most often located inside the object. And yet their structure of meaning becomes particularly striking when the material controls are substituted with immaterial commands. This marks a second historical moment when *mechanical machines give* way to *electromechanical machines* or *electronic* devices. At this point, not only does what used to be a control no longer have a direct relationship with the machinery, but now the latter have turned into electronic circuits deprived of all mechanical causality[3].

In order to show in which direction the system of signification of tactile controls has evolved in recent years, we propose a study of the computer as it was presented to users at the end of the 1980s. This moment in the history of computers has not been selected at random, it marks the transition from *command line interfaces* to *graphical user interfaces*. In this article, we will confine our analysis to a comparison of the startup systems of IBM-Microsoft and Apple-Mac computers, the aim of this analysis being to show how hardware controls have evolved into software commands. New communication requirements that arise from the use of a graphical user interface will also be highlighted.

1. On/Off function

A computer is the result of the collaboration of *a dual system of interfaces*: the hardware and the software. From the point of view of their external interface – which consists of physical intervention points such as the keyboard, mouse, joystick and other input devices – computers have undergone no remarkable change.

1.1 A bit of history

Computers have an On/Off function, just like other electrical appliances. This is the first and most general function of any electromechanical device: activating the object's circuits by connecting it to the power supply. The power button generally performs a double function and serves to turn the appliance *on* and *off*. These are almost universally two reversible positions (it would be hard to find an appliance that was turned on by pressing a button and turned off by pulling out the plug).

We will start by looking at the semiotic form of the 'On' and 'Off' function in hardware interfaces of the most popular computers. Like other electrical appliances, the computer is equipped with specific buttons that perform these functions. However, there are differences between turning on a PC and a Mac. To turn on a computer in the 1980s, two different buttons had to be pressed, one to start the screen, another for the base. However, for the Mac at the same time, pressing on a single button located on the keyboard was sufficient to turn it on. Apple connected the screen to the base so that both could be switched on simultaneously *(Fig. 1)*.

Fig. 1
(The Apple II keyboard)

This is an important detail as it already reveals the beginning of Apple's philosophy. As we will see in more detail later on, differences between operating systems are already evident in the concept of the hardware interface.

In order to understand the differences in the projects, we have to closely examine the type of action required to switch both systems on. Turning on a computer with a button positioned in the lower part of the base and/or screen – as was often the case for a PC – requires an operation that we call *localisation of the control*. This is no longer entrusted to your sight, but delegated to *tactile* experience. In order to turn his PC on, the user had to reach the button located at the back of the machine and after feeling around for a few seconds in order to find it, could finally perform the first operation. Mostly, turning on the screen involved a similar procedure wherever the screen button was also housed in the rear part. In addition, users sometimes felt frustrated to find that they had failed to follow the correct order of switching on screen and base. Apple engineers, however, chose to locate the On/Off button directly on the keyboard[4]. This gave Macintosh users another advantage: seeing as the button was on the keyboard, it meant that they were immediately able to perform the activity that followed switching the computer on.

1.2 Apple's design principles

Apple's engineers were guided by three principles: 1) *economy of movement* at startup; 2) the *intervention point's visibility* and its *proximity;* and 3) the *unicity* between the switch on the computer and the startup function. Why didn't IBM's engineers have the same idea?

A possible answer is that situating an On/Off switch on the keyboard – in an area of permanent access and tactile activity – could have led the user to commit the fatal error of touching it in passing, even by accident, and risking turning the computer off in the middle of an ongoing operation. The reasoning behind the IBM engineers' approach seems quite logical: *the principle of error prevention* made them decide against putting the On/Off switch on the keyboard. Ultimately, this principal prevailed over economy of movement and of visual identification of the intervention point. In fact they probably intentionally chose a more distant position in order to ensure that the machine could only be turned off *voluntarily*. This explanation is irrefutable and makes Apple's engineers seem rather reckless for placing the On/Off button directly next to others on the keyboard.

But anyone who is familiar with a Macintosh, even someone who only uses one occasionally, knows that there is an asymmetry between the operation of turning on the machine and turning it off. The On button is indeed on the keyboard, but it is not by pressing this button that the computer can be turned off. This function is only accessible via the software interface. So, their answer at the time was to change the conventional relationship of the start button where the /up/ position indicates 'on' and the /down/ position indicates 'off'. Later on, we will see the advantages of this new semiosis. For now, we will just note the inconvenience involved in getting rid of code that was easily memorised because it corresponded to a widespread codification, by noticing that this choice goes against this semi-symbolic encoding: at least in terms of expression, the heterogeneity of controls, whether hardware and software, cannot be confined to one sole category. However, with just one button – following the principle of *economy of intervention points* – the device merges the two components affected (screen and base) without risking any confusion in the order of execution. In IBM's choice, the *principle of affordance* – specifically, that of error prevention – is attained at the expense of principles 1), 2) and 3). Apple maintained these principles without compromising the principle of affordance, which instead was reinforced by these choices. The key on the Apple keyboard is deactivated whilst the machine is in use and should it be pressed – accidentally or voluntarily – this will

[1] A previous version of this article was published in Deni (ed. 2002) under the title 'Avez-vous dit "allumer l'ordinateur?"'.
[2] Translator's Note: The French word "commande" used in the original text can mean both machine control and computer command.
[3] On the same topic, see 'À quel point en sommes-nous avec la sémiotique de l'objet ?' Darras, B. & Belkhamsa, S. (eds.) 2009.
[4] As observed by Gui Bonsiepe (1993), software should be considered an immaterial tool for action.

have no consequence. Whereas, even though the on switch of a PC is difficult to reach, it remains active and if it is accidentally touched could turn off the machine. Whilst this is unlikely, it remains a possibility – as Murphy said, if human error is permitted by the system, then the error is bound to happen at some point. Ultimately, this means that the affordance obtained by the *non-operability* of the intervention point is more efficient than that entailed by the immediate *non-accessibility* of its position.

Apple's choice in this case is a real gamble: as an innovation in encoding, it goes against the principles of acquired skills. This seems obvious when a PC user goes to turn off a Mac and finds himself completely disorientated away from a form of encoding that is almost universal. Apple therefore introduced an innovation that changed the encoded meaning of the power system of an electrical appliance where one button (the same intervention point) performs two distinct and opposite functions, depending on the position /up/ v /down/ as construction of an *expression of controls*.

1.3 Apple's startup chime

We should also note that pressing the On button produces *feedback* that allows us to establish whether or not the action has really been accomplished.

The 'click' produced by pressing the mechanical button of an electrical appliance, or a computer, is an audible feedback by which we construe that the action has been carried out. This meaning is so deeply encoded that without this noise, we doubt that the action has been performed correctly. Apple's startup system has a feedback sound that is not produced by the mechanical contact with the button (pressing on the button itself) but by the software. When starting up the Mac, a characteristic sound can be heard which, for years, was a distinctive mark deeply associated with the use of the machine. This is a musical noise – which, over time, has become exchangeable with other options – that, whilst evoking the mechanical 'click', gives it the harmonic characteristics of a chord. Replacing the click with such a sound considerably enhanced the *feedback principle* in several respects. If we consider the turning on of the computer as the result of electrical current running through the circuits of the machine, then the mechanical noise produced by the button only indicates that the button has been pressed, but not that the machine is actually turned on. In fact, the 'click' can be produced even when the plug connecting the machine to the mains supply has been pulled out. However, in a system where the sound is produced by the software, if the electric current doesn't reach the machine, the chord cannot be heard. The feedback idea is certainly better because it provides a more accurate status of the machine.

1.4 The 'Off' function

On a Mac, the 'Off' function is more complex[5]. Indeed, this feature was made available only via the software, in particular by the intermediary of the mouse that selects and executes the command /Shut down/ within the menu /Special/.

As we know, the *cognitive schema* of a graphical user interface (GUI) is based on the metaphor of a desktop[6]. In order to access this function, the System icon had to be selected by clicking with the mouse in the top right corner of the screen. The intervention point of the /Shut down/ command isn't directly visible or accessible. The commands that appear in this menu are in actual fact groups of commands that open by pressing on the name or icon of each group. Situated in the tool bar, these groups are partly *iconic* (Apple, Finder icon, icon showing the selected keyboard) and partly *symbolic* (File, Edit, View, Window, Special, Help). Whilst the first type are variable depending on the preferences of the user, the symbolic commands are constants of the operating system.

[5] Here we are looking at models from the end of the 1980s: Macintosh FX and the following ones.

[6] Command names between vertical bars (|) refer to the *praxeology* required to execute the commands. Command names enclosed in forward slashes (/) represent the commands' intervention points, and command names between single quotes (') stand for their semantic *functions*.

Fig. 2
(Mac OS 9.1 desktop)

The /Shut down/ command is in the Special submenu. To access this function, the menu has to be selected and kept open by clicking once then keeping the mouse button pressed down[7]. This operation shows the commands and software that are available. The /Shut down/ command is located at the bottom of this group. Already, we can see that the position chosen by the engineers is not easily accessible. In order to select this command, the mouse pointer has to run down all the other commands that make up the Special menu *(Fig. 3)*.

Fig. 3
(Dropdown menu /Special/ in Mac OS 8)

To accomplish this function, the pointer has to be guided through the menu, whilst ensuring that it doesn't leave the graphical area. When the pointer passes over each command, a change occurs in that each command undergoes a colour inversion, turning white on a black background; however, the greyed-out commands (non-available) remain the same and do not undergo a visual change *(Fig. 4)*.

Fig. 4
(Inverted colour of the command /Shut down/)

Whilst still maintaining the mouse button |pressed down|, once the /Shut down/ command has been reached, it is selected and the finger is removed from the mouse, the written command name flashes once or several times again applying a colour inversion, and the 'Shut down' function is complete.

2. Semiotic of commands

In this simple 'Shut down' function there is extraordinary complexity of communication. Above all, we should note that compared to the *static* meaning of objects, communication of electronic scripts is *dynamic* as it constantly returns feedback of the action. This is according to the principle that any action causes a *retroaction* that communicates the status of the system at any stage of the process.

2.1 Semi-symbolic semiosis of the interface

By comparing the two possibilities of hardware and software design, we find several shared principles (for example difficulty of access and the non-visibility of the intervention point), but also many differences. The comparison between the same function as performed via hardware or software showed us that the interface does not only communicate its functions, but also whether the functions are 'possible' or 'impossible' at a given stage in the usage procedure. The contrast between /grey/ v /*black*/ leads to communication on the mode of existence of the command. In order to communicate its state, Apple's engineers produced a semi-symbolic encod-

[7] The role of these metaphors is central to the project of simplification of use, see Zinna, 2001.

ing that follows the following pattern:

Expression (colour)	*grey*	*Black*
Content (function)	*impossible*	*possible*

When the dropdown menu is opened, the *greyed-out* commands indicate those commands that are *potentially available*, but inactive at that point in the process: with regard to the chosen element, they cannot be selected. On the other hand, the black commands form the number of paradigmatic choices that can be made for the selected element – they are *virtually possible*. Change by inversion is the way the graphical system tells us a different command status, that of an *actualisation* by selection: this means that it is ready to be used. Finally, the /Shut down/ command that flashes with a double colour inversion gives real feedback of the function's *execution*.

If we try to reconstruct aspects of the communication of Apple's command system, we obtain the following semiotic relationships:

Expression: colour effects	*Content*: modes of existence
/grey/	*Potential*
/black/	*Virtual*
/inversion white on black/	*Actual*
/double inversion black-white/	*Realised*

Fig. 5
(Colour effects and modes of existence)

It is clear from this that we have moved from communication of function to communication of the *status* of the function which shows a real gap between the communication of hardware and software interfaces. We can conclude that the semi-symbolic system is *meaning* structure that denotes the *mode of existence* of a *command*.[8]

2.2 The semi-symbolic semiosis of the intervention point and the mode of existence

Looking more generally at the communication of an interface, the most important distinction is the one between the *communication of the intervention point* on the one hand *and the communication of the mode of existence* of the intervention point on the other.

The correlation of the two encoding systems can be depicted as a more general schema. This semi-symbolic pattern underlying the communication of verbal commands of the Apple interface is identifiable in the correlation of these categories:

Such a correlation can be used to create other command devices adopting the same consistency

Expression	colour	form
Content	*mode of existence*	*intervention point*

in the meaning of the intervention point and its mode of existence. It has to be said, however, that this criterion, which could introduce consistency in the subsequent generation of communication systems of verbal commands, has not been maintained in encoding other commands of the Apple interface.

We can conclude this study by considering the structure of a semi-symbolic system of signification. We observed that the encoding of certain systems of signification (by symbols or icons) can have a more general underlying logic than the specific system, hence this logic can be applied to other parts of the interfaces which require a distinction between the communication of the intervention point and that of the mode of existence. This coding appears as a true principle of optimisation of interface communication systems. It helps structure meaning as a system and, above all, as an abstraction it can become a schema that generates other structures of meaning.

[8] Starting with Mac OS 8, the dropdown menu stayed open when double-clicked. In this, Apples's Mac OS followed the development of Microsoft Windows.

3.The Apple philosophy

The draft operating system created by Apple became a pilot for other systems, especially for applications that were created by third parties[9]. The commercial success of the computer thus coincides with the construction of an interface that complies with certain principles of 'good design'.

The first generations of software with command line interface contained a mass of *functions*, constantly added to by engineers with no consideration for the way these functions were *communicated*. The thing that attracted the general public to computers was the attention paid by manufacturers such as Apple to simplifying the process of usage. This simplification of the communication of commands by graphical means was obtained by first making it more complex: the effect of simplicity assuming additional calculation that aims to establish intense interactivity of communication regarding the status of commands[10]. But, ultimately, the key to this success lies in the new semiotic awareness that leads *command line interfaces* to *graphical user interfaces*.

3.1 The new syntactic order of commands

Seeing as computers were no longer devised to be used by experts in computer science, more effort had to be put into a) helping people understand the functions, b) the cognitive schema and c) the sequence of actions required for usage of such a complex machine.

According to Jef Raskin[11], who worked on the Macintosh project, there is a significant difference between the order of commands in the CLIs and the GUIs. This difference lies primarily in the order of the syntactical sequence. In the old DOS, the action to be accomplished first had to be written, followed by an indication of the objects onto which the action should be applied, thereby following the model *Verb Phrase* => *Noun Phrase* (e.g. COPY: A/B). With the modality of graphical commands, the reverse syntactic construction was adopted: first, the element was selected *(Noun Phrase)* then the system presented a list of *Verb Phrases* available for the selected element at this time.

In the same way as other objects that surround us – and that are meant to simplify our domestic lives – the computer is subject to what Donald Norman (who also worked on the Macintosh project) called 'the psychopathology of everyday objects'. This, in other words, was what the author of *The Psychology of Everyday* Things describes as the ability, or inability, to make simple and less simple things in our daily lives work. He believes that an object built according to the principles of good design should not require an instruction manual. The design of an object has in part failed if diagrams, legends or instructions are necessary. Apple's development of graphical user interfaces followed this principle very closely. Where once user manuals had contained several hundred pages – even explaining how to use italic text formatting – it was now immediately possible to see which operation was required to perform the function.

Therefore, whereas *a list of DOS commands filled hundreds of pages that had to be looked up or learnt by heart, displaying the commands, whose availability depends on the type of element selected and is communicated at any time, is an excellent criterion of economy either of memory or of movement – the finding out about a command.* By a strategy that was similar to the visibility of commands, from then on the user had no need to read or consult the instruction manual.

3.2 The philosophy of the project

From these observations, we can provide some conclusions about the philosophy of the DOS-PC and Apple-Macintosh projects.

The PC of the 1980s still had an elitist idea of its user. One look at the startup system is enough to tell us that it was meant as a solemn moment marking the beginning of the computational experience. The DOS system favours *skill in carrying out functions* over *communication of those functions*. Apple asked itself the opposite question: how can a user *acquire* the *skill* through *practical usage*. Their focus was above all communicative and their approach akin to learning through play. The aim was to provide computer access to a large number of people without them having any prior knowledge or skills in that area. Seeing as this was in the early

[9] A short history of operating interfaces can be found in the chapter 'Interface', cf. Wooley, 1992.
[10] I suggested distinguishing between interactivity of communication and interactivity of exploration; cf. Zinna, 2004.
[11] See Raskin, 2000.

80s, it was a real gamble, one who's aim was to develop a regular computer user who didn't end up loathing the engineer in charge of the project.

Apple bet on both the evolution of the industrial logic of the computer as a mass product and the development of a society of computer consumers. In order to carry this out, they had to go beyond skills of elitist and technical know-how to access knowledge acquired through practice and usage. Paradoxically, Apple has, over the years, become rather an elitist identity choice, but this has not prevented the company from popularising the GUI project from a commercial perspective. From a different market position, Microsoft's Windows system has contributed to the spread of what Apple produced as a result of their research.

From the outset, Apple's engineers mastered the future evolution of man-machine interactions: the direction indicated by our simple comparative study of the different startup systems demonstrates that the proposed interface was aimed at a non-specialist user profile. It also shows that the dematerialisation of functions had already become a reality: all hardware functions, including starting up the machine, could now be carried out via the software interface.

4. Looking ahead to the future

The development of the typology of man-machine interfaces could well take a different direction as far as *touch* commands are concerned. From the outset of our relationships with technical objects, these have been largely dominant as per the physical mode described as *having hold*[12]. This is true whether in the case of the physical handling of a power switch or of the immaterial handling of icons as objects simulated on the surface of a screen.

This relationship between body and machine moves gradually towards contact that is completely devoid of corporality. The use of voice commands shows that our approach to objects is giving way to automata that respond to spoken orders as well as responding to automatic devices that register our presence and act accordingly. This is without doubt the first step towards the loss of physical contact that, over time, has fashioned and increased gestural richness with regard to our manual relationship to a variety of objects that required different approaches in their manipulation. It is likely that the emergence of commands that have no physical connection will only be the first stage in a much more radical change in our relationship to objects.

The *interfaces* we have known up to now could be termed *exteroceptive* as they involve an *expressive movement of the body itself*: touch where graphics interfaces are concerned, haptic gestures in the case of interfaces that respond to bodily movements and finally, the articulation of sounds for voice commands. The creation of brain scanning devices allows us to register an additional modality of commands. Interfaces that are capable of triggering the action of a machine or other machine by reading mental activity could be categorised as *interoceptive*. Devices such as these, that have already passed the test phase, would certainly allow commands to be carried out more quickly, but their development could have wider implications for people in their daily lives, e.g. as an aid to the severely handicapped – unable to use their body's expressivity to perform exteroceptive commands – in helping them gain autonomy.

TRANSLATED FROM FRENCH BY
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[12] See Landowski, 2009, for a detailed discussion on "avoir prise" – having hold.

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Coffee Maker - Atomic - 1947

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Human-centered Design; A Cultural Necessity

Abstract

This paper draws on a recently published history of paradigmatic design problems. It argues that we are in transition from a culture that was dominated by science (modernism) and the belief in the goodness of technology, to a culture that, while ushered by information technologies, recognizes design as a human virtue and as its primary organizing feature (constructivism). To this end, it offers several propositions of an epistemologically informed and, hence, human-centered approach to design[1]. It culminates in a sketch of what design education should and can contribute to this new culture.

1 Human-centeredness has been elaborated since this essay was originally written, culminating in a book *The Semantic Turn, A New Foundation for Design* (Krippendorff, 2006). The latter concludes with a proposal for a science for design, presenting the philosophical foundation of human-centeredness, four theories of meaning of artifacts, aims of human-centered design research, design methods, and evaluative techniques. This essay emphasizes design education as part of the paradigm shift we observe.

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Human-centered Design; A Cultural Necessity

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A Trajectory of Artificiality

Recently, Philip Agre (2000) elaborated on the new space for design. He observed that design is no longer limited to professionals, that technology has evolved to a point at which design has become a way of life, that the old thinking of design as the creation of gadgets has given way to thinking of design as socially embedded. Indeed, after a century of struggle among competing design/art schools, design has now been sent on an irreversible trajectory of design problems (Krippendorff, 1997), a supercession of paradigms or guiding exemplars. Consider the steps we have taken or are in the process of moving through:

1. *Products*—during the industrial era
2. *Goods, information, and identities*—since the beginning of consumerism, (the 50s)
3. *Interfaces*—since the personal computer, (the 70s or 80s)
4. *Multi-user networks*—since the WWW, (the 90s)
5. *Projects*—in management since WWII, but in design only recently
6. *Discourses*— in philosophy since Wittgenstein (1953), Rorty (1989), in design see Krippendorff (1995).

This trajectory manifests a gradual increase of human/social considerations and amounts to a radical departure from a scientific culture to what we might call a design culture. I am contending that characterizing our society as in transition to an information society is a bit too simple. Let me try to formulate some principles that emerged as this trajectory is unfolding.

Some Principles of Human-centered Design

The paradigm of designing functional *products* for mass-production, an outgrowth of industrialization, died with Ulm, but stayed within engineering with its concern for production and functional use.

Human-centeredness arose in the first paradigm shift in the above trajectory, from products to *goods, information, identities*, appearances, fashions, brands, etc. Functional products were intended as supportive parts of larger technological complexes. Goods, on the other hand, reside in their passing through markets, information in the reading of texts or images, identities in how people see themselves and each other through their artifacts, etc. It dawned on the designers of such intangibles that their products were social practices, symbols, and preferences, not things, and that they had to be designed for buyers, consumers or audiences, not for "rational" users. The lesson learned from this shift is that:

We do not respond to the physical qualities of things, but to what they mean to us.

This epistemological axiom distinguishes clearly between human-centered design, a concern for how we see, interpret and live with artifacts; and object-centered design, which ignores human qualities in favor of objective criteria (e.g. functionality, costs, effort, durability, ergonomics, even aesthetics when informed by theory). Object-centeredness favors design criteria that are generalizable and measurable without human involvement. It is particularly insensitive to cultural and individual variations. The axiom also distinguishes between design and engineering. In design, I suggest, meaning is central. In engineering it has no place. Finally, this axiom has been fundamental to product semantics (Krippendorff, 1989). Object-centered design was the child of the industrial era, mass production, the profits of expanding market, which was supported by renaissance notions of science.

