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Design: An Un-Disciplined Discipline Out of the Borders

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Design: An Un-Disciplined Discipline Out of the Borders

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Abstract: Design, as an approach to action, is always placing itself within the track of innovation, between material and immaterial matters, product and service. Nevertheless, Design was never built from a clear and defined field, as a starting point. Rather its framing as a discipline has been historicized and "hardened" over years, in parallel with several disciplines. Through this ongoing evolution we can see a clearly and recognizably a "disciplined" theoretical apparatus.

Keywords: Design, Discipline, Innovation, Materiality, Theory, Practice

Introduction

The field of Design always had the power to build relations with technology, materials, but also innovation, social practices and therefore its cultural evidence: then its specific complexity constantly implied a spread net of theoretical and methodological contaminations flanking design thinking through time. If innovation has to face the unknown, often hybridizing different factors and making connections which seem unlikely, design challenges the disciplines opening structures and blurring the recognized borders of knowledge, often falling beyond the recognized conventions.

Moreover, the historical epistemological shift from the Fordist-Taylorist paradigm of mass production into the post-industrial development draws a new economic and productive geography: as the industry of the chain assembly leaves space to new forms of labour and production along the so-called knowledge society and the rise of new technologies, design research focuses the new scenarios rising for the creative professions and the chances for the experimentation of new critical keys beside market (Castells, 1996; Gorz, 2003).

Design seems to look outside itself without recognizing any "hard" and "pure" disciplinary border, while always developing a *mestizo* way of thinking and a hybrid looking to reality. This is for its proper character of being permanently "in-between", while processing knowledge and techniques from other disciplines, taking them into everyday life and translating into scenarios, communication, real and virtual artifacts, rather than elaborating its own principles (Imbesi, 2009, 2010).

Then, along with the end of the "grand narratives" (Lyotard, 1979), as we're living an era of redefinition of the meaning of 'knowledge', at the same time we state the collapsing of the categories, the scales, the fields: can we consider the project of a Nike shoe an industrial product, communication or fashion? Moreover, can we consider a website as a big or a small scale?

From a didactic and research experience started at Sapienza University of Rome (Italy), and now developed at Carleton University in Ottawa (Canada), the paper here outlined is a theoretical contribution elaborated also through case studies and an interdisciplinary net of

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references, such as anthropology, social sciences, cultural studies, semiotic, to witness the accomplishment of design as an academic discipline, while sketching its complex character in contemporary post-industrial societies facing knowledge, as well as scientific concepts and technological processes.

As Design happens to be a device producing knowledge while giving an interpretation to reality and being a strategic engine for innovation, the paper is a contribution to the debate while raising some question: is Design condemned to be a discipline without any given field? If we should consider it within an open structure, what is the kind of geometric organization which draws connecting further fields? What are the new scenarios of design and production along with the occurrence of the post-industrial society of knowledge? What are its epistemological assumptions?

Synopsis

As Design happens to be a device producing knowledge while giving an interpretation to reality and being a strategic engine for transformation and innovation, the paper is a contribution to the debate while rising some question: is Design condemned to be a discipline without any given field? If we should consider it as an open structure, what is the kind of geometric organization which draws connecting further fields? What are the new scenarios of design and production along with the occurrence of the post-industrial society of knowledge? What are its epistemological assumptions?

From a didactic and research experience started at Sapienza University of Rome (Italy), and now developed at Carleton University in Ottawa (Canada), the paper is a theoretical contribution developed through an interdisciplinary net of references, such as anthropology, social sciences, cultural studies, semiotic, to witness the accomplishment of design as an academic discipline, while sketching its complex character in contemporary post-industrial societies facing knowledge, as well as scientific concepts and technological processes.

Challenging the Borders of Knowledge

Often proliferating in far territories and always placing itself within the track of innovation, between material and immaterial matters, product and service, design has never built a clear and defined field, to be historicized and "hardened" during years, as on the contrary several disciplines did along the time, while acquiring a better recognized and "disciplined" theoretical apparatus.

Design always had the power to build relations with technology, materials, but also innovation, social practices and therefore its cultural evidence: then its specific complexity constantly implied a spread net of theoretical and methodological contaminations flanking design thinking through time. If innovation has to face the unknown, often hybridizing different factors and making connections which seem unlikely, design challenges the disciplines opening structures and blurring the recognized borders of knowledge, often falling beyond the conventions.