Personal computing ushered in the next paradigm: *interfaces*. Language-likeness, interactivity, submersion experiences, and self-instructability made interfaces no longer explainable in psychological, ergonomic and semiotic terms and rendered the language of functionalism, consumer preferences and aesthetic appeals obsolete. Interfaces are processes and they dissolved artifacts into interaction sequences. Since the 70s and 80s, interfaces have provided design with a totally new focus. Product semantics offers dynamic accounts of how individuals cope with artifacts -- not only computational ones (Krippendorff, 1990). It taught us that the tangible nature of artifacts is insignificant compared to the fact that:

Artifacts happen within sensory motor coordinations.
Designing artifacts amounts to designing the possibility for certain interfaces to arise.

So, artifacts do not exist outside human involvement. They are constructed, cognized and re-cognized during use by people with their own objectives. Agre (2000) observed much the same when he claims "We can best see what a thing is when it's changing,"—I would add when we can make it change in line with our practices of living—to which he adds: "and now everything is changing."

Undoubtedly, languaging is our most important form of coordination. We create and coordinate our perceptual world in speaking with one another. We construct technology in conversations. Design cannot succeed without communication among designers and with stakeholders or users. Hence:

Coordinations acquire social significance in narratives and dialogue.
Artifacts are languaged into being.

Interfaces have many revolutionary aspects. Reconfigurability, for example -- one of its outstanding features -- grants users the ability of (re)designing their own world. Designing (re) design(ability) into artifacts alters the role designers are able to play within a culture that embraces this technology. Redesignability propagates design practices beyond the confines of professional designers. It delegates design to non-designers, saving the designer the trouble of working out details but also making users part of the process by which technologies are created. This blurs the boundaries, not only between producers and users, but, more importantly for us, between designers and those for whom a design is intended:

Inscribing (re)design(ability) into technology amplifies design.
It brings forth a culture that increasingly understands itself as co-constructable and design-driven.

Looking back where design comes from, the industrial era was governed by the belief in the necessary goodness of technological progress. Users felt the need to adapt to the products made available by industry and its designers -- not realizing that this belief served the needs of industry: economic efficiency, market expansions, and cultural control. Technological progress had no place for ecology. Designers were rewarded to serve these needs and eagerly embraced this ideology at the expense of users' ability to participate -- except as reactive consumers who occasionally resisted that "progress." But, as Agre (2000) observes, people resist only imposed changes. They are happy to change their lives but mainly in their own terms. The opportunity to design, to play with possibilities, and to invent rules rather than follow those of others, *enables* users to realize themselves. (Re)design(ability) turns out to be the most important intrinsic motivation for people to engage in particular interfaces. I claim that:

Design is intrinsically motivating.
It constitutes being human. It is not exclusive to a profession

Designing redesignability into technology erodes the strategic position that designers acquired during the industrial era. Designers no longer are in charge of what happens to their ideas. Contemporary designers can do nothing better than being a step ahead of everyone else. This shifts the focus of design from products, goods, and services to ways of interfacing with them, from improving technology to supporting more desirable social practices. This also entails a shift in how we regard the people on whose behalf we work, from consumers with needs that could be created or manipulated to stakeholders with own interests, information, and political resources to use for or against a design. Product semantics has conceptualized this new kind of understanding.

The understanding needed to design for and with stakeholders is an understanding, not only of the technology involved but primarily what technology means to them, how others understand what designers have good reasons to understand rather differently. Understanding others' understanding -- with respect for the difference to one's

own understanding -- is an understanding of understanding or a secondary understanding and as such qualitatively different from a first-order understanding of things that cannot understand. In this new environment

Professional design entails a second-order understanding of the ability of Others to design their own worlds

Technology enabled (re)design(ability) on the one hand, and second-order understanding on thew other hand, are the pillars of *multi-user networks*, my forth paradigm. Such networks entail a loose cooperation in which participants construct their own worlds while in contact with one another. All viable multi-user networks require a minimum number of participants. What happens within them cannot, however, be controlled from their outside. Chat-rooms, MUDs, news groups and various "collaboratoria" either organize themselves or cease to exist. They are designed by many, including hackers, Internet buffs, computer programmers with crazy ideas, people at the edge of technology, but also commercial businesses, each entering their own conceptions of community into the network. They do not need to share a common goal or vision.

Technologies either fuel and amplify communities or fail altogether.

Putting communities rather than individual users into the center of design considerations opens the door to a wholly different room. In the long run, technologies that discourage cooperation among users are overcome by those that do. Technologies that provide mere technological solutions of social problems can be identified as the cause of instabilities. But technologies that expand community invite new forms of living and evolve in the process.

Unlike networks, *projects,* my sixth paradigm, are guided by shared visions—putting humans on the moon, redesigning the US healthcare system, developing a Ph.D. program in design, even pursuing the idea of a pollution free car. Project designers plant seeds, but cannot control what emerges from them. In retrospect, we might say that design has always been a project. In the industrial era confined to industry, design now is political. In fact, no design has ever been realized without others' cooperation. As a project, it is paramount that

Design can succeed only when it inspires and sustains sufficiently large networks of stakeholders.

Engineering creates instructions (drawings). Human-centered design has to be inspiring.

Thus far, our trajectory has guided us to *a design culture, one that recognizes its reality as made rather than found*. It realizes its own variability, reflects upon its possible forms of living, and understands itself as redesignable. The modernist notion of a science-based culture has given way to a culture in which design is no longer a privilege but has penetrated nearly every area of social life. Each paradigm shift en route to this design culture now seems so obvious that one wonders why we couldn't see design that way before.

Let me now address the issue of a *design discourse*, the last frontier of design along my trajectory.

Design Discourse and Educational Challenges

Discourse starts with talk but talk should not be dismissed as idle. Design discourse is the kind of talk that improves our future practices of living within the material world. In language we decide what a designer is. In language we negotiate and accept assignments and narrate the futures in which our proposals are to become real. In language we organize design teams, we argue for our ideas, and inspire stakeholders to form networks that carry them to fruition. Design education is to a significant extent teaching, discussing, arguing, testing, and evaluating. And this very conference, if something comes of it, it is brought forth in the presentation of papers, in the discussing of ideas and in the conversations that follow the conference.

Yet, I dare say that we are generally unaware of the way we language artifacts into being and create the many worlds we face in the future. I like to distinguish between speaking a language and being spoken by a language. This is a crucial distinction. A language is speaking us when we speak *about* things without realizing that it is the speaking that matters. Design education is the site where students of design learn a designerly way of speaking and thinking. But design magazines, lectures on design, studio critiques, awards for good design. Even advertising something as a design, is not only about designed objects, it also shifts, adds to, or subtracts from what design is in our culture.

My aim here is nothing less than invoking a shift from being spoken by a language to deliberately speaking it, from talking in a designerly way to designing a design discourse capable of creating what we whish design to be, from practicing design to redesigning design so as to engage in better practices of design.

Design-educational institutions, especially at universities, have the opportunities, I would say the obligation, to go beyond teaching design practices and conceptualizations of the culture in which their results are expected to function. Design education should moreover reflect on the state of design and inquire into the linguistic practices of designers, in view of the role designers need to play within the very world they intend to change. I take the above observations on our increasingly human-centered design culture for granted when I am suggesting: For design to survive as a profession, it must apply its design principles not only to the material world but also to its own practices, to its own discourse. Thus:

Design must continuously redesign its own discourse and its profession.

This is today's challenge for design education. What does this mean in particular? Let me offer six areas in need of development.

First, design cannot be concerned with what worked in the past. Scientific research, after all, is re-search, searching presently available records of the past again and again to extract patterns that are unchanging and can be generalized into the future. Designers, by contrast search for variables, for possibilities to alter the world as we know it today, to invent futures and make them possible, starting by means presently available. This requires an epistemology that is incommensurate with that of science (as descriptive of what existed and continues as such) (Simon, 1969). The most important aim of design education and is to enable students to systematically inquire into

• Ways of narrating imaginable forms of living.

Methods accomplishing this task are largely narrative. We know, futures are being articulated by poets, science-fiction writers, and dreamers. Designers may well be inspired by these. But to eventually realize these futures, designers have to learn to articulate possible futures in their own language.

Second, the difference between fiction writers and designers is that designers' fictions must be realizable, introduce changes in our worlds. While realizability can be proven only in retrospect, it can be claimed or argued. For designers it amounts to having compelling narratives of how the present could be transformed into desirable futures. Typically, such narratives must overcome prejudices that make certain thoughts unthinkable, or beliefs in the generality and continuity of history (historical determinism) that discourage explorations of newness. An important ability of designers therefore is to systematically search the present for the pivots of what is changeable, how to bypass prejudices, reframe natural laws, or explore knowledge gaps that afford actions. Design education must teach students

• The ability to reframe conceptions of the present so as to make the imaginable appear realizable[2].

Framing is the linguistic device of taking another look at a familiar situation. The use of metaphors is common to it. For long, design educators have talked of communication skills. The point is to render the path of a design realizable and worth taking to those who matter, especially when they are inclined to resist changes. Designers who cannot argue for the realizability of their ideas, who cannot rearticulate their proposals in their stakeholders' terms, or who cannot delegate their design for realization by others inevitably fail.

Third, not only does the above use of language implicate the conceptualizations of others,

2 More fully treated in Chapter 7 of Krippendorff (2006)

human-centered design moreover acknowledges that technologies live in stakeholder communities. Individual users or consumers, as envisioned in the first and second stage of my trajectory, are a myth of Western psychology and embodied in several disciplines, among them ergonomics and consumer statistics. Design is advocacy. Where people talk about it, it becomes political. It is most effective when embedded in the very communities that claim a stake in the future it realizes. Thus education in human-centered design needs to teach collaborative techniques of design, ways of involving stakeholders -- not just as subjects or informers but foremost as active participants. To accomplish this, design education has to teach

• A rhetoric that inspires networks of stakeholders large enough to move a design forward. Product semantics has already developed several techniques that assess understandability and design methods that are aimed at convincing stakeholders of the validity of semantic claims. Clearly, design is never better than the rhetorical strengths of its empirical tests, its cost-benefit analyses, and its endorsements by accepted authorities. We surely need to develop credible arguments in support of our claims, arguments that are as compelling as that of scientific evidence. However, the most significant aim of this rhetoric is to recruit needed stakeholders, encourage suitable organizational forms, and fuel continued involvement.

Fourth, I am taking design to be for and with people other than their designers. Human-centered design is complicated by the fact that people act on their own understanding. This contrasts sharply with the aim of engineering, research design, and other forms of inquiries that are concerned with objects incapable of understanding. Human-centered design does not presuppose that designers' understanding is better than that of other stakeholders -- engineers, sales people, ecological activists, users, profiteers, and victims. There are natural differences. Much like communicators and politicians, human-centered designers need to understand not just what they do but also how others perceive what they do. The need to conceptionalize stakeholders' conceptions (of design, technology, or still others), amounts to an understanding of understanding, a second-order understanding. Second-order understanding is fundamentally different from the first-order understanding we grew up with, which is at home in the natural sciences and well suited to the design of hardware, machines that do not understand, functional devices. In a culture that drives itself by design, design education must

• Generate second-order knowledge, that is, knowledge capable of embracing the knowledge of others, a perspective that accepts multiple perspectives as natural (and considers absolutes or objectivities as distortions). The ability of second-order understanding assures design its social relevance and opens the possibility of moral considerations rather than merely efficient ones.

Fifth, design is not rational, consensual, democratic, nor principled. It succeeds or fails in the very politics it generates. Particular designs may be inspired by someone's vision but they must prove themselves viable in various uses by others with potentially different visions. All designs -- shopping malls, golf courses, Internet businesses, restaurants, down to small kitchen appliances -- all require a minimum number of stakeholders to succeed, not the whole population. Also, most technologies develop in unintended ways, precisely because designers always are mere stakeholders in their own designs. No one is in charge of the always-emerging network of stakeholders. Whatever motivates a design, launching it is the most natural way to bring its virtues and morality or their opposites into view. Therefore, human-centered design education must encourage designers to suspend final judgements and question their own values, in fact any value system, in favor of the

• Collective virtue and morality that complex stakeholder networks can negotiate for they mostly exceed individual comprehension. This calls on designers to recognize the political nature of design, to participate in public deliberations on their design, to sense what is going on below the surface of behavior, and to be willing to delegate decisions best left to stakeholders -- redesignability again. In a design driven culture, ethical theories that aspire to generality become questionable. The wisdom embodied in stakeholder networks constitutes morally responsive feedback.

Sixth, designers often see themselves as interdisciplinary, suggesting to be without a home, or as integrators, signifying familiarity with a little bit of everything without own depth. Designers' betweenness and superficiality goes along with their frequent borrowing of fashionable concepts from the discourses of the more prestigious and profitable disciplines. Surely, there can be nothing wrong with looking over others' shoulders. But adopting the unexamined concepts of other disciplines often means unwittingly importing paradigms that undermine the discourse of design or surrender it to the discourses of the more established disciplines. Indeed, marketing, engineering, psychology, and art often claim design to be an inferior branch of their own discipline. The absence of strong Ph.D. education in design signals the lack of design identity as well.

By contrast, I am suggesting that taking the above mentioned axiom on the primacy of meaning seriously and working toward a human- as opposed to technology-centered approach to design offers design an unprecedented rhetorical strength and an identity that is distinct from that of all disciplines concerned with particular objects (biology with living systems, physics with material nature, psychology with human individuals, etc.). Human-centered design opens a huge space for designers to clarify their own practices, shed light on their own methods, sharpen their own language. It discourages moving aimlessly from one fashionable idea to another and being dragged in and out of technology-centered disciplines and getting lost in-between. It would be a mistake for design education to go the route of technology-centered disciplines, applying natural scientific knowledge, forgetting that what validates a design lies always in a presently unobserved future, not found but made by humans. I am suggesting, therefore, that design education acknowledges that design languages futures into being

• A critical and undisciplined discourse. Design has no fixed object but is concerned with the realization of desirable futures. It is less interested in precedence -- the object of scientific re-search -- but in what can be altered. With the focus on something not yet existing and, hence, not yet observable, design must develop a language, methodologies, practices that are capable of narrating imagined possibilities, justifying proposals for changing social practices, inspiring others to further its ideas, allowing the virtues of design to be decided by the collective wisdom of its stakeholders. Design needs a discourse that can question what other discourses claim impossible. And it must resist being "disciplined," distrust alien paradigms, and remain critical of unwarranted assumptions. To develop such a discourse and to build educational structures around it is an exciting project for us all.

In Conclusion

I am suggesting that our culture is in transition, not to an information society, as nearly everyone claims it is, mostly knowing only superficially what that means, but to one in which design practices are no longer controlled by a powerful industry but distributed widely. In this society design is a way of life. Hence, design must realize its human-centeredness and cultural contingencies. This realization has already opened heretofore unimaginable possibilities for design practices. Design education now has the opportunity to secure a new space for design into which other disciplines have not yet ventured, help design practitioners to realize the possibilities this paradigm shift opens up, and develop a rhetorical compelling design discourse.

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BIOGRAPHICAL NOTE

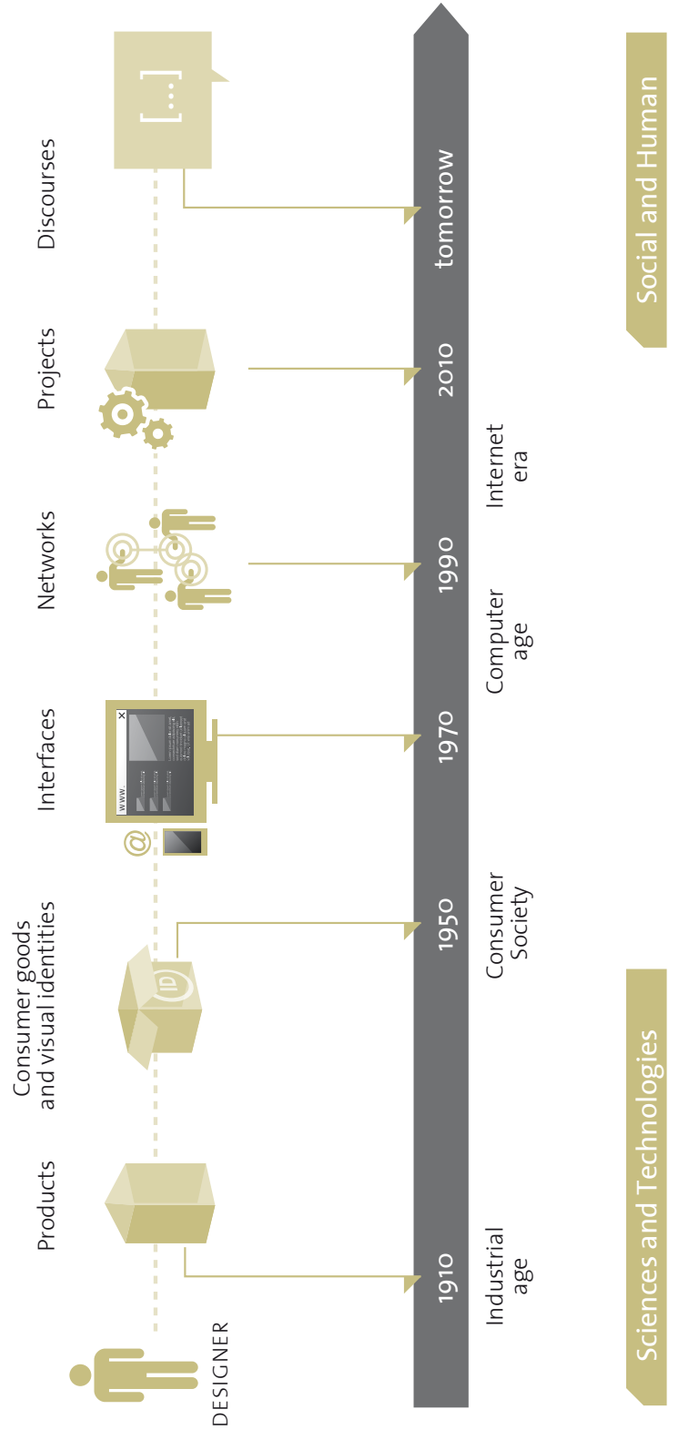
Klaus Krippendorff is Gregory Bateson Term Professor of Cybernetics, Language, and Culture at the University of Pennsylvania's Annenberg School for Communication. He graduated in design from the Hochschule für Gestaltung, Ulm, and holds a Ph.D. in Communication from the University of Illinois, Urbana. He is elected Fellow of AAAS, NIAS, ICA, and of the Society for the Science of Design (Japan). He is a former president of the International Communication Association (ICA) and chair of the council of the International Federation of Communication Associations.

He has authored: *Content Analysis; An Introduction to its Methodology* (translated into four languages, expanded to a 2nd edition; *Information Theory; A Dictionary of Cybernetics; On Communicating; Otherness, Meaning, and Information*. He edited *Communication and Control in Society*, co-edited *The Analysis of Communication Content; The Content Analysis Reader* and wrote numerous book chapters and journal articles, on communication theory, methodology in the social sciences, cybernetic epistemology, and critical studies (see www.asc.upenn.edu/usr/krippendorff).

He was one initiator of product semantics, but soon transformed it into a constructivist epistemology for design. He has consulted with industry on interface design, and lead workshops on this subject in the US, The Netherlands, Finland, India, Taiwan, Sweden and Japan. He edited *Design in the Age of Information* (NSF) and published *The Semantic Turn; A New Foundation for Design* and numerous articles on human-centered design.

K. Krippendorff

What designers design



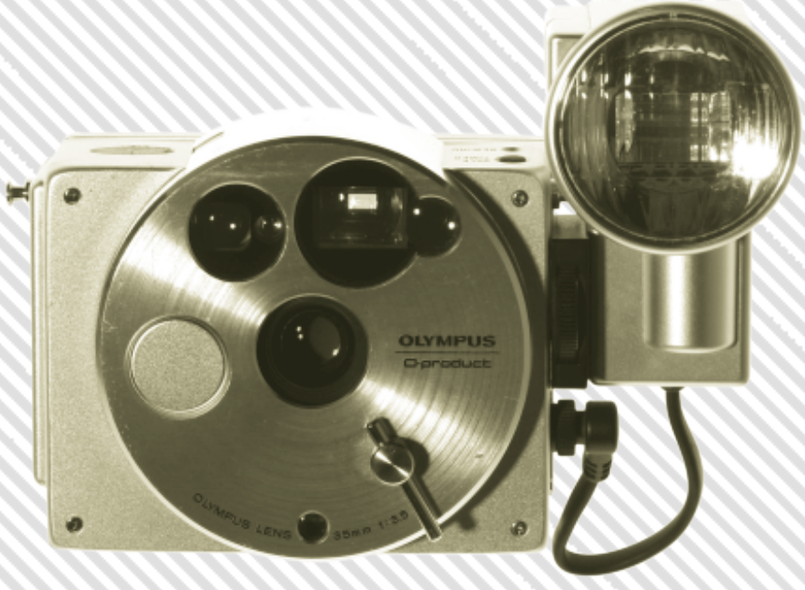


Photo Camera - Olympus - 1988

Semiotics in the design project

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Abstract

As can be inferred from this brief description of the use of semiotics in the field of design, our discipline is not only related, in my opinion, to a limited phase of the project. When time and resources allow, semiotics can organize and assist with the entire project cycle, to ensure and maintain consistency between its aim, the use of the design object or product and its final interpretation which – in the best cases – will have social and cultural resonance.

Interview

MICHELA DENI

1. What is your background in semiotics?

My training in semiotics started at the the University of Bologna *(Università degli Studi)* at the beginning of the 1990s. In 1989, I started attending Umberto Eco's lectures along with all the other seminars that made up his course. In all, I studied there for over 10 years, from my early college years through to my PhD. The topic of the lectures was different each year, always new and very stimulating. I well remember the astonishment that accompanied that period, and the feeling of encountering a field of studies that revealed a hitherto unknown world to me, yet one which I had always intuitively felt existed. For the first time, I had discovered the systematization of certain concepts and categories that allowed me to question the processes of signification using reliable tools and criteria – the same processes of signification that had always fascinated me, but of which I had previously only vaguely guessed the mechanism, as an observer, a reader and an onlooker. I suddenly became aware of a discipline that provided an effective methodology for analyzing how literature, cinema, art and media in general function in terms of communication and language.

In addition, the conditions were ideal in Bologna to become passionate about semiotics and to receive an eclectic education in the field: Umberto Eco, Paolo Fabbri, Omar Calabrese and Ugo Volli were all teaching there at that time. We were young students and we went to all these different classes: history of semiotics, linguistics, text semiotics, film semiotics, semiology of art, logic and philosophy of language. As well as attending all those lectures, there was also some overlap between workshops and seminars that gave us the opportunity to work on the same topic with professors of different subjects where we compared research methods and constantly exchanged with each other. This was the situation at the beginning of our studies and it continued later, in a more closely monitored way, during my doctorate in Semiotics Research when there was the possibility to specialize even further through doctoral or inter-doctoral seminars which doctoral students were occasionally asked to organize. During my PhD, for example, in 1996, my director, Umberto Eco, gave me the possibility to organize a seminar (with Alfredo Cid Jurado) on the semiotics of objects. On this occasion we organized a fortnight of talks given by scholars and design historians, designers, project managers and semioticians who discussed the contribution of semiotics to the field of design through exchanges with doctoral students and Umberto Eco.

In 1998, as part of Paolo Fabbri's classes, I organized two conferences entitled *Communicating by Objects* and *Objects in a museum: classify and transmit*. These were made up of sessions with Alberto Alessi and Alessandro Mendini, who were at that time very interested in research and theoretical reflection and who were proponents – for the Alessi Research Center – of several publications on design by semioticians, sociologists, anthropologists, philosophers and ethnomethodologists. In the middle of the 1990s, all the major Italian design companies believed and invested in research in the field of semiotics in design, well beyond any immediate opportunities the market would have given as a result. That is why we still spoke of 'enlightened entrepreneurs', even though Adriano Olivetti's era was well over by then.

It was in this environment that I was formed: between the teachings of a semiotics that could be qualified as classic, a blend of disciplines and, finally, contact with industries that didn't trivialize theory, but rather helped to free it from purely academic research and instead applied it to the workplace where it could be put to the test.

2. Which semiotics did you adopt, and what were your reasons for doing so?

Anyone who was dedicated to research in semiotics at Bologna University during the period I've described, acquired quite an eclectic education in that field: from structural linguistics to interpretive semiotics; from pragmatics to philosophy of language. As part of Umberto Eco's semiotics course, specialist seminars were held on Algirdas J. Greimas (by Patrizia Magli and Maria Pia Pozzato), Charles Sanders Peirce (by Giampaolo Proni) and Louis Hjelmslev (by Alessandro Zinna). As students – and even more so once we were PhD students – we were required to possess sound knowledge of the works of the most important specialists in these areas of research. The way the curriculum was organized allowed each student to choose the semiotic methodology that was most appropriate to his own field of research. That is why I have always favored generative semiotics (from the so-called Paris School) whilst at the same time incorporating certain concepts from interpretive semiotics (Peircian semiotics and, particularly, the work done by Eco). Furthermore, I don't think that any one type of semiotics is necessarily more efficient than another as it depends so much on personal preference and the results obtained by each researcher who – in a given situation – will tend to favor one approach at the expense of another.

I believe that Greimasian semiotics is more efficient in actual analyses, and even more so in the analysis of design objects, my own area of research. In my opinion, its effectiveness lies in having developed an analytical methodology and several tools that enable understanding of how the processes of communication and meaning work. We only have to think of Greimas's model of the *generative path of meaning* and it becomes obvious that a survey of this type helps clarify, order and understand the relation and reciprocal function between the different levels, whether real or abstract, of the production and understanding of meaning and signifieds.

In other words, when faced with any communication process (whether a literary text, film or interface), it is essential to understand and verify by using a methodology, the relation between the expression plane (what we see) and the content plane (what is being communicated, what our understanding is, and what these are based on).

As far as I'm concerned, Eco-Peircian semiotics helps me define the general framework and cultural context wherein lies the object I am analyzing - along with those who use and interpret it (or simply 'understand' it). Besides, in my opinion, Peircian semiotics has a lot in common with studies on objects carried out in cognitive science and also in sociology.

That's why I could perhaps say that I prefer Greimasian semiotics, even though I always use it alongside Peircian semiotics.

3. In which areas of design do you particularly play a role?

I teach at an academic institution specialized in *Product Design and Communication Design,* and I collaborate with companies and project managers working in both of those areas – from the project planning stage of objects and interior design (apartments, business premises, schools, hospitals, etc.) to product packaging, graphics and interfaces, to global communication projects (brand imaging, for example), and the service industry (for example, banking projects, reorganization of public transport, etc.)

4.Why do you think that semiotics is useful in the training of a designer?

I think that semiotics is useful to a designer because, as soon as they begin to study it, they suddenly realize that everything they understood about the world of design and projects – even the very thing they were in the process of creating – can all be rethought in a completely different way, theorized and made verifiable. Designers go on to realize that intuition and creativity aren't necessarily imponderable or incomprehensible gifts and that conceptual systematization (for example, between the concept and the project) can bring greater awareness and freedom of action. Semiotics helps designers to rearrange their ideas, to think differently whilst imaging all other points of view – the most important one being that of the users.

Through the use of semiotics, designers achieve systematic clarification of their project, which I think is fundamental – not so much for the interpretation or explanation that can be provided *a posteriori*, but for the project planning itself. It is essential, for example, to start thinking about the design object as a subject of dialogue between designer and user – which, by definition, is a reciprocal relationship. That's not *only* bec*ause* the user must understand (in design, we could also say 'use') the object being proposed by the designer, but also because the object itself is a projection

or reflection of the idea that the designer has of the user (regarding his ability to use the object as well as his ethical and social values), and the way in which the designer – along with the company they represent – appears and presents themselves to the user.

The designer knows this only too well, but sometimes tends to be unable or unwilling to manage this complex and many-layered dimension of communication, by levelling it in some cases: we have to think about usage, functions, communication of the user functions, the object's values, the implicit representation of the user in this particular object along with the representation of the project manager and equally of the company therein. Just by listing the main factors involved in the planning process, it's clear that everything revolves around a sole design object that can, in any event, seem rather anonymous. After all, designers can legitimately believe that they are only making a bottle-opener, and not that they necessarily have to manage meaning and communication as well; likewise, the user can merely use the bottle-opener without *thinking* of it explicitly.

Nevertheless, communication and meaning are inevitable, even when we limit ourselves to the use of an object we still perceive it and draw conclusions from it (such as resistance, roughness etc). At the time of use, the user may not even be able to express an explicit or conscious opinion of the object, but that won't stop them from making their mind up (even if only with respect to pleasantness or unpleasantness of use) whether or not they will use that particular object again.

So, all that is to say that it is unavoidable, the designer will, in any case, always be creating, managing and communicating 'signifieds' – and needs to have control over them.

5. Do you think that designers need semiotics to do their job?

If you ask a designer who has had no real previous contact with semiotics, they'll generally reply no to that question. Each will have developed their own personal method of planning a project. In addition, certain designers want to create 'just' the objects themselves and prefer to leave the question of meaning up to other people.

Having said that, I do regularly come across designers or design students who, after a certain period of time spent studying and practicing semiotics, are quite simply astonished. I see by the expression on their faces that these are people who are discovering a whole new universe: they start listening with interest, thinking about and trying out the fact that most of what they suspected – regarding meaning and the signification of objects – can be explained in a certain way, and it has a name. In addition to that, they discover the existence of a discipline that helps them organize and put in order the vast number of skills and information they need to have at their disposal in order to have the know-how for a project – in other words, how to transpose functions and signifieds into an object. From that point on, a designer-semiotician can begin to name each concept and element, analyze and organize concepts (along with functions, values, usage) that they had previously treated with approximation. Then, gradually, they shift their view of the project, start asking themselves different questions about it (about the users, use practices, materials, etc) and finally reorganize the concept of project planning, whilst checking consistency and effectiveness as the project gradually becomes reality (for example, from shape and color to the place in an environment and, ultimately, its usage by the end user).

So, no, I don't think that designers need semiotics to do their job as a rule, but I enjoy witnessing the moment when they discover that it can be quite a useful discipline and they begin to understand and control their own intuition during the planning phase. This can be a great source of confidence, especially for younger designers, as they then realize that the right project doesn't just appear out of thin air, and that learning how to navigate the planning phase of a project can help them out of a maze rather than finding themselves at a dead end. The maze can be absolutely fascinating, but only when it's the result of a deliberate choice and not some unavoidable fate.

6. Do you think a designer can also be a semiotician?

Yes, of course – and, obviously, vice versa – particularly in the light of certain individual predispositions that aren't always evident before one addresses them. Whereas, in general, a designer isn't interested in becoming a semiotician, a good designer holds several trump cards on also becoming an expert semiotician.

From my own experience, I've seen designers become passionate about semiotics and then go on to produce semiotic analyses that were better than those of semioticians themselves. However, after a while, the designer, thankfully, forgets about semiotics as a theoretical discipline and methodology of investigation, but the mindset of the semiotic approach cannot be forgotten once it has been adopted. This radically changes the way a designer-semiotician organizes and examines the project approach too. For these reasons, in my experience, teams made up of both designers and semioticians are those that work best: it would probably be too much responsibility for one person to bear if they had to perform both those roles, even though they complement each other, especially when you consider all that project planning implies nowadays. That's why it seems to me to be more efficient to keep the two roles separate: the designer is free to carry out the innovative and creative aspects of the job, whilst the semiotician can focus on the concept, coordinate and intervene at different stages of the project and maintain an objective point of view regarding the effectiveness of the designer's work.

7. At what stage of the design process does semiotics play a part?

In situations I'm familiar with, semiotics generally intervenes at two specific stages of the design process: towards the end of the project – in order to evaluate consistency with the original concept – or at the very beginning, when analyzing direct competitors, the target market of the product and its correct positioning in the market. In any case, this is what is most frequently required by companies and the project managers who work with consultants offering semiotic tools. There is also a third scenario, where semiotics is used at the end of the project as a way of 'scientifically' justifying the work already done, by lending it – *a posteriori* – a sort of rhetorical and communicative effectiveness when presenting it to the project stakeholders.

In each of these three cases, semiotics is only of limited interest as its potential is not fully exploited and it is merely being used as a tool like any other, at times depending on whether it is in fashion.

In Italy, at least, there are only a minority of companies that make use of semiotics throughout the course of a project. The same cannot be said of universities and design schools who, over the last ten years, have succeeded in offering a very diverse curriculum in communication and particularly in semiotics, amongst other disciplines. This is what is happening in Communication Design, which is the most closely-related discipline, and in the field of Product Design. This does indicate that, despite the economic crisis and in areas where it is possible to do research, there is still vision and confidence, including in those theoretical fields that enable the deeper study of all aspects of communication *of*, and *in*, design.

8.What are the most important features of your semiotics?

The most important aspect of my work in semiotics of design and in its application to a project is the quest for clarity: I always bear in mind that the project manager has no desire to become an orthodox semiotician, that's why I use very clear language – relying constantly on examples from everyday life – regarding the applicability and usefulness of semiotics.

The semiotic system that I use is mainly oriented towards methodology and project practice. As for my teaching, including in the context of project planning, I start with a theoretical introduction in which I present semiotics as a discipline that examines the understanding and production of *meaning* and communication. We cover the rudiments of semiotics, the most important authors (such as Saussure, Hjemslev, Peirce, Morris, Greimas and Eco) up to and including present-day research. The idea isn't only to give the students a general and exhaustive idea of the discipline, but

particularly to highlight the presence in any theory of something essential that enables the construction of a method: a method which can then be applied to the analysis of anything around us.

From the very start of my classes, I demonstrate how each concept can be applied, starting with the most simple and general ones, by analyzing not only design objects and architectural spaces but also films, advertising and literary texts.
I do this to help them understand that we are surrounded by meaning and that we always have a tendency to interpret this meaning (when we wonder about something, when we react in a certain way when using an object, or even when we cross the street, after learning to distinguish the sound of an approaching car to avoid danger), but also that we have to begin to understand *how* we interpret reality around us and which elements in each specific situation help us to do so. Using classic semiotic concepts to interpret current events can give us a different perspective on what is around us, from all different angles, and above all enables us, on the one hand, to understand what is meant by an intersubjectively shared method of investigation, and on the other, to find the best-suited method for each designer's own work.

In my teaching, as well as in my professional consultations or in the coordination of a project, I try to show how the understanding, use and even the simple observation of an object don't depend on the user's subjectivity (at least not only, or else there would be no industrial projects), but that it is the different elements within that very same object that come together to produce a given signified rather than another.

During this phase, I select many different objects for analysis seeing as project managers, and future project managers, are typically curious people interested in the expression of anything cultural and social, who are formed by absorbing the culture they are steeped in and who consequently reproduce it in the project. The project manager doesn't only need to understand how design objects communicate, but also how a newspaper article, a film or a given brand express one thing and not another. Learning how to analyze the way a communication process works (or, more generally-speaking a signification process) implies taking it apart then rearranging it in order to understand the deeper mechanisms. That's why I demonstrate, from the outset, that any concept is useful to a semiotician. I apply the concept in order to show how it can be used and at the same time to show that it semiotics is a flexible methodology which is enhanced by contact with other areas – such as the planning stage of the project – and which can be further enhanced by the addition of new tools or by adapting the ones already at our disposal.

After this initial phase of methodological learning and acquiring of analytical skills, we work back from the production of meaning and communication (for example, functions and values). This is the point where we start the project planning process: we start with the objective of the project and put together the material necessary to enable a particular usage of the object as well as an impression of the user who will be using the object, service or interface. At each stage, we examine what we are doing on the following levels: in semiotics, we'd say that we are aiming to create the generative path of meaning, from the immanent level (for example, the concept of a project) to the surface structure (from the choice of materials, for example, to the enabling of a specific practice of usage). At this point, the project manager's job (supported by a semiotician) is to know how to monitor each phase of project planning with a new level of awareness of the effects of communication, perception and function emanating from the project itself.

9. How do you go about a semiotic study in the field of design?

With regard to semiotics of design, my approach varies depending on whether I am analyzing an existing product (packaging, space, object, etc.) or following a new project through its life cycle together with the project managers.

For a semiotician talking to an audience of non-semioticians, metalanguage is the first hurdle to be overcome. Particularly with designers, its use can be a real challenge – albeit a constructive one. Metalanguage is at first approached with suspicion and prejudice, it is sometimes confused with the very notion of semiotics, and then as they move forward, designers understand that to *do* semiotics doesn't mean just describing in different words the existing things around us. Personally, I only use metalanguage when it is necessary to a particular analysis or project and I always, and immediately, demonstrate its utility: the use of such a 'label' to indicate a more complex concept doesn't only summarize it and give it a name, but it also classifies an operation (analytical and part of the project planning process) and identifies it alongside other logical, seemingly similar, operations that in actual fact work better under different names and labels.

Subsequently, the metalanguage can be forgotten or replaced by the designer himself, but the concept has been transmitted along with the criteria of classification, discretization or layered organization of the problem.

The planning phase of a project is such a dynamic process, it is essential to be organized and to find logic, whether causal or sequential, in the very thing we are communicating or producing.

When it's just a question of performing an analysis, a lot depends on the questions we ask ourselves or what a company's requirements of us are: we might be asked to check the communication modalities of an interface regarding a specific user or type of usage; we might have to evaluate the appropriacy of values contained in an object with regard to certain target usage. In cases like these, and when we are analyzing existing design products, I use the tools of design semiotics (particularly those of Floch and the Paris School, as well as my own), visual semiotics, syncretic semiotics and the semiotic branch of cognitive sciences (such as Eco's research on prosthesis and design).

I go about things differently in the case of project organization because the planning phase involves prior analysis of the competition, the company, context and practice of utilisation, user potential, and so on.

As a result, semiotic work on the project is organized in three stages: the definition of the meta-project, the execution of the project and, finally, its presentation. Regarding the definition of the meta-project, we focus on different aspects – starting from a detailed explanation of the operational and communicational aim of the project, such as its functions and values. We analyse the image and identity of the client; the competition; the market positioning; the target market identification (whether existing, potential or to be created through the project), and we highlight the values to be communicated, emphasized or, where necessary, minimized. Once all this has been done, we look at the different scenarios, programs of usage and possible courses of action whilst at the same time defining the roles that object and user will play off each other. In the second, specifically projective phase, we focus on what is known in semiotics as *strategies of enunciation*: in other words, we choose elements of the project planning stage that are consistent with what has been highlighted during the analytical stage in order to build a prototype. Depending on the project, this can involve identifying forms, colors, materials, textures, etc. Each element is subject to commutation tests (gradual substitution of certain elements) which test the relevance of choices made with regard to the project's aims and its definition when the meta-project was established. In other words, the project is a moment of comparison between different elements of prototypes, or different prototypes, in order to arrive at a suitable and performing product in relation to the concept at the planning stage. Finally, in the third stage, semiotics intervenes for the last time during presentation of the project, the moment which involves selecting communication (and, where applicable, media) strategies and product distribution networks.

As can be inferred from this brief description of the use of semiotics in the field of design, our discipline is not only related, in my opinion, to a limited phase of the project. When time and resources allow, semiotics can organize and assist with the entire project cycle, to ensure and maintain consistency between its aim, the use of the design object or product and its final interpretation which – in the best cases – will have social and cultural resonance.

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Alison Cullen-Plitt

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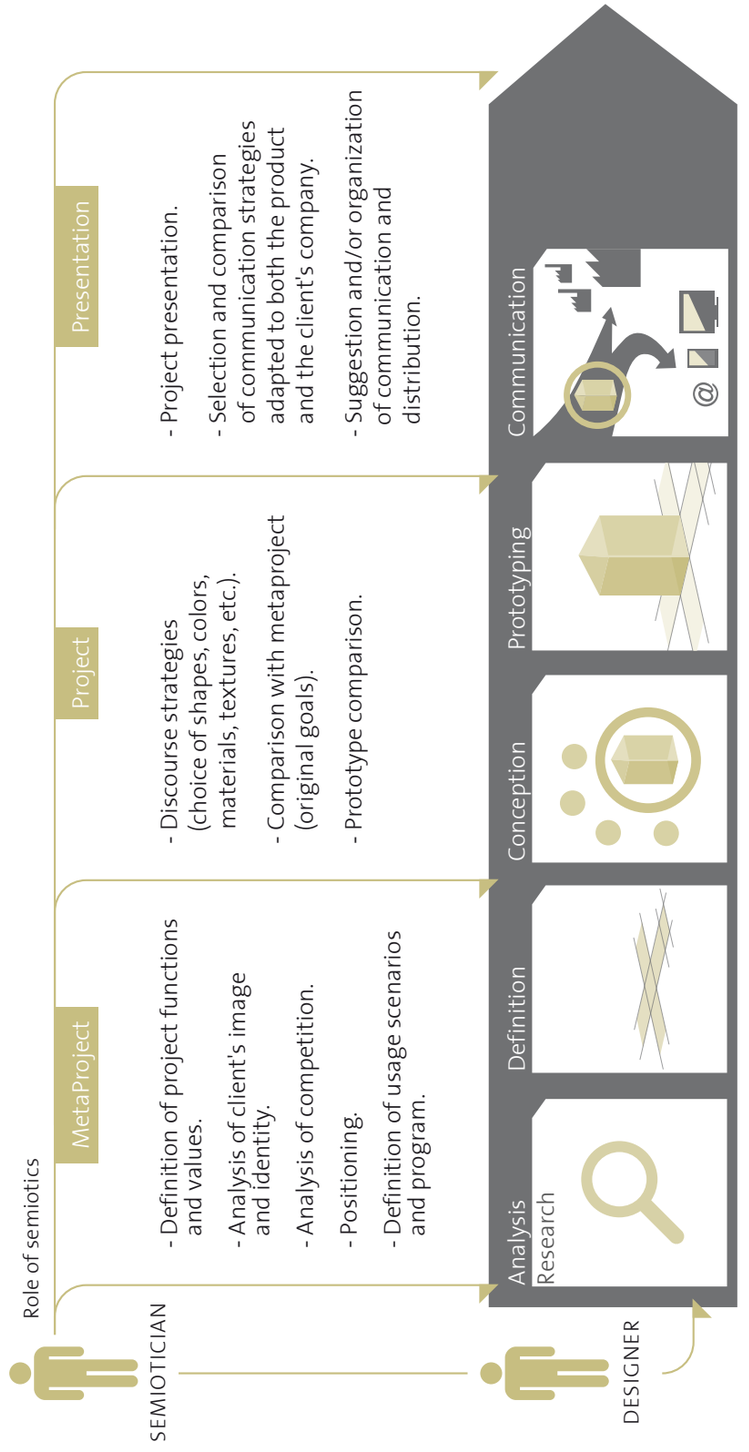
M. Deni

Semiotics and the design project



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Critical Pluralism / Pragmatism and Design
A Generational Attitude

Abstract

In the early twentieth century, pragmatism, a philosophical movement primarily albeit not exclusively associated with Charles S. Peirce, William James and John Dewey in North America, developed an approach to thinking that stressed the practical usefulness of philosophy for key social, educational and political questions. Following a long and still relevant interest in the reflections of critical theory and post-modern critique, architecture and design fields in the twenty first century are turning towards critical pluralism or pragmatism as a balanced attitude to designing with the social, economic and political in mind. Critical pragmatism is constituted by a resurgent Deweyan pragmatism coupled with a critical eye for the politics and ideology of design. Pragmatism itself does not entail the creation of a new theory but rather the deployment of an attitude to architectural and design practice and aesthetics which is evident particularly in the work of a new generation of architects and interaction designers. True to its pragmatist pluralist roots such an attitude does not mean convergence on a single style but rather re-visions the significance of the social, historical and aesthetic through and after the design process. In this chapter I review the resurgence of pragmatism in architecture and design fields and the

recent emergence of a critical pluralism, attentive to the dual claims of critical theory, pluralism and pragmatism, as the intellectual attitude of choice in designerly work.

Critical Pluralism / Pragmatism and Design
A Generational Attitude

GAVIN MELLES

Introduction

In the early twentieth century, pragmatism, a philosophical movement primarily albeit not exclusively associated with Charles S. Peirce, William James and John Dewey in North America, developed an approach to thinking that stressed the practical usefulness of philosophy for key social, educational and political questions. Following a long and still relevant interest in the reflections of critical theory and post-modern critique, architecture and design fields in the twenty first century are turning towards critical pluralism or pragmatism as a balanced attitude to designing with the social, economic and political in mind. Critical pragmatism is constituted by a resurgent Deweyan pragmatism coupled with a critical eye for the politics and ideology of design. Pragmatism itself does not entail the creation of a new theory but rather the deployment of an attitude to architectural and design practice and aesthetics which is evident particularly in the work of a new generation of architects and interaction designers. True to its pragmatist pluralist roots such an attitude does not mean convergence on a single style but rather re-visions the significance of the social, historical and aesthetic through and after the design process. In this chapter I review the resurgence of pragmatism in architecture and design fields and the recent emergence of a critical pluralism, attentive to the dual claims of critical theory, pluralism and pragmatism, as the intellectual attitude of choice in designerly work.

Why Pragmatism?

Pragmatism of the Deweyan/Jamesian focuses on tracing the consequences of the truths we wish to admit when making decisions.

Pragmatism is first and foremost a philosophy with a non-absolutist idea of truth. A hundred years ago, James wrote that a belief is true if it benefits us to think so. You decide that God exists or that the sky is blue simply because you like the practical consequences of thinking them true. James asked: "What difference would it practically make to anyone if this notion rather than that notion were true?" Or, as he once put it, "What is its cash value in terms of practical experience?" (Boxer 2000)

Key features of pragmatism include a focus on instrumentality, consequences, action and experience; a recent definition packaging these is as follows:

> The pragmatism of the early twentieth century offered a distinctive perspective on knowledge, meaning, and truth. In particular, William James and John Dewey's work, through the late-nineteenth and early and middle years of the twentieth century, was prolific and continues to generate discussion in education, politics, and other fields. Pragmatism holds to an instrumental account of ideas as plans of action that borrow their meanings from their practical real- world consequences. This contrasts with current philosophical positions, such as those of analytic philosophy, which propose abstract accounts of knowledge and ideas as correspondence with truth and objective reality. This truth-as-correspondence-to reality position was roundly critiqued by analytic and post-analytic philosophy in the wake of the later Wittgenstein's work. Pragmatism also proposed that individual action and experience in the world was the most realistic basis for decision-making. This action-oriented environment was where an interdependent version of theory-practice knowledge developed. Pragmatism's demise as a flourishing perspective on the forms and practices of science, education, and other fields came with a shift to a rationalist and logical empiricist mood in North America following WWII. (Melles 2008a, pp. 88-89)

To avoid the confusion between common sense (pragmatist) instrumentality, i.e. let's make this work, and a democratic and philosophical version a simple tactic is to employ the P/pragmatism typography by which big P Pragmatism refers to an approach with philosophical roots and little p pragmatism to 'being practical' in various senses. Tom Fisher (2000) makes a similar distinction in relation to architecture:

> The so called pragmatists of our time are generally concerned only with the immediate consequences of their actions: will a building meet market expectations right away or bring in a short-term profit? A true pragmatist would argue that the meaning and value of an action depends upon its consequences over time and that by attending only to immediate effects, we may in fact completely misjudge what we do. (130)

Without attention to these 'consequential' questions the new pragmatism in architecture (e.g. see Saunders 2007) could simply be a 'quietistic liberalism' (see Dorrian 2005, p.232) in disguise that leaves critical interrogation aside. In Architecture and Interaction Design, in particular, a resurgent enthusiasm for pragmatism has helped reinvigorate discussion on questions such as aesthetics, experience, material making, and the theory/practice binary.

Philosophy: Confusing the Issue

The effect of the importation of continental philosophy into architectural schools in the US in the 90s is characterized as follows by Saunders (2007), 'The 'discourse' at leading architectural schools and intellectual publications in this period was amazingly muddled by pseudo-intellectuality, by dazed and confused attempts to import the language and ideas of arcane philosophy and cultural studies (Saunders 2007, ix)'. Michael Speaks points to the move away from philosophical speculation to an action oriented desire in a new generation of architects, with the pragmatic/entrepreneurial disposition sketched above has made a strong break with the avant-garde. Not simply another intellectual fad or crutch for architecture, however, this break requires that we re-examine in architecture the problematic relationship between thinking and doing, an issue at the heart of the work of Gilles Deleuze, perhaps the last of the great theory figures. Deleuze, like the American Pragmatists, wanted to shift our attention away from thought that tethered us to fundamental truths and toward thought that enabled us to act (Speaks 2003, p.213).

In Ockham's (2000) book the idea of things in the making and pragmatism is examined in relation to design, architecture and urban design. The contributors to that volume aimed to explore the significance of making to experience and knowledge, exploring also the effects of the proposal by philosopher Richard Rorty to flatten distinctions such as Literature/Science, preferring conversation as the metaphor to describe the mutually beneficial convergence of different voices in the resolution of private and public endeavours (see Rorty 1989). This turn positioned conversation in the broadest sense as the technique par excellence for knowledge making, including, for example, conversation with literary, anthropological and other texts as sources of illumination for practical problems, including democracy (see Rorty 2000). Thus, I have suggested (Melles 2008a) that:

> "What new (critical) pragmatism offers is scope for the self-creative and public projects of individuals to be achieved through appropriations and transformation of the past in built and designed forms. Such an approach accepts the inherent wicked nature of design problems, and accepts the creative quality of the theory-practice interaction that Schön proposes as distinctive for design in general. It also sees neither the humanities nor the sciences or design as having special purchase on truth, but equally pursuing truths whose merits must be judged by their consequences" (100-101).

Theory/Practice – Experience the Source

The idea that theory and practice relate to each other through a dialectic relation of sorts is not exclusive to pragmatism while the idea that experience and practice should be the starting point for reflections on this relationship connects pragmatism with other theories of practice, such as that of the philosophizing sociologist and anthropologist Bourdieu (see Kivinen 2006). Lentricchia (1986) spells out James' concern with the theory/practice dialectic and the need for evaluation and decision making in many domains of human life, 'The recurring double point of James's pragmatism is that all theory is practice (situated intellectual involvement with real local effects) and that all practices are not equally worthy' (p.6). The fact that not all practices are 'worthy' means judgement (and compromise) is required in a context where heterogenous opinions are favoured,

James's vision of pragmatism is irreducibly a vision of heterogeneity and contentiousness – a vision strong for criticism, self-scrutiny and self-revision that never claims knowledge of a single human narrative because it refuses the belief and it refuses the often repressive conduct resulting

from belief in a single human narrative (Lentricchia, 1986, p.9).

Pragmatism and Architecture/Design: Aesthetics Through Engagement

In addition to architecture, a number of designerly fields have attempted to address the potential of a pragmatist attitude to design problems; this has been particular the case in interaction design (e.g. Coyne 1995; Wakkary 2005). In Interaction design pragmatism has become a reference point for reframing the aesthetics of experience and the co-design process of the field. Thus, Wakkary (2005), for example, suggests that the current complexity facing HCI, means the field needs to be redefined to 'reframe concerns in design in order to emphasise situated participation, non-rational design strategies, in situ design and a re-orientation in focus from tasks to experience' (p.65). The maintenance of an environment of constructive opposition in decision making can be seen reflected in the generation of multiple concepts or interpretations of design problems; Zimmerman et. al (2007), for example, provides a vision of the pathways and deliverables between and among Interaction Design Researchers and other research fields consistent with Wakkary's suggestion.

Spector (2004) suggests that Art as Experience focused on how engagement not contemplation was the key for aesthetics, 'The pragmatist aesthetic experience tracks the subject's engagement with the work of art; it is neither solely derived from the physical properties of the work nor from the imaginative experiences of the subject, but from something forged from the prolonged encounter' (136). Wright, Wallace & McCarthy (2008) contrast this approach to interactionally produced aesthetic experience to other 'analytic' models.

In contrast, pragmatism sees aesthetics as a particular kind of experience that emerges in the interplay between user, context, culture, and history, and should not be seen exclusively as a feature of either the artefact or viewer. Rather, it emerges in the construction of relations between artefact and viewer, subject and object, user and tool. Pragmatism also regards aesthetic experience as something that is not limited to the theatre or gallery. While these latter institutionalize and frame objects as works of art and therefore signal the need for an aesthetic appreciation, they are neither necessary nor sufficient for aesthetic experience. On the contrary, aesthetic experience can be the stuff of our everyday lives as lived and felt. (p.1)

The authors illustrate through further discussion and exemplars how such an approach to pragmatist aesthetics encourages a focus on the interactive potential through the prototyping of concepts (see Peterson et al. 2004) and the overall co-design imperative in current HCI (Battarbee & Koskinen 2005) final design process, including the significance of bodily interaction in this process (Fogtman, Firsch & Kortbek 2008). That is that interfaces to aesthetic experience are created through engagement during and after the final design.

Rejection of Objectified Contemplation as Engagement

Thus pragmatism is an action-oriented aesthetics of engagement; one which critiques an objectified contemplation as useful or meaningful, 'Pragmatic regard for the aesthetics of action help account for Dewey's distaste for "museum art" which is not only put on a pedestal to serve the interests of an elite, but also thereby becomes revoltingly inert, dead, incapable of fostering further action' (146)

Spector (2004) suggests that continental philosophy is no longer producing the goods for a generation of architects concerned both with aesthetics and social good.

Architects looking for theoretical guidance in the struggle to overcome this conflict and craft a comprehensive design outlook that reconciles the uniqueness of the aesthetic with an interest in improving the world have had reason to be disappointed in continental philosophy. The off-putting — disheartening even — thing about much continental philosophy is that it seduces architects away from the problems of achieving social purpose through their work more readily than it helps them with the task of reconciliation (2004, p.147).

Dewey's pragmatism rejects the need for objectively specified criteria for aesthetic judgement – what Spector calls a 'judicial' approach – as it blinkers receptivity to new forms of life and tends to a formalism that limits evaluations expression in other ways. A totally subjective 'inner' aesthetic does no better really because it also assumes that aesthetic judgement is an objective contemplative realm separate from experience. Rather the pragmatist aesthetic 'tracks the subject's engagement with the work of art' (2004, p. 136). So we experience the world and its objects in a way that is not mysterious and requires no specific elite guidance or archiving in museums and galleries. Thus engagement and an aesthetics emerging from this experience is what pragmatism offers – through Dewey and others – to architecture.

Pragmatism and (Critical) Pluralism in Architectural Visions

In the theoretical literature of architecture and design disciplines there has been a recent move away from a focus on postmodern speculation towards a growing recognition of the value of pragmatism as underpinning a critical pluralism. Lamenting a lack of work in architecture in this tradition, Guy & Moore (2007) for example point to 'those who are productively blurring the distinction between critical theory, pluralism, and pragmatism – James, Dewey, Hickman, Feenberg, Haraway, Latour, Schlosberg, and Rorty' (21-22). The authors suggest that plurality and critical pragmatism are not only possible but necessary bedfellows; plurality played out in sustainable architecture through civic participation.

The authors exemplify their proposal with the story of the Norman Foster design of the Commerzbank of Frankfurt, originally rejected as 'a degenerate American architectural form associated with urban decay' (p.20) and the public participation in its reinterpretation as part of a regenerated city skyline now signalling not post-war decay but renewal The authors claim that pluralist practice is the 'seeking out the synthetic opportunities that are latent in the conflicting imaginations of citizens' (21). According to this interpretation of architecture's pluralism, architecture can participate in this conversation of conflicting imaginations over time. This connection to imagination, as Collier (2006) points out, bridges the actual with the virtual, where 'pragmatism treats imagination as the capacity to understand the actual in the light of the possible (2006, p.313).

Exemplifying Pragmatist Attitude - Koolhaas

Rem Koolhaas is one of the signal voices of this new pragmatic attitude to architecture. Grafland (2000), for example, describes Koolhaas approach as design without a master plan, 'Koolhaas, although the same is true of Tschumi, is focused not so much on the architecturally significant characteristics in the plan as on its operational and pragmatic possibilities – where time is an essential characteristic ... Koolhaas's pragmatism is determined more by the tensions between standardization and homogeneity versus the wish to allow relatively random 'streams' to flow freely ... The architect has long since lost control over the future of his design' (2000, p.115). Architecturally this entails a structuring that avoids the social mimesis of existing social chaos while enabling flow, 'and then within that structure allowing the Deleuzian flows to flow into each other' (119-120).

Figure 1: A Dutch House - Outside 7 (koolhaas)
CC Creative commons

More recently, Yaaneva (2009), who conducted ethnographic fieldwork in Koolhas's studios, offers her own action-oriented construction of Pragmatism and its intersection with architecture. She rejects the idea of architecture as just service to society conditioned by circumstances, but rather following the proactive power of architectural projects to mobilize heterogenous actors, convincing, persuading or deterring them. Architecture and building will be tackled here, as becoming social (instead of hiding behind or serving the social), as active participants in society, design - as a process of recollecting, reinterpreting, and reassembling the social' (18). Such agency for architecture comes from a critical realism that structure without a master plan leaving space for interpretation.

Bullivant (2007), for example, refers to 'progressive architectural practices' in the UK where

public collaboration is invited, in these terms, 'Reflecting social change without being socially determinist and allowing the process of production to transform the initial idea for the project – these are some of the design parameters that distinguish the finest work of this rising generation from that of any generation that asks too much or too little from architecture' (p.88)

As a shortcut to a new style, it offers little; it will be a sad day when we see "pragmatism" used to put a glamorous gloss on pipe rails or exposed steel. But as a method to reinforce skepticism, to erase credulity, to verify through action new ideas that work, it may be just what architecture needs. (Nobel 2001)

The interest in the pragmatist (Dewyan) and neopragmatist (read Rortian) potential for a new generation of architects is at least a decade under discussion, and centers on our relations to things in the making and public and private spheres and questions (see Ockman, Ed. 2000).

Potential Relevance for Design Education

Donald Schon (1995) questions the existing epistemological approaches to higher education, and particularly the 'technical rationalist' claim that became embedded in higher education and accepted by the new disciplines that instrumental practice (all practice) became professional when it is based on the science or systematic knowledge produced by the schools of higher learning' (p.29). Schon claims rather that a larger place for practice and knowing-in-practice is required,

"The relationship between 'higher' and 'lower' schools, academic and practice knowledge, needs to be turned on its head. We should think about practice as a setting not only for the application of knowledge but for its generation. We should ask not only how practitioners can better apply the results of academic research, but what kinds of knowing are already embedded in competent practice" (p.29).

Combined with some of the designerly considerations for aesthetics and experience, design education could benefit from a pragmatist attitude research

Methodological pluralism is a hallmark of pragmatism and a familiar ally of industrybased design research. At the level of industry practice and consultancy, it is an eclecticism motivated by conventional pragmatist instrumentalism. Academic design scholarship, which aims to mark out a distinctive space for itself in relation to everyday practice, could benefit from a robust inquiry paradigm able to incorporate the wicked nature of design solution-making and the contribution of material and visual representation to this. A foregrounding of pragmatism's claim to be the inquiry paradigm of choice for design and the foundation for a mixed-methods approach could contribute to greater consensus on the distinctiveness of design in a more substantive way than some current propositions. (Melles 2008b, p.9)

Tom Fisher suggests that architecture should engage with pragmatism to avoid an over emphasis on idealistic focus on intentions

The architectural community would greatly benefit from a more serious engagement with the ideas of pragmatism, which can illuminate some of the blind spots in architecture today. Pragmatism is not against theory, nor is it an "imperialist gambit" by American thinkers. Pragmatism urges us to look to the consequences of what we do, which the discipline of architecture, infused with an idealistic focus on intentions, frequently resists. (Fisher 2000)

Concluding Remarks

Architecture and Interaction Design have been particularly enthusiastic in exploring the potential of pragmatism to invigorate theoretical and methodological debate on current practice and thinking in design fields. New pragmatism, while contested, is closely associated with generational change in design fields as theory/practitioners look for a vocabulary to explain there commitments to aesthetics, interaction, making and so forth. Perhaps (new) pragmatism will become the dominant voice of design thinking and practice with its focus on meaningful making, social engagement, interpretation and aesthetics.

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A century of objects
A history of modern life, the consumer society and design, as seen through the collection of Jean-Bernard Hebey

Abstract

Over more than 40 years, Jean-Bernard Hebey has assembled one of the world's largest collections of industrial design objects. In this interview with semiotician Bernard Darras, Hebey shares his understanding of design and the way he, as a collector, sees his objects.

JEAN-BERNARD HEBEY

BERNARD DARRAS

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Interview with Jean-Bernard Hebey conducted by Bernard Darras

Jean-Bernard Hebey, French listeners know your voice well from your many years as a radio presenter, but they aren't aware that you come from a family steeped in the entertainment industry.

That's right. For 20 years, one of my uncles was singer Charles Trenet's agent and another ran the Juan-les-Pins jazz festival in Antibes[1]. My father was an actor and my mother was seamstress to Bruno Coquatrix's wife[2]. They specialised in the production of period costumes and of costumes for variety shows in music halls. I was fortunate to spend my childhood in the wings of cabarets like the Moulin Rouge, Folies Bergères and Nouvelle Eve – it all trained my eye.

After secondary school, I got a job as an entertainer at Club Med, then I was fired and taken on by Europe 1 as a radio presenter, at still only 18 years old. For the next two years, I was fortunate to work with Daniel Filipacchi on his famous programme 'Salut les copains'. Then, I went to work for RTL where I was head of entertainment and a presenter for 17 years. After being fired once again, I set up my own company, called 'Sumo'. From then on, I earned a living by following my own ideas and the things I wanted to do. My professional activities are very varied and diverse: I still work in television and radio when I'm asked. Over the last 30 years, I've established a database of popular culture, run websites and redesigned houses, amongst other things. I don't run a big company, but it has allowed to keep my independence and freedom.

I do what interests me and what I enjoy, and it's always in sync with the times. I've always been interested in the period I live in – it's the same with music. I'm lucky to belong to the generation of Baby Boomers who have experienced both worlds: the pen and the computer, analogue and digital.

How did you become a collector?

I was lucky enough to be born into a family of collectors. My father collected pocket watches and English furniture and took me to flea markets from a very young age. One of my cousins had the finest collection of Jacques-Emile Ruhlmann furniture, as well as another of 1950s Italian glassware. As for me, I collected what I was interested in, that's to say anything related to America. In 1961, at the age of 16, I travelled across the USA by Greyhound Bus, from New York to Los Angeles, without knowing at the time that Raymond Loewy had designed those buses! I think it must have been a premonition. I fell in love with a country that seemed to me to be in Technicolor, especially coming from black-and-white Europe. So, I decided to bring America to France and for me, the most exciting things about America at the time were the objects of everyday life. By that, I mean industrial design objects produced by the new consumer society, or rather 'possessions society', because in addition to benefiting from what these objects did, owning them was also a question of prestige. The first thing I bought in America was a juicer. It was 1961 and I'd never seen such a thing in France. It wasn't just that we didn't drink orange juice in the morning, but our manual glass lemon squeezers were nothing compared to those dazzling 7lb metal appliances.

SUMO 1 Juicer

Aside from the influence of family environment, how does one become a collector?

There's certainly something neurotic about a collector! Along with a need to possess... perhaps a need for reassurance... or maybe the fear of missing out? On a more practical note, going to an antiques fair or flea market is mainly an opportunity to visit a town, discover museums, hotels and restaurants. It's about having a change of scene, speaking another language. I'm interested in anything and everything, I want to know it all and I get enthusiastic about everything: it's exhausting, expensive... but exciting!

In the 70s, I went to museums all the time, particularly to modern art museums – neither design nor photography museums existed yet – and I bought catalogues of every exhibition I visited. I also had two incredible strokes of luck. When I was working for RTL, I was responsible for organising the European tours of rock groups like The Who, Led Zeppelin and the Rolling Stones and I took advantage of these trips to visit museums during the day. That's how I trained my eye. My second stroke of luck was meeting Chantal Darcy, who was looking for a partner to open a new gallery. She introduced me to one of the leading contemporary sculptors at the time, Georges Jeanclos, who went on to become a close friend of mine. Our first exhibition was dedicated to Robert Malaval's works on rock and roll and the Rolling Stones. Chantal also introduced me to the music of John Cage, Philip Glass, Steve Reich, La Monte Young and Marian Zarzeella. They held concerts in her living room. I felt like I'd suddenly become intelligent and that I'd opened my eyes right in the middle of the Pop revolution. I loved Andy Warhol – who, to me, is as important as Picasso – Lichtenstein, Rauschenberg, Wesselmann, Jasper Johns, etc. – all Americans.

I also became friends with French artists and, as far as I could afford, I started to collect them but Monory, Klasen and Erro were already too expensive for me. Unfortunately, I quickly became bored with contemporary art, there just wasn't anything that excited me any more. The Americans were unaffordable and the French weren't creative enough for me, so I carried on buying juicers and vacuum cleaners in the States.

The neo-expressionist Figuration libre movement in the 80s was the last thing to interest me in painting. At the time, I was presenting a television programme and I got artists like Jean-Charles Blais, Robert Combas, François Boisrond and Hervé Di Rosa to design the set.

From the 70s on, I also developed a passion for photography, so I naturally collected photography books, so much so that in thirty years, I amassed what was possibly the largest private collection of photography books and reviews in the world. 5,000 books; 10,000 journals; invitations to exhibition openings (genuine prints in themselves); 50,000 press cuttings, etc. But the problem is that it's a 'closed' collection. In 1952, Cartier-Bresson published a book called 'Images à la sauvette'. Once you own the first signed edition, you're finished with 1952 because Cartier-Bresson didn't publish anything else that year! He brought out two books in '54 ('Les Danses à Bali' and 'D'une Chine à l'autre'), but after about 10 years, your Cartier-Bresson collection is complete. My entire photography collection was properly classified, inventoried and computerised. In 2000, I founded the library of the Maison Européenne de la Photographie for Jean Luc Monterosso and the City of Paris on the basis of Romeo Martinez's collection. But after that, I grew tired of photos and the trends in photography didn't interest me anymore. I looked to house my collection in a French museum but seeing as two successive culture ministers weren't interested, I sold the whole invaluable and unique collection to a gallery owner in Frankfurt.

The collection I was left with was the one that interested me the most – industrial design.

It's more than a collection, though, it's a passion.

I've got a very basic marxist vision of industrial design I see it predominately from an economic angle. As a result of the industrial revolution, machines and electricity revolutionised the traditional handmade process. Workers replaced the skilled artisan and 'Taylorism', 'Fordism' and the assembly line became widespread. The two world wars further accelerated the process of industrialisation and production organisation. In factories, it was necessary to rapidly produce whole series of weapons, vehicles, tanks, and planes on assembly lines and the US was better equipped than Europe for that. After the war, the west had new tools at its disposal: the press, cinema, radio and television which together formed the 'mass media'. These ensured the 'propaganda' or, put more subtly, 'communication', meaning the mass dissemination of a model of

[1] The first European jazz festival, founded in 1960.

[2] Songwriter, composer and impresario, he wrote over 300 songs and was owner and manager of Europe's biggest music hall, the Olympia in Paris.

society. At the same time, shopping malls were being developed as new systems of distributing this brand new merchandise.

Added to this was the fact that people were leaving the countryside and moving to towns and into new homes that needed equipping with things like washing machines, irons, hairdryers and toasters. Put all those factors together and you get the consumer society.

The mass media told and showed us how we were now meant to live and the American way of life imposed itself as a global standard. American weapons manufacturers had a surplus of metal and with it they went on to make shakers, toasters and blenders using the same machines and workforce, very often with the same aesthetic. The products were then distributed by supermarkets. This is how the production and consumer society was able to prosper and it was sustained by a healthy dose of planned obsolescence. Designers were instructed to make regular changes of shape, material and colour whilst the function of these objects remained much the same. That was their job, they were there to sell products through retailers with the help of the mass media. It was the beginning of an orgy of creativity designed to put an entire industry and its workers at the service of objects – of which a mere twenty could really be called essential. But in order to keep the system running, new products had to be created all the time, products that created new consumer needs or desire.

This was the way consumerism and the society of possession worked. Products continued to be created and in huge numbers, their price decreasing according to the rising volume of production. I was born after the war in 1945, a Baby Boomer, and so I am one of these consumers. I started collecting these products very early on. Ironically, these objects were generally made under U.S. license by European companies funded through the American Marshall Plan. Talk about promoting a way of life...

In order to situate your collection, we have drawn up a concept map that shows the different ways of looking at an object along two superimposed axes: one goes from design to usage of the object, the other follows its life cycle from the birth of the object up to it being discarded or recycled in some way, whether materially or symbolically.[3]

At each stage of its journey, the object changes status, meaning and often name. The purpose of this map is to look at these objects in each of their different phases and relate them to the way you see them as a collector.

According to our map, 'things' that are part of material culture can be divided into two categories: immovables, something most people don't collect but that are nevertheless an interest of yours, and movables, the category in which your collection can be placed. Let's start with immovables.

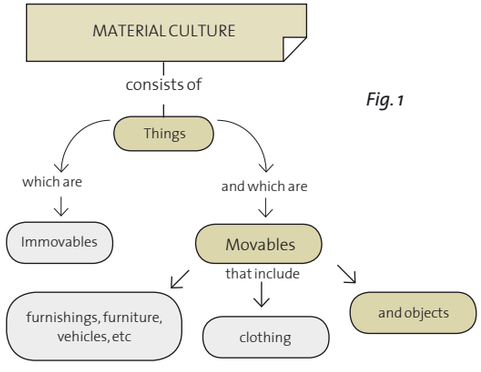


Fig. 1

That makes sense. When I was a child, my father often had financial problems and we regularly had to leave the various furnished apartments he rented in order to escape the bailiffs. As a result, as soon as I started work, some survival instinct made me want a roof over my head, preferably a house that nobody could take away from me.

I enjoy the construction of houses, building up the walls and marking out areas of living space. It's solid and serious. I like things that are safe – yet, ironically, I've always worked in the media and entertainment industry where there's a lot of uncertainty, gossip, trends and superficiality. So, when I pour a concrete slab, it's stable, reassuring and strong, exactly what a concrete slab should be.

Whilst I've often had problems with people I've worked with in the media, that's never been the case with people in the construction industry.

Unless I'm mistaken, you've never collected furniture, vehicles or clothes – only objects interest you.

Well, think again! I've always been passionate about clothes, but not about fashion. You'd be surprised how much I know about the apparel of the 20th century man. Think of elegantly-dressed men like Cary Grant or Fred Astaire; shoes made to measure by John Lobb; custom-made shirts by Loran in Turin, Hilditch and Key on Jermyn Street in London or Charvet in Paris. It's about being exacting, having a taste for elegance, dandyism and the exceptional.

Still, it's not a collection.

I'm ashamed to admit it, but given the ridiculous amount of clothes that I own and wear, dating from the 1930s up to today, you could almost call it a collection! Above all, clothes are communication. They are the first exchange with another person, they say 'this is who I am'. Either the other person will have the same codes, or he won't know or recognise them and the dialogue will be distorted. This initial exchange saves time in a relationship!

It's the same for a house. When you visit someone, me included, at home, you find out more about the true nature of the person that lives there.

Have you ever been tempted to collect cars?

Cars are subject to the same influences as toasters, vacuum cleaners and other everyday objects. They reflect the taste, techniques, issues and fashions of the time when they are commercialised. But as for collecting them... well, I couldn't, they take up far too much room!

We have divided the world of objects into four broad categories: antiques, works of art, crafts and industrial design. Seeing as you're not someone who is passionate about the past, I take it you've never collected antiques.

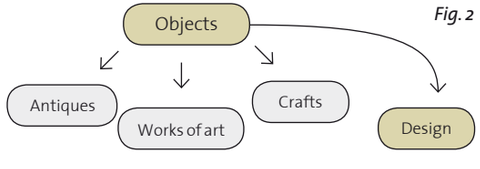


Fig. 2

Without wanting to become an Egyptologist, I still find it interesting to know what Ramses II did and I have to know my Napoleon III furniture in order to understand why Le Corbusier preferred to put a glass top on his tables. It sounds a trite thing to say, but we need to know where we come from in order to know where we are going. It's the same with works of art: I'm interested because I need to educate my eye and they're references. The one thing I don't like is decorative art: if the point of it is just to look nice, I quickly lose interest. I particularly hate ornaments, little porcelain figurines, for example. I know it's technically amazing and that this know-how has been lost but, even so... It's like ships in a bottle. All the work involved and all the time they take to make... but what's the point?

What is your opinion on craft objects?

I'm torn. I hate crafts for all that it represents and for the type of people that monopolised it, particularly the Bobos, but I have to admit that a pair of Japanese bonsai scissors or a hand-forged scythe are magnificent objects. As is a Hermès saddle-stitched belt. So, I have an ambivalent attitude towards them.

Now we are at the heart of your collection

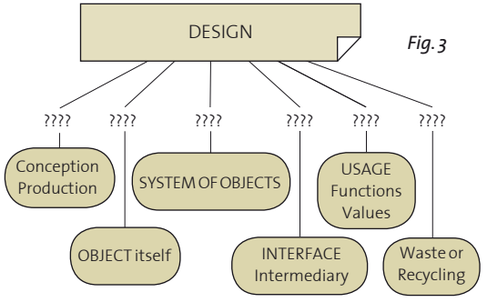


Fig. 3

We'll start by looking at the object design and production phases, then we will focus on the object itself in isolation from what precedes and what follows its creation. Following on, we will address the systems of objects then, moving towards the user, we will look at the object as an interface and also how it's used. Finally, we will focus on the object's life after usage and in particular the collection object that is no longer used for its original purpose

[3] This concept map is based on research done by Bernard Darras and Sarah Belkhamsa as part of the following topic: " Étude sémiotique et systémique des produits design " at the Centre de Recherche, Images, Cultures et Cognitions. (CRICC). http://cricc.univ-paris1.fr.

but instead to be exhibited, classified and to act as a reference and a reminder.

So, we have six main categories and in each there is one possible type of collection and, consequently, one type of collector.

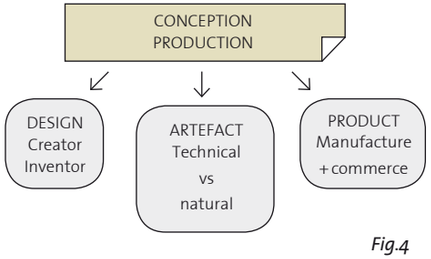
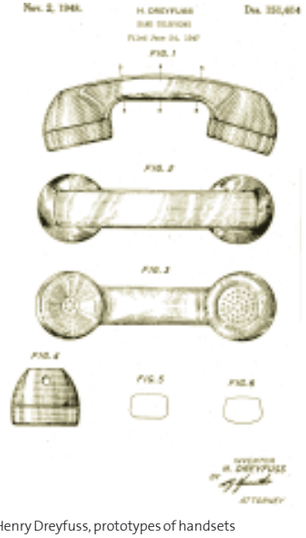


Fig.4

We can divide the first category – conception and production – into three phases: the object as a result of creation and conception; the artefact that is a result of a technical production process; and finally the product that belongs to the world of marketing, advertising and commerce.

Let's start with the conception. Are you interested in objects that derive from the creative process: concepts, mock-ups, prototypes or objects that bear traces of the designer/inventor or of the designer/artist?



Henry Dreyfuss, prototypes of handsets

Mock-ups and prototypes interest me, but I don't collect them. I leave that up to French museum curators who are obsessed with the 'unique'. They just still haven't 'got' the concept of the 20th century: the 'multiple'. What interests me most is the fact that an object has been manufactured by a machine in its thousands, with no human intervention, in order to produce an object that is useful, durable, cheap, convenient and that performs its function. In this respect, I'm Bauhaus through and through. That's what makes me laugh – or rather gets me mad – about Art Design and mass-produced armchairs being sold at exorbitant prices by artist designers. Just like in contemporary art, designers who play that game will get a nice second home out of it, but they're selling their souls at the same time. They'd be more honest calling themselves 'artists'. Time will tell!

The thing that interests me is what the designer will think of that will improve people's lives, for it then to be made by a machine.

It's rare for designers to invent a new object with a new function. Lately, that has been the case with Jonathan Ive, the designer of Apple's interfaces, who is deeply involved in the development of an object and its use. But in the normal run of things, the designer is just a cog in the machine and has to focus on aesthetics by creating desire for an object whose function has often remained unchanged for a long time.

The manufacturer generally says to the designer: 'Give me the ideal thing without changing my manufacturing processes... meet the user's needs and create something desirable at the same time.' To do what's been asked of him, the designer has to both convince his client of the quality of his solutions and make sure that the new product can be made on the same machines by the same workers, faster and more cheaply than the previous model.

It sounds like an impossible task, but these are the challenges faced by good designers.

Can we conclude that you collect the objects that are a result of these exploits?

The shapes, materials, colours, uses and functions of an object are indicators of an era and society; they reflect our hopes and sometimes our failures, too (remember the Betamax video tape player or Radiocom 2000 and Bi-Bop, the first French mobile phones?) I collect objects that have all these components and that provide a tangible link to our own personal story as part of the history of society as a whole.

Of course, they can also inspire nostalgia, but that's not what interests me – it's just a by-product.

Does your collection reflect a particular liking for inventors and creators?

Experience and years of research have enabled me to prove what we always instinctively knew: in general, major designers make more than one object. Often, these are people whose prolific creative output spans several decades. They are interested in a creative process that itself evolves depending on the techniques, materials and tools available – they even follow trends too. Henry Dreyfuss, Dieter Rams, Kenneth Grange are perfect examples of that.

Have you ever collected everything a particular designer has made?

If I like a particular designer or brand, I try to identify, index and find everything they made. I've done that with designers like David Chapman and Henry Dreyfuss. With brands, it's more complicated because the designers often aren't identified. Contrary to the States, Europe hadn't understood until very recently (and even now, not that well) that having a 'star designer' adds value that boosts product sales. Unfortunately, no-one knows who designed the Moulinex household appliances.

To what extent are you interested in the work of engineers and technicians who invent or improve artefacts? And what do you think of the merchandising process that runs material culture, as well as society, by feeding it with products all the time.

I'm not really interested in technical issues or ergonomics. Whilst I fully understand that without technical revolutions certain objects wouldn't have been created at all, the thing that really interests me is when a particular object that meets a real need goes on to become an object of desire. I know full well that before 1940, it took three days to travel from Paris to Marseille! But the function of the car (to go from A to B more quickly, comfortably and safely) hasn't changed since the invention of the automobile – and yet, look at the differences between a DS 19, a Model T Ford and a Fiat 500! Same thing with a toaster. Its function – burning bread in the morning – hasn't changed since the first model was made. And yet, by looking closely at shapes, colours, materials and the like, we can say for sure when a particular model was commercialised. Today, companies like Apple have made technology interesting by successfully putting design at the heart of their industrial processes. The same is true of IKEA, but with far less success – as anyone who has spent their weekend struggling to assemble a desk with an Allen key will tell you!

I'm not interested in objects unless they have an impact on our lives and, in turn, it's these objects that will bring back memories, just like Proust's madeleines.

I'm interested in form rather than function (although the two are inseparable) and I'm also sensitive to the emotional power of objects and the memories they rekindle, because they allow us to place our lives and our emotions (subjective) in a concrete context (objective).

So, the object itself, separated from production process and use, doesn't interest you.

I'm an archaeologist of modern life. Two pieces of a chipped plate, a fragment of a weapon and a scrap of cloth found in the desert can teach us a lot about the way we lived 1,500 years ago. The same goes for the objects I collect, they are daily testaments of our recent civilization. We wouldn't have a clue about how people spent their evenings before the invention of television and the transistor radio, were it not for photos of the family gathered around a one cubic meter radio in their living room! It's the transistor that marks the start of our 'me' civilization. For me, objects are primarily indicators, testaments and reminders of an era and a lifestyle. That is why their material, shape, colour and texture interest me. Now, neither a vacuum cleaner or a toaster are going to move me to tears. On the other hand, I do find something emotional about their shape, their social and historical context. The reason why I dreamt of owning a Walkman, why I was dying to have that particular radio or camera was because of the promise (often false) of endless joy to come, and the guarantee I would belong to the club – though not all that private – of those who've 'got one'!

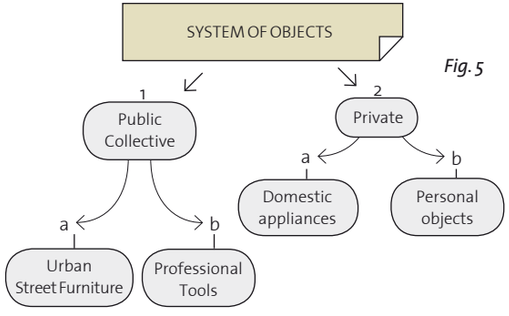


Fig. 5

Under 'system of objects' in our concept map, we have distinguished public and collective objects from each other: urban and professional versus private, domestic or personal objects. Are you interested in these groups of objects?

I love street furniture: benches, lampposts, traffic lights. I own a few pieces, but I don't have room for any more. It's the same problem with machine tools: I'd love to own a John Deere tractor, for example (a real one, I've already got a toy one). I know quite a lot about them, but, unfortunately, I can't collect them, they're just too big. I'm also crazy about anything to do with do-it-yourself. I'm not a DIY man myself, but when you look at the shape of those electric drills and screwdrivers, or those jigsaws, they're amazing! Tools are where crafts meet industrial design: they are the perfect illustration of design. There are only a dozen tools with a precise function (need) but thousands of cosmetic variations (desire).

Photo from the collection Tractor designed by Henry Dreyfuss[4] for John Deere

4

As for personal objects, they derive from the same industrial design process but we live more closely with them, we have an emotional relationship with them. In the few museums that are interested in design, they only ever show the items that belong in the 'finest' rooms of the house such as the lounge, dining room and the hall: the furniture, rugs, lamps and so on. They never display anything from the rooms that are most important to human survival: the kitchen, where food is stored, prepared and often eaten and the bathroom, the room in which we wash and dress. It's only recently that we've started showing people around our kitchens or bathrooms and yet these are the most important rooms for the development of the human species.

It's surprising that when it comes to design, even industrial design, museums are mostly interested in chairs or lamps. Maybe their infatuation with design is just an excuse to sell sofas, chairs or armchairs at prohibitive prices. How many more Prouvé exhibitions are we going to have to take? Pieces of furniture by designers such as Le Corbusier, Eames, Noguchi and Breuer have been re-edited ever since their invention. Manufacturing costs have gone down considerably due to the increase in distribution, yet prices have actually gone up! What's happened to the original Bauhaus spirit?

What makes an armchair more noble than an iron? Why is a lamp more worthy of being displayed in a museum than a vacuum cleaner? Are curators really that conservative?

The objects with which we have a real relationship of life and survival are the ones that interest me. There would be riots in the streets if fridges, washing machines and irons were done away with. We have an essential and vital relationship with all these objects and yet we never show them off.

Little by little, these objects have changed their social status, the same happened in the past with furniture and paintings. Nowadays, people will invite you to have a look around their Gaggenau kitchen and will show you their Starck citrus squeezer, almost forgetting what these objects are actually meant to do. This type of design is more about the social functions of recognition, communication and prestige.

[4] http://urbanindiana.com/in_maumee_valley/018_maumee_v_2005.jpg

Citrus squeezer Starck

Do you also collect personal items such as pens or spectacles?

Yes, the glasses in my collection made up part of an exhibition called 'Media Aesthetics' that I organised at the Musée des Années Trente (a museum about life in the 1930s) in 2008 in Boulogne Billancourt. In the exhibition, we displayed objects that help us communicate with our two most developed senses: sight and hearing. The purpose of glasses is to improve and correct sight, in some cases to protect it from ultraviolet rays – but they also have different shapes.

The first glasses were round and stayed that way for a long time. Think of Freud, Le Corbusier and Fujita. They also form the sign an optician displays outside his shop. Next came Ray Ban's Aviator glasses, designed to protect a pilot's field of vision. Then, the Italians copied them and added a concept which was indispensable to them – 'style' – and they manufactured the wonderful Persol sunglasses. As for Oakley aerodynamic glasses, well, they were initially designed to protect cyclists's eyes, then Porsche made a continuous screen out of the two lenses. These are the glasses that Yoko Ono made famous.

There are as many types of glasses frames as there are keyrings, but up until today, there have only been a few that you could call revolutionary.

In the world of writing instruments, it's more or less the same thing. First there was charcoal, then silver pencils, lead pencils, then wooden pencils with graphite and finally, mechanical pencils. As for pens, goose feathers were replaced by a quills made of metal (Sergent Major) before the invention of the Waterman fountain pen in the late 19th Century. It was technically enhanced by Parker whose famous Parker 51, redesigned by Laszlo Moholy-Nagy and Bauhaus, was distributed to the entire American army during the Second World War. In 1950, Marcel Bich created a revolution with the Bic ballpoint pen that, of course, everybody knows (it's only fair to point out that we owe this invention to Laszlo Jozef Biro). Finally came the felt-tip pen and the famous 'Magic Marker' that Sidney Rosenthal put on the market in 1952.

In all, there are 10 sorts of pens and pencils that count, and obviously, I've got them all.

Parker 51 designed by Laszlo Moholy-Nagy

As I was saying before, an object only interests me if it made an impact on its era. There was a before and after the ballpoint pen. I also collect office materials. Most of us spend almost a third of our lives in an office! In this area, everything changed with the advent of the stapler, pencil sharpener, typewriter, calculator – and, of course, the computer. We spend eight hours a day with these objects and they make a big impact on people's lives. To me, they are no different than Proust's madeleines in the way they evoke the past. I actually have a whole exhibition that's dedicated to office aesthetics.

Valentine

Office equipment and the domestic sphere can both be termed systems of objects, but are your purchases and collection determined by such systems?

I've got a dozen or so of these systems that have been put together and identified in the collection database. I call them 'tunnels'. In addition to office and household items, I collect communicating objects of media aesthetics. Some gardening objects are fabulous too.

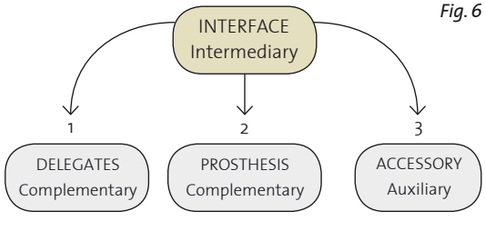
I also collect objects by material and colour. I have a weakness for cast aluminium and the colour orange. I particularly collect orange, plastic objects. In Europe, for the last forty years, plastic and composite materials have taken the lead.

In fact, these tunnels are chains or themes that structure your collection. I imagine they guide your research and your purchases.

The two go together. I don't buy an object just because it's orange, made of plastic or cast aluminium or simply because it would 'lengthen' one of the 'tunnels'. But it generally turns out that if it's orange and plastic, it is likely to be from the 1970s and its shape will be strongly influenced by the aesthetics of that decade.

Let's go back to our diagram and the categories that address users and uses.

Fig. 6



In this field, the object is increasingly considered as an interface, a device of intercommunication between humans and non-humans and, more and more, between the objects themselves. That's why we delegate the task of holding liquid to a container, simply because it can do this better than our hand. In order to do that, the object has to fit the size and shape of our hand, not slip out of it, etc. These interfaces – intermediaries between our skills, needs and desires on the one hand and the functions that materialise in the object on the other – are grouped into three different types of objects/interfaces:

The first is the delegated object, to which we entrust certain tasks that we could accomplish without it. As Bruno Latour says on the subject of the automatic Groom (door-closer) replacing the human groom, almost all our objects are our representatives.

As an extension of this capability to replace us, the object-prosthesis performs actions we could not do without it.

Finally, we come to the accessory object, which isn't as necessary as the previous ones, rather an auxiliary that makes our lives easier.

I'm not a theorist, so I see things in a simple, or even simplistic, way. My definition – admittedly imperfect and partial – of an industrial design object is as follows: an object thought up by a human being to improve the lives of other human beings and to be manufactured industrially by machines. Anything that helps people live better interests me – that explains why I don't like decorative objects. A chair has to perform the function of a chair and if it's nice to look at, that's a plus. For me, the idea of an object being a prosthesis is essential, it should provide something extra or better to human beings. Objects that aren't the extension of a hand, foot, body or even a thought or that don't have anything to say don't interest me.

Coming back to the interface, are you interested in whether a telephone fits well in your hand or if the ergonomics of its keypad help or hinder its use?

Well, that goes without saying, it's compulsory. If it isn't suitable for human beings to use, then people won't adapt themselves to the object... or only briefly because it would be a commercial disaster. Objects have to be user-friendly or else they will be rejected en masse. Take telephony as an example – the first telephones were reserved for a small elite who had a line, you had to go through an operator, use both hands, etc. Technical progress automated that side of things and hid it from the general public (Standard, etc). Then the boss of AT&T (American Bell Telephone Company before its monopoly was broken up) asked Henry Dreyfuss to design a simpler, more convenient, more ergonomic phone. He went on to create the bakelite model which became a worldwide standard and lasted until the arrival of the cordless telephone.[5]

Dreyfuss telephone

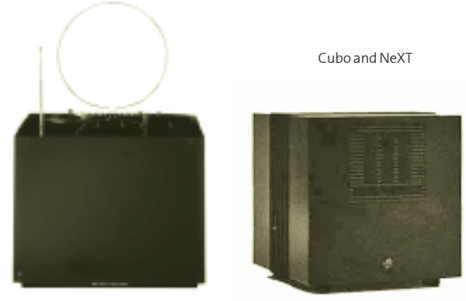
Again, my collection only contains the most important phones in the history of telephony, the latest addition is Apple's revolutionary iPhone.

In fact, you waver between your different selection criteria: landmarks, major social and cultural trends, shapes, styles and industrial aesthetic.

I own the very first Macintosh because it was revolutionary, and not that bad-looking. Its shape isn't particularly beautiful or original, but it was a real landmark and the first of a family of products. I haven't got a single Dell but I've collected all the iMacs because, in terms of their shape, each is more beautiful than the previous one – as for the functions, they stay the same. I own most of Apple's most interesting products, though I didn't keep the Laser writer 3, it was just a big block of grey plastic.

At the moment, I'm looking for a 'NeXT', the first computer designed by Steve Jobs in around 1985 after he left Apple. It's a black cube, along the same lines as the television that Marco Zanuso and Richard Sapper designed for Brionvega in 1969, the model ST 201 known as Black Cubo.

Cubo and NeXT

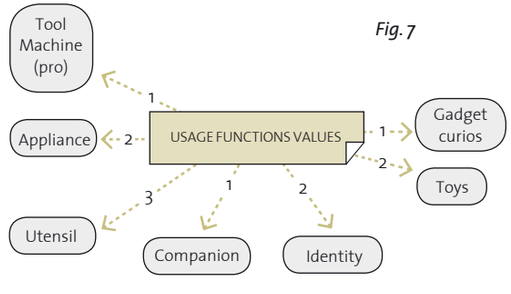


I'd like to display them side by side in an exhibition in order to show the similarity of their shapes and also their links with science fiction – this aspect is very important to me. Depending on the period, fashion, trends and fads, objects that are completely different can have similar shapes: an iron shaped like a microphone, which looks like a skyscraper, which is a copy of a lighter, etc. It's amazing how many objects resemble animals or human beings. I'd love to do an exhibition that highlights connections, parallels and similarities of shape, colours, etc. Along the same lines, I've compiled a list of objects inspired by galactic aesthetics. Since the thirties, and particularly since the 1950s, things that are 'modern' have generally made reference to space, rockets, planes and jets. Garden sprinklers in the shape of space rockets, flying saucer heaters, atomic juicers, etc. Creativity knows no bounds!

Let's move on to usage. On this level, the categories are more difficult to define because, here, pragmatic and semantic superpositions and intersections are more complex.

On one side, we've put 'tools' and 'machines'

Fig. 7



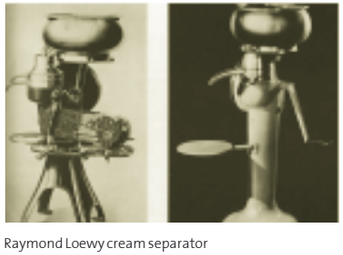
[5] On this subject, see : Jan Hadlaw (2009). The design contest : the function, form, and meaning of the Bell telephone, 1920-1939. In Darras, B. & Belkhamsa, S. (Dir.) (2009). Objets & Communication. MEI 30-31. Paris: L'Harmattan. P. 329-340.

followed by 'appliances' and 'utensils' that often belong to the kitchen. Next, we classified 'companion objects', such as watches, followed by 'objects of identity'. Owning an iPhone isn't the same thing as owning a Blackberry yet they can both be called companion objects.[6] *Circuit of culture theorists see the identity dimension of material culture as a crucial one. (See du Gay, 1997).*[7] *Everybody knows that displaying one's identity and personality sometimes prevails over the other dimensions of the object.*

The last remaining category is 'toys and games' which we have linked with 'gadgets and curios' and considered as recreational items.

In general, tools and machines only perform one function or action, a drill drills, a grinder grinds and a sander sands down. That's Philip Johnson's theory, the former Chief Curator of the Department of Architecture and Design at MOMA. He believes that an object is necessarily beautiful because it expresses its function. Think of Louis Sullivan's famous expression: 'Form ever follows function' (1886).[8] I don't entirely agree, though. Those Japanese scissors that are meant for pruning bonsais are magnificent, but they could easily have had a completely different shape, as do Chinese scissors that perform the same function.

When a tool or machine is manufactured, the only concerns are utilitarian, industrial and commercial – there's no social conscience involved. The object has to sand, cut or drill and the form doesn't matter. Design in tools and machines is purely about casings destined to hide the mechanical, electric and electronic parts. One of the ironies of industrial design is that the general point of it is to hide anything that really is industrial, perfect examples of that are Henry Dreyfuss's John Deere tractor and Raymond Loewy's cream separator.



Raymond Loewy cream separator

The main difference between machines (tools/industrial) and appliances (domestic/recreational) is that the latter were intended for mass consumption and therefore subject to the cut and thrust of the competitive market place. They had to stand out, their shapes and colours had to impress potential consumers. Competing with each other, the goal was to gain consumer market share, which for the last 50 years has been the motor of western economies. Few people, apart from the workers directly concerned, will become overcome with nostalgia when they come across a machine tool for stamping a metal plate or cutting tubes of steel. On the other hand, everyone remembers their very first car, the camera they received for their 15th birthday or their first walkman.

Walkman

Moulinex

Most of the objects in my collection are devices designed to be beneficial to people in their everyday lives, whilst the primary function of machines is to make those objects. Machine tools are meant to be used by a small number of operators who are in possession of the specific expertise required to power them. In contrast, the objects they make are destined to be used by as many people as possible, without any specialist knowledge or at least with knowledge that is quickly acquired with or without the instruction manual.

As for utensils, these are just little things that are meant to help out. Most people don't attach much importance to them, and yet they are often very beautiful – and above all, extremely useful. Mendini made a remarkable utensil for Alessi for scraping the last bit of jam out of the bottom of a jar. Kitchen utensils are mainly single-purpose and that's why when they become part of everyday language, they generally have a name that describes their function or the brand and not a generic one. For example, a peeler, to peel fruit and vegetables, an egg whisk, can opener or corkscrew.

Mendini spoon

Companion and identity objects...

You were right to put companion objects next to identity objects. Glasses, mobile phones, pens or watches are things we need all the time. They don't only accompany us, they position us socially too. I used a Montblanc pen for a long time, but now I have black Bic that says something about me just as well. I've been wearing the same Rolex for forty years, you don't have to wind it up or take it off, it's a constant companion. My iPhone says who I am too. I wear the same glasses that Le Corbusier wore, the ones made by Danilo Carraro in Venice. These are my day-to-day companions, I feel comfortable with them – they are like my slippers. The iPhone is the only mobile phone that doesn't have buttons smaller than my fingers and with numbers big enough for me to read without my glasses. Thank you, Jonathan Ive! He makes my life easier, that for me is the definition of design.

Some people collect companion objects, particularly things that once belonged to celebrities. Do you have items like this in your collection and, if so, why?

The fact that an object was owned by somebody famous doesn't make it more attractive to me. Rather the other way around – some of the object's aura will rub off on celebrity. Think of the Persol glasses that Steve McQueen wore in 'Le Mans', the same ones as Marcello Mastroianni in 'Divorce, Italian Style', or Paul Newman's Daytonna Rolex and Jackie Kennedy's Cartier Tank Américaine. These objects merely confirm that they had pretty good taste! I'm not a fetishist, I'm a collector!

And toys?

Even though toys are designed by humans to improve children's lives, I don't collect them because it's just never-ending. Mecano, electric trains, wooden blocks, teddy bears and Barbies are all indicative of an era and a lifestyle, but you have to set yourself limits. It's the same with promotional products.

However, I do collect electronic games because from a technical and design point of view (again, they are inseparable), they are incredible. However, there's progress to be made as far as the graphics are concerned. When I think of Pacman, DS consoles, Ping-Pong, etc. the screen interfaces are amazing.

In this case, you think that the interface contains so much intelligence that they also mark their era.

Those devices are incredible. In 10 years, my daughters will be delighted to see that I've kept their old games consoles. The Nintendo DS will be just like Proust's madeleine in bringing back great memories.

As for gadgets, they're just childish things whose only purpose is being given as pointless gifts. I don't collect them at all because for the most part they are useless, which is the ultimate insult in design, and they don't fit with my concept of industrial design.

Now we're coming to the final stage in our concept map and the last part of our interview.

We have already mentioned wear and tear, ageing and planned obsolescence, but there are other ways for an object to die. It could die a material, economic, social or symbolic death.

An object dies a material death when it breaks and economic death when it loses profitability, the very basis of a consumer society. Social death occurs when the object becomes commonplace and the identity values it embodied have become irrelevant or only have negative connotations.

When the object no longer has a purpose or loses its meaning we can refer to its symbolic death. As a sign, the material, economic and social object is therefore mortal as well.

Once the object has 'died' in one way or another, it can be disposed of, abandoned and destroyed, or it

6 See Umberto Eco's delightful comparison of a Mac and a PC in Eco, U. (1994). Comment voyager avec un saumon. Paris: Grasset.

7 Gay, P. ; Hall, S. et al. (1997). Doing Cultural Studies: The Story of the Sony Walkman. Culture, Media and Identities. London ; Thousand Oaks Calif.: Sage in association with The Open University.

8 Sullivan, H. L. (1886). The Tall Office Building Artistically Considered. Lippincott's Magazine, March 1896. http://academics.triton.edu/faculty/fheitzman/tallofficebuilding.html.

can be recycled as raw material or as parts – known as scrap – but also by changing owner if the wear and tear is essentially social.

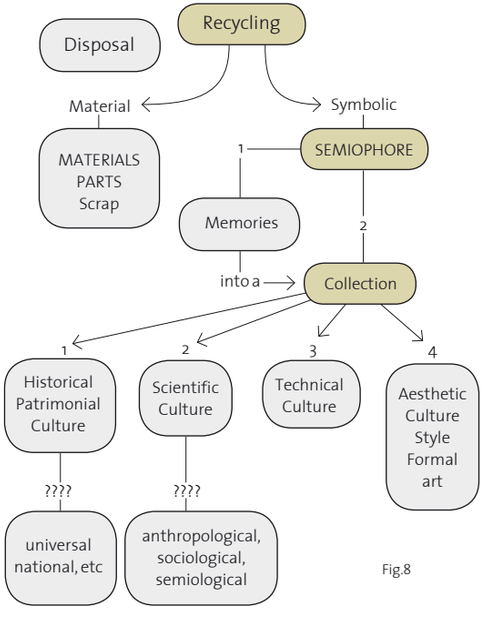


Fig.8

Finally, there is symbolic recycling. An object that is economically, socially or symbolically worn can find a new life as part of a collection. Krzysztof Pomian referred to objects that leave the active world by changing their signifying function as semiophores[9] *and it is with this status that they move to inhabit the sphere of memories and, sometimes, collections. However, once again, there are various types of collections, as is shown by this part of our map. Depending on the collection, different aspects of the object will be enhanced and become signifieds. Some collections are made up of historical or heritage items, as is true of all historical museums. Scientific, anthropological, ethnological and sociological collections are exhibited in museums of the same names, from science museums to ethnographic or social museums. Museums of technical culture – such as the Musée des Arts et Métiers in Paris – put the spotlight on technological breakthroughs. Finally there are museums that focus on the aesthetic dimension of objects, which highlights creators, styles, shapes and colours.*

Obviously, any given object could fit into any of these museums and, as a semiophore, would produce a particular type of sign, the interpretation of that sign being dependent on the context.[10]

9

I couldn't have put it better myself. Objects have a real life that spans conception, birth, professional activity, old age and death. Just like people, some will remain anonymous and others will go down in history. The objects that interest me are those that have accompanied people and helped them live better in their everyday lives. In the history of an object, it's when it falls into oblivion that a collector like me should buy it. It's then that we have sufficient perspective to be able to judge its aesthetic and practical qualities, along with its emotional weight. That's when its market value is at its lowest... Sadly, the same is true of a person at retirement age.

10

If your collection were to go to a museum, which one would it be?

It would be a museum of modern life, as we imagined it at the time (in whichever era). It would be a museum that would show how life has been since 1930 and the beginnings of the consumer society. It would be a museum of things that people thought they needed to make their lives better and more modern.

'If I don't have an iPhone or a washing machine, then my life's rubbish'. It would be a museum of the material landmarks of modernity, it would be a reflection of both our hopes and our failures.

At the most there are 20 groups of objects that are indispensable, the latest being the computer and its direct descendent, the smartphone.

The car changed our civilisation, the Boeing 707 changed our perspective of the world.[11]

11

Fridges, washing machines, hoovers, computers and mobile phones are all machines and appliances that affect people because they affect their lives.

Ask anybody in the street if their life has changed since scientists deciphered the genome and they'll tell you it hasn't changed a thing! What that person won't know is that it's thanks to that scientific discovery that his life has been saved ten times in the last ten years, which is far from being true of a fridge or computer.

The objects in my collection are there to tell the story of our lives. By following your map, we've seen that we have a very personal relationship with our objects, companions, social markers – also because they elicit memories.

By telling the story of people through objects, we can also tell the history of consumerism and production. Behind each object, there are hundreds of people who have either kept or lost their jobs. If the designer of an unbreakable Duralex glass does a good job, the company's employees will keep their jobs and be able to purchase other things. This unbreakable, stackable and comfortable-to-use glass has 'found its public' and therefore fulfills its economic and social function by contributing to the maintenance of industry, economy and society.

12

Ford said that the workers who made his cars had to be able to afford them.[12] Nowadays, a basic living wage can not buy everything that the media and advertising tell us is vital: that explains so much frustration and despondency.

Coming back to the museum, I like to say to people that 500 million dollars (not much for a country like ours) is enough to open a new Picasso or impressionist museum. It would only take a year to buy enough paintings in order to open a museum – in international auction houses there are signed works up for sale every day (not necessarily great ones, I admit). To open a Museum of Industrial Design, it would take forty years of getting up at 5am and tirelessly scouring flea markets, auction rooms and secondhand shops. As far as I know, there isn't another collection as diverse as mine, nor one that covers such a long period (1920-1980) – and if there is, I'd love to meet a collector who is as enthusiastic as I am.

How many of your own personal objects are part of the collection?

For the most part, they aren't my own belongings, they were purchased in flea markets, on the internet, in secondhand shops and at garage and yard sales in France, Belgium, Italy and the US. They went into the collection because they were all purchased by me alone, nothing to do with an expert or scholarly buyers commission. Consequently, I stand by all these objects. Either I've owned them or I've dreamt of owning them or I've got to know them through books.

Do you have objects that have made the round trip semiophore/object of use?

In the collection, there are some objects that used to belong to me, such as the Brionvega transistor I had when I was 20, the Téléavia television set designed by Roger Talon (1966) or my Macintoshes. But occasionally, I've bought things for the collection that have made a detour via my kitchen – why not?

I always explain to the people I work with on exhibitions that extreme care has to be taken with cleaning, lighting and scenography, the objects are like jewels. In order for the form or function to inspire emotion, the object has to be treated as something sacred.

Do you buy via online sites such as eBay?

I think I was one of the first in that field. The problem is the same thing happened with these sites as with garage sales: the first ones were incredibly rich, but it's no longer the case today. Thanks to eBay, every American emptied his attic and became an antiques dealer overnight – it was a fantastic period for collectors. But technology killed us off when eBay created its Completed Items service (later eBay Completed Listings), an online service that allowed sellers to evaluate an object before selling or let buyers first compare the price with that of an identical object sold within the previous 90 days. Every seller became an expert and now there aren't any bargains any more.

What is the most important skill or quality in an informed collector?

Knowledge, culture and the literature are what counts, whether in a dealer or a real collector. You have to know a lot. Knowing that Raymond Loewy once designed a fire extinguisher meant that I was able to spot one of the very rare examples still around and buy it at a low price. Knowledge and a very good visual memory make all the difference. I'm competing with obsessive collectors who only collect toasters, hoovers or things made out of ba-

[9] K. (1987). Collectionneurs, amateurs, curieux: Paris-Venise, XVIe - XIIIe siècles. Paris : Gallimard.

[10] See Danto, A. (1988). Artifact and Art. In Susan Vogel (ed.) Art/Artifact. Prestel Verlag and The Center for African Art. New York.

[11] The Boeing 707 – the world's first mass-produced plane – revolutionised commercial flights from the 1950s onwards.

[12] Georgano, GN (1985), Voiture: rapide et cru, 1886-1930, Londres: Grange-Universal, In 1914, a model T would cost a assembly-line worker four months salary. Quoted in Wikipedia. http://en.wikipedia.org/wiki/Assembly_line.

kelite and even though I'm looking for markers and shapes, we all want the same object in the end.

What happens to an object once it becomes part of your collection?

For the most part, these are objects that were produced in large quantities and are mostly made out of materials that are rather fragile or weakened by in-built obsolescence. So I only buy things that are in good condition and don't need repairing, unless it's an object I've been searching for years.

The objects are cleaned, but not restored. Then, they are then photographed, inventoried and documented by a team of design enthusiasts who look up licenses, patents, brands, factories, the names of the designers, types of products and, where necessary, the 'tunnel' or 'tunnels' into which they can go, i.e. orange, office furniture, gardening utensils, etc. All this information is then entered into a database.

What future do you foresee for your collection?

My dream would be to give these objects a place of their own.

For now, it's a dynamic, multi-directional and transversal collection of 8,000 objects that have made their mark on our lives, objects that jog our memories and trigger emotions.

It's a collection of tools, appliances and companions that have given us loyal service and aided us, that have brought us pleasure and maybe set us apart from others, but that we have quietly abandoned.

Although they have left their mark on our individual and collective memories, they need a place, accessible to the public, where all these experiences of modern life can be brought together, displayed and brought back to life.

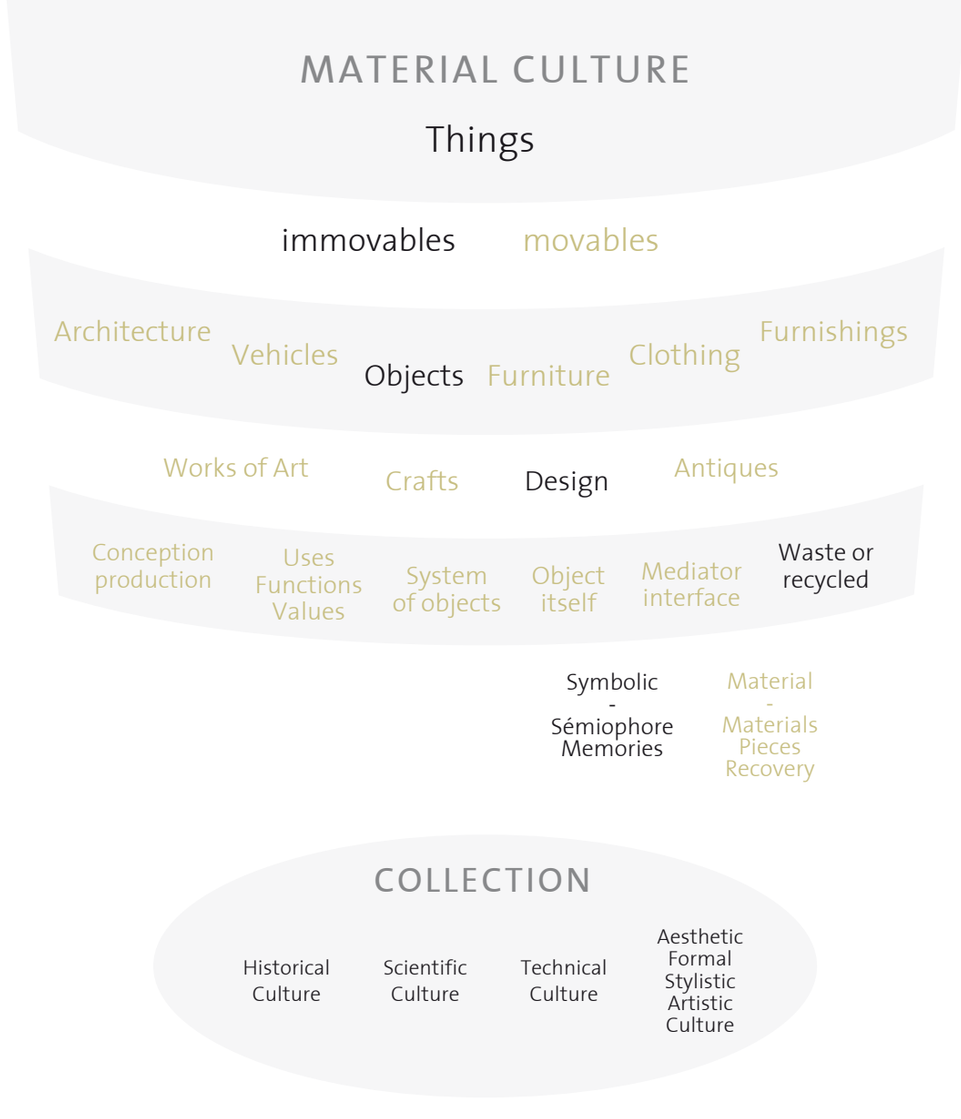
I'd call it a Museum of the History of the Future – a catalogue of technical innovations. You dreamt of it: mankind did it. A history of modern society as told by its objects.

Interview conducted on 15th September 2010

TRANSLATED FROM FRENCH BY
Alison Cullen-Plitt

A century of objects

J.B. Hebey
B. Darras



Phone - L.M Ericsson Cy - *Ericophon* - Hugo Blomberg / Ralph Lysell / Gësta Tharmes - 1956

Semiotics and Design: a Quantitative Meta Analysis.

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Abstract

The aim of a quantitative meta analysis is to survey the evolution of publications belonging to a specific field of research over time (and occasionally, space). This approach allowed us to observe the studies' geneses, define pioneers and chart the fluctuation of publications (diachronic approach), and therefore, research to date.

Quantitative meta analysis belongs to the broader field of statistic bibliometrics applied to scholarly publications (books, articles, symposium notes, theses, etc.). This measure of scholarly production is currently used not only to compare research protocols and results found in a variety of publications (in medical and pharmaceutical research, for example), but to evaluate scientists and their laboratories as well. It enables us to measure the work of an individual researcher, group or field in terms of volume in addition to visibility and influence (impact factor).

In this study, we have endeavoured to compile all relevant bibliographical references in order to measure, represent and compare scholarly interest. It encompasses both material artefacts, in particular those that are the result of industrial production, as well as images graphically produced for mass distribution.

Though the core of our corpus is made up of publications stemming from structural and pragmatic semiotics, we also chose to include work from fields that call upon and apply semiotic approaches such as Information and Communication Sciences, Media Studies, Visual Studies, Material Culture Studies and Design Product Studies

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Introduction

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Keyword Selection and Data Collection Methods

In order to proceed with our quantitative study, we compiled and treated the bibliometric data using different methods. The latter included the selection of key words and the analysis of bibliographical data stemming from our own research.

First, a list of keywords was established, these described our fields of study and referenced our research topic (graphic design/product design). Our search was widened to include related (semiotic) knowledge and theoretical domains, in addition to the broader subject of enquiry that is the construction, through objects and images, of meaning. We then drafted semantic charts that coordinated the concepts, their synonyms and terms associated with keywords initially drawn from the most prominent work in the field[1].

Most databases are multilingual; therefore in an effort to maximize our results our keywords were translated from French to English, and vice versa. Each keyword translation was then adjusted to ensure its relevance and compatibility with existing database nomenclature. This provided us access both the considerable corpus of English-language publications in the field of Design Studies in addition to the numerous significant French-language publications dedicated to semiotics.

Once a primary terminological consensus, describing our fields of study, was established, we began to search for documents in several libraries and used a number of search engines to canvass pre-selected databases. In addition, we studied and cross-referenced the bibliographies of key authors[2] with the results obtained from Google, Thomson Reuters and Elsevier, known to be the property of private operators. The bibliographies of thirty scholars featured in our own recent publication dedicated to product design[3] were also cross-referenced. Also, in order to complete our information we sought the counsel of several semioticians directly.[4]

[1] In order to draft these semantic maps were referenced thesauruses and etymological dictionaries.

[2] Vihma, Nadin, Bonsiepe, De Souza, Burdek, Krippendorff, Benoist, Bense, Moles, Proni, Deni, Fontanille, Zina ; for semiotics applied to product design. Buchanan, Margolin, Ehses, Heller, Hollis, Lupton, Moles, Meggs, Soar for semiotics applied to graphic design.

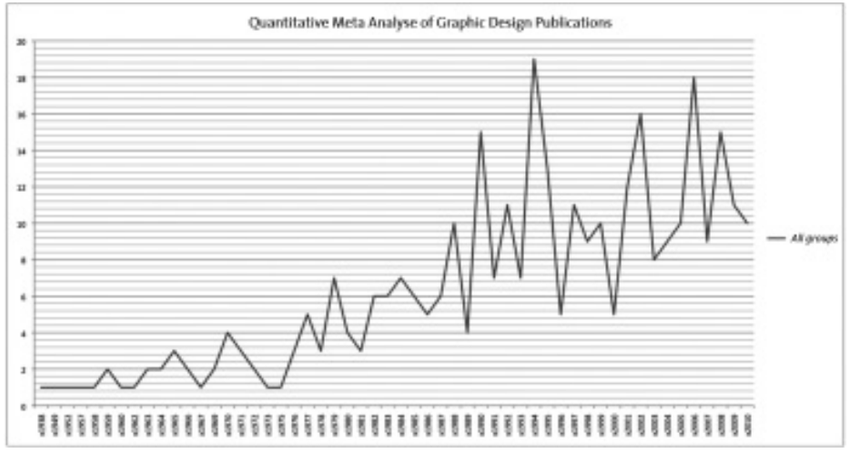
[3] Darras, B. & Belkhamsa, S. (Dir.) (2009). *Objets & Communication. MEI 30-31*. Paris: L'Harmattan.

[4] Alessandro Zinna, Jean Fisette, Nicole Everaert-Desmedt, Martin Lefebvre et Lucia Santaella Braga were consulted.

Technical Considerations

Following this initial phase of work, its results were gathered and sorted. Duplicates and publications assessed as too far removed from our subject were eliminated. Publications containing multiple articles, and therefore multiple authors, were referenced only once. Though it might be argued that this is detrimental to the diversity of our corpus, it was done in an effort to avoid generating falsified statistics. The remaining publications were deemed relevant to our subject of study.

Obviously, we cannot claim these bibliographies to be comprehensive. However, we feel they represent an accurate sample of existing publications. The latter were then sorted by date, and all those from a given year were added together to represent that year. The results were then charted to show the evolution of the number of publications over time. This diagram was in turn interpreted using the bibliographical information. The outcome is presented below.



We then organized each bibliography into three concentric levels whose core group contained publications we felt were closest to our topic of interest. As pertained to product design: work in the first group concerned the semiotics of product design, the second referred more broadly to the semiotics of objects and artefacts, and finally the third group included work in the fields of semiotics and material culture. The same general notion was applied to graphic design: the first group referred to the semiotics of graphic design, the second covered work pertaining to the semiotics of visual communication and the third expanded to included the semiotics of visual culture. Although our research allowed us to develop additional, further removed groups, it was our choice to concentrate on these first three levels.

Data Analysis

It seemed appropriate to approach such an imposing corpus of publications through an analysis of our obtained diachronic curve. We were able to note that the average number of publications appeared to progress in three stages or periods. The first spans from 1938 to 1982, covering the work of the field's pioneers: the initial convergence of semiotics and the visual image. The second began in 1982 and extended through the late 1990s: the dawn of Design Studies and the visual turn. Finally, the third period marked the beginning of the new century and runs until today; previously developed theories confront a design community facing the difficulty of defining its own field, the development of new media and the challenge of producing images destined to exist in a global context.

The Pioneers. 1938 to 1982

Publications from this period essentially revolve[5] around the third level of our concentric ranking system: the semiotics of visual culture[6]. Our corpus begins with Charles Morris' *Foundations of the theory of signs* (1938). Based on an interpretation of C.S. Peirce's theory[7], this work of reference develops the oft-criticized premise of a tripartite – syntactic, semantic and pragmatic – approach to semiotics. During the 1950s and 1960s, we witness each field's separate development and their occasional theoretical intersection. Graphic design and visual communication remain relatively unexplored topics in a debate that focuses on signs, images/art and communication.

A number of journals and magazines devoted to semiotics, communication and visual culture are born. The first issues of *Print* and *Design Quarterly*[8] are published in 1940 and 1946 respectively. Until 1953, the latter exists under the name *Everyday Art Quarterly*, accurately describing the perception of design at the time. The *Journal of Communication* and *Communication* print their first issues, respectively, in 1951 and 1961. In the 1960s, two key journals dedicated to semiotics appear: *Signs Systems Studies* is first produced in 1964 by Lotman's Tartu-Moscow school of semiotics, followed by *Semiotica* in 1969, whose foundation coincides with that of the International Association for Semiotic Studies – Association Internationale de Sémiotique (IASS-AIS). Other noteworthy research associations were established during the 1960s and 1970s, they include *ICOGRADA* in 1963 (International Council of Graphic Design Associations), the *Design Research Society* en 1966, whose journal Design Studies appears in 1979, and the *Design History Society* in 1977.

It seems interesting to note that, although the term *graphic design* exists and is occasionally used in the field from the beginning of the 1960s, scholars seem to favor other expressions such as *graphic communication, visual communication* or *communications design* (Krampen[9] 1965, Brockmann[10] 1971a, Ehses[11] 1977) until the end of the 1970s. The first to show a genuine interest in the theoretical aspect of graphic design are Ockerse, van Dijk and Poggenpohl in 1979[12], as demonstrated by their work in *Visible Language*.

Interest in our fields grows steadily through the second half of the 1970s; the average number of publications rose from 2 to 4 per year. The fluctuations inherent to this first "growth spurt" reach a level of stability around 1982, thereby marking the end of the domains' beginnings.

The Dawn of Design Studies 1982-1999

This second period sees a significant rise in publications[13], particularly in the field of design. *Design Issues*, the first academic journal dedicated to the design history, theory and criticism, is established in 1984. Graphic design, and design as a whole, confirms its significance as a subject of study.

In 1983, Meggs publishes the first comprehensive historical survey of graphic design *A History of Graphic Design*[14]. Though it is rapidly (and continues to be) considered a work of reference in the field, it also sparks an ongoing debate surrounding the selection criteria of "historically relevant" work[15]. This debate is symptomatic of the ever-growing divide between design theorists and practitioners. Some of the latter question the very need for theory in a field where many struggle to reconcile a creative process with a commercial purpose (Rand 1985, 1992 et Scher 1992)[16]. Frascara is the first to plead for user-centred design in 1988, criticizing industry canons responsible for design work devoid of its principal function: conveying a message to an audience.

During this period we noted two distinct peaks in production: in 1990 and then in 1994. Leading up each peak a lull was observed. This would appear consistent with the publications' necessary preparation time. In 1990, *Design Issues* published a special issue entitled *Educating the Designer*[17], in which a number of scholars underscore the need for a body of knowledge to support and reinforce designers' technical skills. In 1994, the journal renewed its interest in design education but shifted its focus more specifically towards graphic design. This same year, Andrew Blauvelt, as editor of *Visible Language*, dedicated two issues to a critical history of graphic design.

The last two decades of the 20th century witnessed the emergence of two directions in design writing: academic theory, which expanded to include visual communication[18], and critical essays[19]. The former seeks to apply an existing theoretical framework, semiotics for example, to offer a more pertinent analysis of design production. The latter tends to generate more concise critical texts most often the fruit of personal reflexion.

Graphic Design: Theory and Stakes. 2000 to Present.

During this third and final period we continue to observe an increase in publications[20], mostly within the first two levels of our concentric ranking system. The practice of graphic design underwent a number of important changes in the last decades of the 20th century, not the least of which was the shift from manual to digital tools. Skills and equipment that once required significant training were replaced with more easily accessible computers and software. The design community began to grow conscious of the impact these new conditions implied for the future of the profession. Two themes emerged in design publications. The first is a plea for the continued development of theory in the field, and more importantly its support and adoption by the most recalcitrant practitioners and educators. Swanson (2000), Buchanan (2001), Findeli (2001), Roxburgh (2001), Soar (2001, 2002a, 2002b), Storkerson (2003, 2006a, 2006b) and Noble (2005) amongst others, affirm that without a solid theoretical foundation the profession, the defining qualities of its practice will become more difficult to defend. The second theme focuses on the debate surrounding the notion of designers as authors. There are, on one side, those who support the concept, arguing that authorship leads to a more meaningful approach to design, underscoring the value of "good" design. On the other hand, are its opponents, who criticize yet another ill-advised attempt to encourage designers to view themselves as artists; thereby accentuating the profession's existing tendency towards a type of insular elitism.

Both peaks in production during this period, in 2002 and then 2006, focus on the aforementioned topics and may be linked to the 2000 release of two manifests: ICOGRADA's *Design Education Manifesto* (see note) and the *First Things First 2000*[21]. The 2006 peak sees more publications concerning the second theme, design authorship, and as interest surrounding the notion grows, so does the number of sceptics and detractors. We also observed a reinforced link between graphic design and communication, and an increase in literature dedicated to this subject.

[5] Of 62 publications compiled over a period of 44 years, 37 belong to the 3rd level (semiotics of visual culture), 14 belong to the 2nd level (semiotics of visual communication) and 12 belong to the 1st level (semiotics of graphic design). We noted an average of 2,38 publications per year during this period.

[6] Although its application could be deemed retroactive, this term is used intentionally. Visual culture only trully appeared as a discipline or field of research during the 1980s. Our aim here is to use this term to bring together a variety of topics of study, all of which might be described as images.

[7] Despite their lasting impact on the study of visual semiotics, a number of specialists feel Morris' theories were the result of a flawed retation of Peirce's work.

[8] Published by the Walker Art Center in Minneapolis until 1993, 3 issues in particular were dedicated to graphic design and/or semiotics: n°31 *Book Design* (1954), n° 62 *Signs and symbols* (1965) et n°123 *A Paul Rand Miscellany* (1984).[9] Krampen, M. 1965. Signs and symbols in graphic communication in *Design Quarterly 62*. Minneapolis: Walker Art Institute.

[10] Brockmann, JM. 1971a. *A History of Visual Communication*. Teuten: Niggli.

[11] Ehses, H. 1977. A semiotic approach to communication design in *Canadian Journal of Research in Semiotics* 4 (3).

[12] Ockerse, T, van Dijk, H. 1979. Semiotics and Graphic Design Education in *Visible Language* 8 (4).
Poggenpohl, SH. 1979. Graphic design a practice in search of theory in *Visible Language* 8 (4).

[13] Of 151 publications surveyed, 45 belong to our 3rd level, 51 to our 2nd et 55 to our 1st. We noted an average of 8,88 publications per year.

[14] Meggs, P. 1983. *A History of Graphic Design*. NY: Van Nostrand Rheinhold.

[15] Nooney 2006, Eskilson 2007, Drucker 2009 and Triggs 2009 question Meggs' and Hollis' choices in their respective books dedicated to the history of graphic design. The former accuse the latter of ignoring work deemed either too ordinary or embarassing to the profession (Nooney uses the swastika as an example) and focusing solely on work consistent with the accepted aesthetic canon.

[16] Scher, P. 1986 Back to Show and Tell. *In Design Culture an Anthology of Writing From the AIGA Journal of Graphic Design*. Dir. Heller, S and Finamore, M. New York: Allsworth Press 1997.
Rand, P. 1992. Confusion and Chaos: The Seduction of Contemporary Graphic Design. *Design Culture: An Anthology of Writing From the AIGA Journal of Graphic Design*. Dir. Heller, S and Finamore, M. New York: Allworth, 1997. 119-24.
---. Design, Form and Chaos. New Haven: Yale UP, 1993
---. A Designer's Art. New Haven: Yale UP, 1985

[17] Educating the Designer. *Design Issues* 7 (1). 1990.

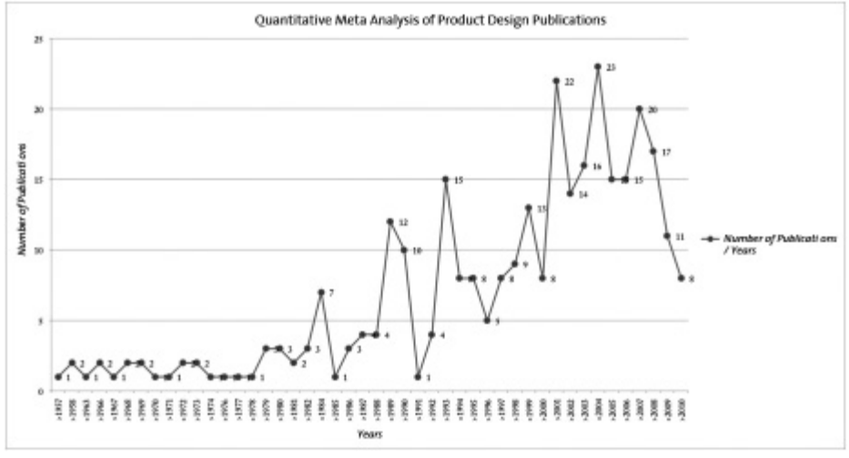
[18] See Buchanan, Ehses, Frascara, Lupton, Margolin, Miller, Moriarty, Swanson, Quinton.

[19] See, amongst others, Bierut, Drenttel, Helfand, Heller, Holland and Poynor.

[20] EOf 123 publications surveyed, 28 belong to our 3rd level, 35 to our 2nd level and 60 to the 1st level. We observed an average of 11,18 publications per year.

[21] First written by Ken Garland in 1964, it was revisited in 1999 by *AdBusters* and signed by close to thirty known names in the design profession. First Things First 2000. *Looking Closer 4: Critical Writings on Graphic Design*. Dir. Bierut, M, Drenttel, W, and Heller, S. New York: Allworth, 2002. 5-6.

Quantitative Meta Analysis of Product Design Publications



As indicated in the previous analysis, the corpus of publications dedicated to the overlap between semiotics and product design spans from 1936 to the present. The comparison of the obtained diachronic curves demonstrates the similar evolutions of both fields (graphic design and product design). Therefore, our chronological approaches and the period breakdown are identical. In both analyses, the contextual prism of *Design Studies* and semiotics was crucial in our interpretation of the quantitative data.

22 The first period, the "Pioneer"[22] group, includes work published from 1936 through 1982. The second period, which encompasses the emergence of *Design Studies*, runs from 1982 to 2000. It appears important to note that the "Product Semantic" is a paradigm shift specific to Product design, which occurred during this same period. Since this turn, design has been described as both a mediator and a motor of today's global economy. Drawing together work published from 2000 through 2010, the last period seems to confirm an increasing interest in applying semiotic theory to product design; as illustrated by the ongoing development of research in computer sciences and artificial intelligence, information sciences, communication sciences, HCI (*Human-Computer Interaction*)[23] and, not least of all, design. Though the number of publications appears to drop off after 2008, we anticipate that this is a result of the time required for a recently published article or book to become referenced in databases and libraries.

Pioneers. 1936-1982

As early as 1936, in his "*Costume as sign*", Petr Bogatyrev[24] asserts that clothing can be considered both an object and a sign. Susann Vihma[25] accredits him with the initiative to study objects as signs. Two years later, Charles Morris (1938), initially invited to the New Bauhaus by Laszlo Moholy-Nagy, elaborated a behaviorist approach to semiotics greatly inspired by C. S. Peirce.[26] During the 1960s, the founding of the ULM school allowed Tomas Maldonaldo (1961, 1967), Gui Bonsiepe (1963), Abra-

[22] Several publications, such as *Production as représentations : a semiotic and aesthetic study of design product* (Vihma 1995), The semantic turn : a new foundation for design (Krippendorff 2006) et most recently *Objet et Communication* (dir. Darras & Belkhamsa 2009) have identified and validated the existence of this group.

[23] We intentionally chose to cast aside most of the literature in this field and focused solely on that which dealt with *Computational Semiotic*. A selection of Nadin and Maier work was therefore included.

[24] Petr Bogatyrev is a Russian ethnographer who was a member of Russia's structuralist movement. Influenced by Saussure, his projects focused on the construction of meaning through cultural objects, in particular folk costumes. He belonged to the Moscow linguistic Circle. See Velingerova.M, D. (2010). The Geopolitics of Signs. in *The Semiotic Review of Books*. Editorial, .Volume 2 (3). : viewed on 30-11-2010. http: //projects.chass.utoronto.ca/semiotics/srb/2-3edit.html

[25] See Vihma, S. (1995). *Products as Representations. A semiotic and aesthetic study of design products* (diss). Publication Series of the University of Art and Design Helsinki UIAH, A 14.

[26] (Vihma 1995, Poisson 2001, Burdek 2005).

Semiotics through design product and graphic design

K. Brunel Lafargue
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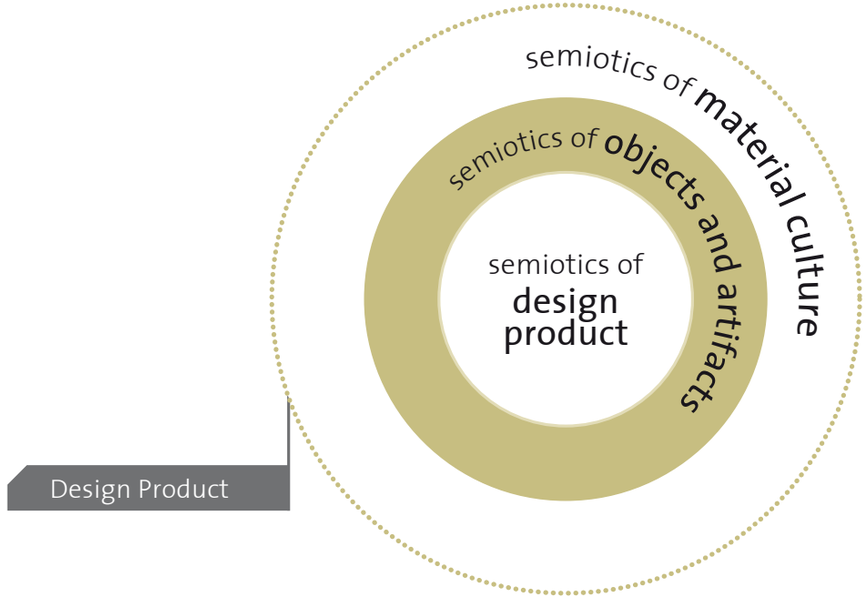

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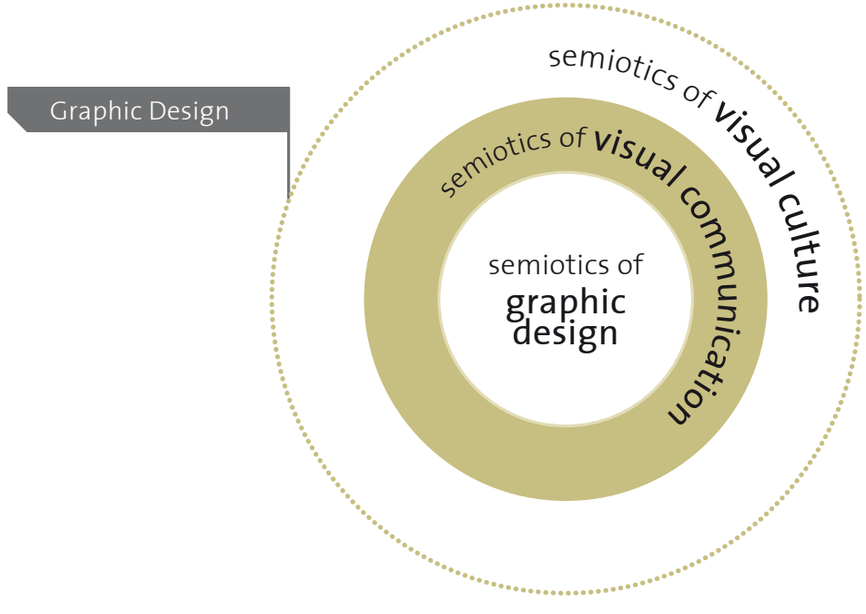

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ham Moles (1969, 1972), Max Bense (1970, 1971) and Klauss Krippendorff (1961) to develop studies applying semiotics to design. Their work appeared in the *Hochschule für Gestaltung*[27] journal and in *Formdiskurs*[28]. Around this time, Barthes' *Mythologies* (1957)[29] and Eco's *Struture Asente* (1968, 1980) were viewed by most specialists as having established the foundations for the semiotics of objects. Although they are not, in the strictest sense, semioticians, the works of Gilbert Simondon (1958), Baudrillard (1968) and Herbert Simon (1969, 1982) are also considered crucial and highly influential in the field[30].

It seems of interest to note that, over this period, the field of semiotics expanded rapidly. Once merely deemed as a sub-discipline of linguistics, it quickly evolved into a cultural analysis tool in its own right. This can be credited to the Tartu Moscow School[31], to whom we owe the shift towards cultural semiotics. Influenced by Russian formalism, their approach would be best described as post-structuralist. Yuri Lotman, founder in 1964 of Signs Systems Studies or The International Journal of Semiotics and Sign process in Culture and Nature, promoted the school's success by developing the concept of the "semiosphere". In 1969, with the help of Greimas, Jakobson, Kristeva, Benveniste, Martinet, Barthes, Eco et A. Sebeok, Lotman contributed to the founding of the International Association for Semiotic Studies (IASS)[32] and its official journal Semiotica.

In the 1970s, a second generation followed in this initial core group of founders' footsteps: Krippendorff (1961) a former student of Rittel and Butter at the ULM school, Vihma (1966) in Helsinki[33], de Koenig (1970) in Italy, Baïbourin (1971) from the Moscow School and Abend (1973). Greatly influenced by the pioneers, they contributed to their work's synthesis via its incorporation into the broader fields of Design Studies and communication research. In 1974, Martin Krampen[34], another former ULM student, posited a separate entity for material objects within semiotic studies during his participation in the International Association for Semiotic Studies' (IASS) first conference in Milan under Seymour, Eco et Klinkenberg's[35] leadership. Krampen's work, associated with that of Argest & Gandelsona (1973), Lefebvre (1974) and Broadbent (1978), has contributed to extending the scope of material culture's semiotic study towards architecture, urbanism and space. In 1980[36], the economic characteristic of Le Bœuf's work associated product semiotics with the field of Management Science. In 1981, Csikszentmihalyi & Rochberg-Halton demonstrated how objects incorporate social models, which established their importance as actors in the socialization process. They also proved the value of the semiotics of objects in social science, psychology and anthropology studies.

The SemanticTurn: "The Symbolic Quality of Product" 1982-1999

This second period includes publications from members of the aforementioned " second generation" but further widens the scope to admit work from fields as far removed as Psychology (Norman), Computer Science, Human Computer Interaction (Nadin, Aubert & Hetzel, Clarke, De Souza, French & Smith), Marketing and Management (Holbrook & Hirschman, Kramasien, Reinmöller). During this period we noted the appearance of several journals including Design Studies (first published by Elsevier in 1979), Design Issues (first published by MIT Press in 1984) and DESIGN/RECHERCHE (first published in 1993 by l'Institut Français du Design).

[27] In 1958, they established the ULM journal, otherwise known as the Journal of the Hochschule für Gestaltung which was published every trimester from 1958–1968 by the Hochschule für Gestaltung (HfG). This journal aimed to "provide a detailed account of the theoretical, rational and practical studies of one of Europe's most influencial conceptual schools since the Bauhaus". http: //www.thisisdisplay.org/collection/Journal_of_the_Hochschule_fur_Gestaltung_ulm_10_11/

[28] http: //www.form.de/w3fa.php?nodeId=116&lang=1&id=1085&ausgabe=1

[29] Zinna questions the legitimacy of this pioneer role by pointing out that Barthes work « first with objets in Mythologies and later in Système de la mode, is more of an analysis of the verbal language surrounding the clothes than a discussion of the meaning transmitted by the clothes themselves.» Zinna, A. (2009). A quel point en sommes-nous avec la sémiotique de l'objet ? In : Darras, B. & Belkhamsa, S. (2009). *Objets et Communication*. Paris, L'Harmattan/ MEI 30-31 400 pages.

[30] Of 151 publications surveyed, 45 belong to our 3rd level, 51 to our 2nd et 55 to our 1st. We noted an average of 8,88 publications per year.

[31] In 1990, the Tartu Moscow Semiotics School becomes the University of Tartu led by Kull, Torop, Mihail Lotman.

[32] Widely recognized as the most important organization of semioticians in the world. http: //filserver.arthist.lu.se/kultsem/AIS/IASS/

[33] The semiotic Society of Finland was established in 1970.http: //www.isisemiotics.fi/

[34] Krampen (1979). Chatman, Seymour, Umberto Eco & Jean-Marie Klinkenberg (eds.). (1979). *A Semiotic Landscape – Panorama Sémiotique Proceedings of the First* Congress of the International Association for Semiotic Studies, Milan June 1974 / Notes from the International Association for Semiotic Studies' first conference, Milan juin 1974. In ; http: //isbn2book.com/90-279-7928-6/a_semiotic_landscape__panorama_semiotique_proceedings_of_the_first_congress_of_the_international_association_for_semiotic_studies_milan_june_1974/

[35] Klinkenberg and Goran Sonesson are at the head of the international association of visual semiotic (1989)

[36] These dates are represented in the 1979 peak.

Within the pages of these journals, authors such as Buchanan, Margolin, Bernard, Rheifrank, Butter, Burdek, Krippendorff, Quarante, Lebahar and de Noblet built a theoretical framework for design and established their present reputation as the founders of Design Studies. However, it is undoubtedly Krippendorff & Butter's (1984) concept of the symbolic quality of products that marked the most significant turning point in design publications.

The second corpus opens with Krippendorff and Butter's (1984) notable article "Product Semantics : Exploring the symbolic qualities of form." Published in Innovation, the International Designers Society of America's (IDSA) journal, the article establishes a new direction in the study of product semiotics. Over the summer of this same year, the IDSA organises a workshop at the Cranbrook Academy of Art led by Butter, Friedlander, McCoy, Rheinfrank et Krippendorff. Because its lineage is neither saussurean nor peircian[37], what is henceforth known as the product semantic marks a turning point in both Design Studies and semiotics. This workshop was followed by "the first European workshop on Product Semantics" organized by the University of Industrial Arts in Helsinki (UIAH). Within the same establishment more conferences followed based on this model: in 1989, Seppo Väkevä organised a conference on the theme Product Semantics and in 1990, Susann Vihma presented the Symposium on Design Research and Semiotics entitled: the Semantic Visions.

From 1992 to 1995, a number of workshops took place in Colombia, Germany, Switzerland, Taïwan, Japan, Korea and the USA. Several universities began to include semantics in their curriculum and it was featured in a selection of design books. In 1993, based on the premise that the study of its meaning increased an industrial product's value, semantic research grew into marketing research. In 1994, the notion of emotion gained importance in semantics. The conference that took place in Helsinki referenced this idea and bore the title "Pleasure or Responsibility." Numerous publications and international conferences followed. Emotion, communication, the media and the economy evolved into topics whose contribution to meaning making in design became noteworthy. During this same period, it seems important to note the proliferation of work in France in the field of semiotics including that of Floch 1990, 1993, Bordon 1991, Fontanille & Zilberberg 1995, 1999 at the Université de Limoges. The same applied to Italy, as demonstrated by Deni[38] 1999, Ferraresi 1999, Bonfantini, 1999 ou Proni.

1999-2010 – Design Studies the Epistemological Foundation

Though a there is a continued tendency towards lulls, followed by peaks, in publications, at least two reasons made this last period seems more difficult to describe. First, as shown by the diachronic curve, the number of publications doubled in a short period of time, rendering it impossible to distinguish between main research trends. Second, Design Studies have made significant headway on both a theoretical and a practical level. Several awards now exist to reward excellence in design, in addition to the quality seals of approval that were established for products, services and experiences whose conceptual approach resembles that of design[39]. In response to the growing complexity of design objectives, several institutions and associations have created new events or organisations such as the Design Research Society's Cumulus (starting in 2002) or even the International Society of Design Research (IASDR).

Research in semiotics applied to product design continues to generate interest. In 2000, the University of Limoges opened its Centre de Recherches Sémiotiques (CeReS) and in 2001, the Association Française de Sémiotique (AFS) organised Sémio 2001. In 2003, the first Nordcode seminar, Semantic and aesthetic functions in design, was held in Göteborg. The same year the 6th Asian Design International Conference " Integration of Knowledge, Kansei, and Industrial Power " took place in Japan. It was organised by the Japanese Society for the Science of Design and Japan Society of Kansei Engineering, and confirmed growing importance of Asian countries in design research, particularly that of The Asian Society for the Science of Design. In 2004, Vihma launched the SeFun project with the main objective of observing how products of industrial design communicate, in a variety of contexts, with the user. Also in 2005, the first European workshop on Design & Semantic of Form and Movement (DeSForm) took place, drawing together scholars whose work fo-

[37] as it was developped by Morris and Maldonaldo in the 1930s

[38] Doctoral thesis directed by Umberto Eco and U. Volli. University of Boulogne.

[39] This approach takes into consideration eco-conception, for example, as well as co-creation, it accounts for the complexity of industrial design and its postmodern meaning.

cuses on the conception and semantic of forms and movement. This annual conference seeks to evaluate research results, identify possible problems and define new areas of investigation. In an effort to perpetuate the tradition of the previous AISS founded in Bologna in 1972 during an international linguistic colloquium, the Italian association of semiotic study was established in 2008 to promote and further the development of research in semiotics. In 2009, we directed an issue of MEI, a reputable information and communication science journal. Entitled Objets et Communication, this edition brought together close to thirty contributions whose focus was on the semiotics of product design.

Mini Conclusion

As demonstrated by the Design Research Society's conference in 2010, Design Studies can be broken down, from a theoretical standpoint, into subdivisions. In breaking with traditional semiotic theory such as applied linguistics, structuralist and post-structuralist semiology, the semiotics of objects has evolved towards product semantics in its attempt to take into consideration both the economic and technological aspects of objects. The semantic turn severs previous ties with ethnology and anthropology, drawing the study of objects back towards product research to include concerns linked to technological advances and new media. The notion of meaning making, which implies a variety of human factors (emotions, sensory, language, etc.) has become crucial in product research.

"Litterature Survey of Semantic features in design product is intricate. However, semantic issues awakened vast interest among designers" Vihma (1995).

Conclusion

Our initial project was to describe, via two quantitative studies, the chronological evolution of publications in the fields of semiotics applied to graphic design and product design. We wish to conclude this article with a short comparative analysis of both fields.

The meta analyses show a historical link between the evolutions our fields and the development of semiotic theory in the 1930s followed by that of design in the 1960s. This fundamental axis allowed us to determine three shared characteristics we shall endeavour to discuss as comprehensively and neutrally as possible. Although ours is not the first literature review, we hope to offer a constructive critique instead of yet another quantitative comparison of both corpora.

First, we noted that the corpus' breakdown into three levels or periods proved significant in both graphic design and product design. As previously established, the first period is that of the pioneers, during which semiotics developed as both a theory and an analytic tool for the social sciences. The second period highlights design's ongoing contribution to economic growth and its role as mediator of new technologies. The third and final period is the technological turning point for both design disciplines. The social science and engineering heritage of each field becomes manifest, as does its influence on their ability to create meaning.

Second, in both graphic and product design, we noted that the last decade represents an important turning point. Publications from the first two periods tend to overlap both fields, referencing the same authors. During the last period a separation occurs, most likely explained by the level of complexity each field has achieved and multiplication of publication media.

The third and final shared characteristic involves the multiple historical narratives in the semiotics of design and, more broadly, design in general. Despite a common core that most authors agree upon (Vihma 1990, 1995 ; Krippendorff 1984, 1992, 2006 ; Burdeck 1995, Fontanille 2009), our comparative study revealed that each selected reference meant to build and validate a quantitative meta analysis delivered slightly different histories of the encounter between semiotics and design. It therefore appears that historiographies written up until now were established upon five axes:

- each author's personal experience
- national origin (Germany, Switzerland, USA).
- Philosophical and epistemological allegiances (structuralist, pragmatic, etc)
- Initial training (architect, designer, anthropologist, semiologist)
- And finally, their domain of interest (marketing, artificial intelligence, communication, psychology).

Therefore, certain authors and texts were favoured at the expense of historical "truth". We suppose this might be due to the relative youth (70 years) of both semiotics applied to design and design in general.

In this article, we have sought to present the most comprehensive view possible, equally treating contributions to meaning making in design. A finer, more in depth analysis is obviously possible and we hope to dedicate future publications to a qualitative meta analysis.

TRANSLATED FROM FRENCH BY
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http: //www.larevuedudesign.com/2009/10/21/la-contribution-francaise-a-la-creation-d'une-organisation-internationale-du-design-apres-la-deuxieme-guerre-mondiale/
http: //www.acfas.ca/congres/2010/pages/78_congres.html
http: //www.unilim.fr/theses/2008/lettres/2008limo2017/html/index-frames.html
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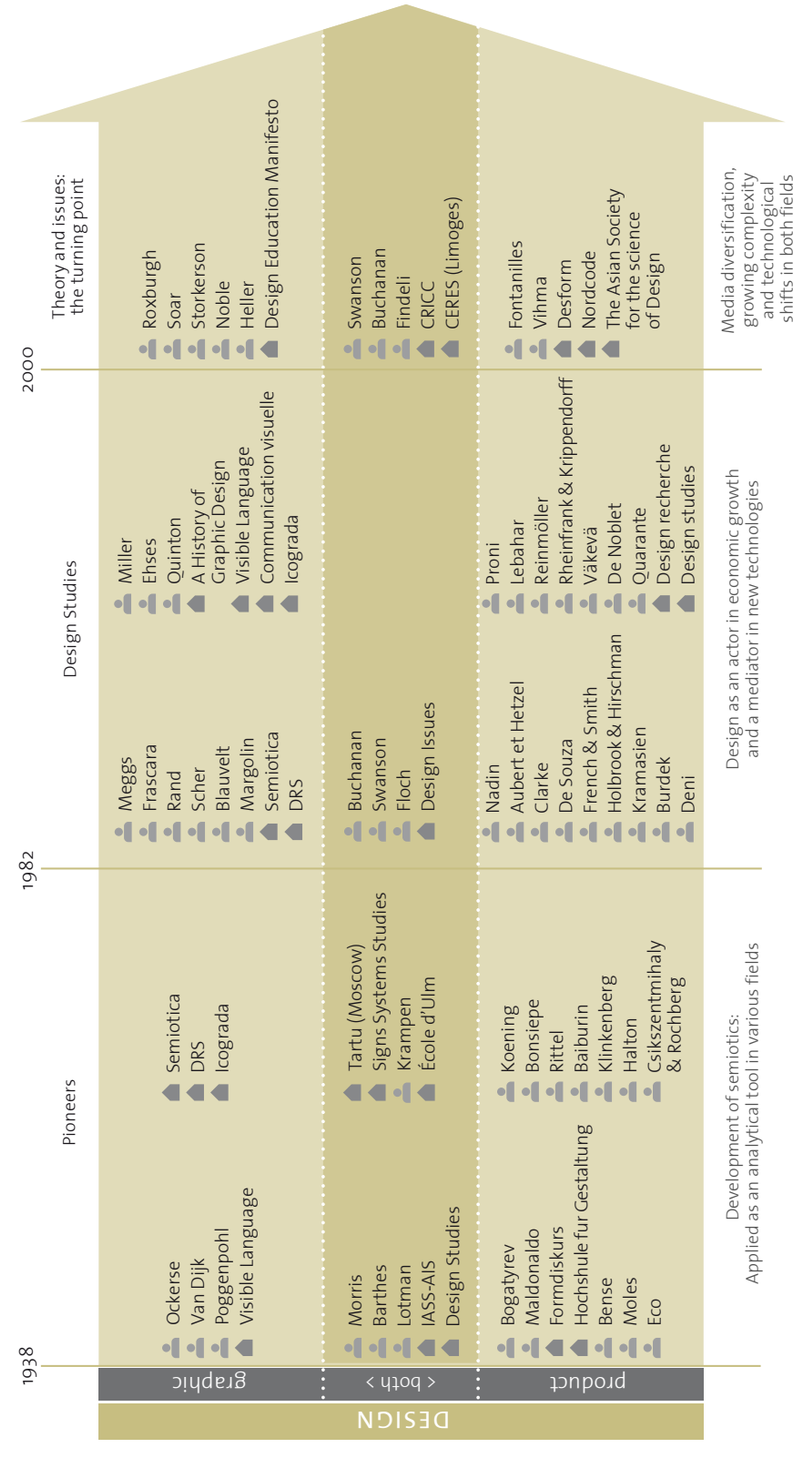

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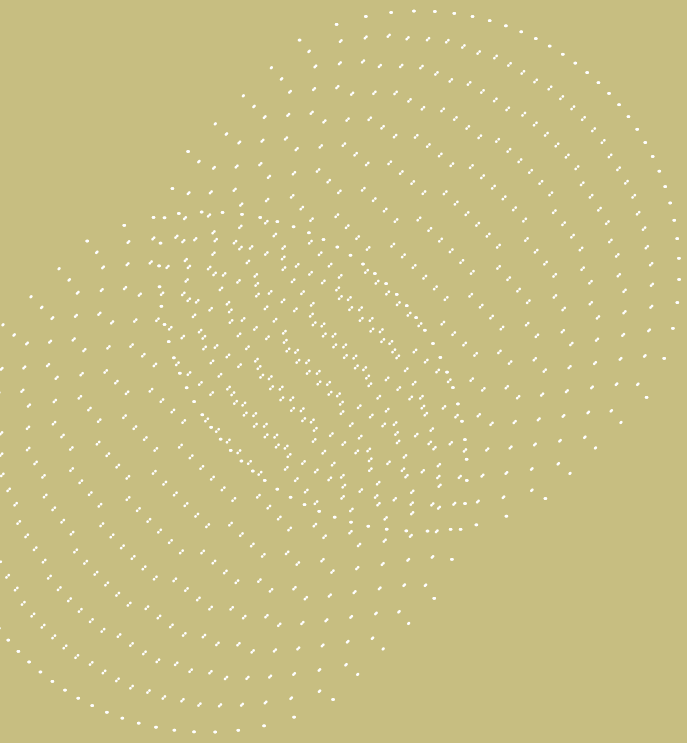

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