Moreover, the historical epistemological shift from the Fordist-Taylorist paradigm of mass production into the post-industrial development draws a new economic and productive geography: as the industry of the chain assembly leaves space to new forms of labour and production along the so-called knowledge society and the rise of new technologies, design research focuses the new scenarios rising for the creative professions and the chances for the experimentation of new critical keys beside market (Castells, 1996; Gorz, 2003).

The word "Design" is now indicating a varied and articulated field, in which the twentieth-century notion of industrial design, applied arts and crafts continuously exchange their roles.

This is not accidental: it was the design practice, in its most immediate relationship with the structures of production, the consumer behaviors and media techniques, to impose a joint in a position to cope with the dense branching of the creative possibilities, as well as with the needs of a fluid and heterogeneous market, and thus with its disciplinary skills. This articulation has not only increased the number of professional figures, but furthermore has created new design models, based on its dense network of reasons which the Epistemology should be able to identify a common thread, a level of shared understanding and a unitary matrix.

Mutant, Pervasive, and Totalizing

The changes of the production system, the globalization of markets, the central role of communication have changed the nature of the project, which is now investing the entire production system and the nerve centres of society (infrastructures, transportation, attractors, communication), and not just the products. Then, nowadays Design has expanded its territories of action and developed its methods to the point to constitute a complex and cross-border field, which introduces a vast collection of objects, disparate disciplinary traditions, inventive projects as well as highly specialized laboratory research. This can be service design, namely drawing of maps, routes, product strategy, management. It is design connected to communication and fashion design. Furthermore, it is urban design and planning of micro-environments, both real and virtual.

It is the product itself to be changed: in order to have visibility, it must be a product of communication, a product-image, a product-service, a product-event, which plays a central role not only in the evolution of society, but of taste and individual and social habits. The transition from "industrial design" to a "360-degree Design" has led to the multiplication and expansion of its fields of expertise. So, today product design turns to be communication and strategic vision: we may find fashion trends, but also ethics, eco-compatibility, exhibit, what is meant to last and what is ephemeral at the same time.

As per the density of its factors, Design takes the complexity of a totalizing social fact and thus has a central role in the ongoing changes of complex societies, between global and local. It is a Design declined in plural terms, in which the specializations are multiplying and are increasingly more sophisticated and contextual, without starting close and rigid divisions. Conversely, this opens to a plurality of languages and methodologies, which interact and make the Design field even more pervasive and articulated.

Epistemological Furrows

One way to measure the scientific disciplinarity of a field is the ability to develop research tools that can look at reality, while giving an original interpretation, and also to create innovation within the processes of transformation. The research attitude becomes a factor that helps to define the discipline and its academic autonomy, both in relating to other areas, such as in dealing with society that should be targeted by its results.

If the objective of research is to develop knowledge (of phenomena and processes) and whether the disciplinarity as a scientific field is measured through its kit of knowledge that can be transferred to society and future generations, thus in order to ensure its disciplinary autonomy dimension, becomes central to plot its skills and tools of experimentation in research, creating a background of knowledge.

But the history of Design as a disciplinary field is also a hybrid process towards the acknowledgement of the scientificity of its research and tools. In fact, for a long time, a deep furrow, which is at the same time cultural and epistemological, separated the creative activities

in the art field, which were relegated to the realm of individual sensitivity, from the activities of research in science and technology, which were involving the destiny of the progress of society. While the arts seemed to operate in the sensitive sphere of quality, apart from any possible quantitative calculation, scientific research was a strict discipline which could be measurable, classifiable and circumscribed in universally identifiable terms, that is a product of reason put to work.

Arts and techniques have lived through an historic division that would also be irreducible disciplinary and methodological procedures to observe reality. Equally, scientific research would concentrate on methodological rigor and falsifiability of objective results, giving a different value to intuition and the arbitrariness of artistic expression, which would be the result of a subjective product. The neutrality and objectivity of the scientific position, under the guidance of the "light" of reason, would have produced a form of indifference, if not a suspicion, to the creative work of art that would otherwise require the unilateral placement of the artist and a plural interpretation of the observer. Yet: during times, scientific research and technological innovation seem to respond to the dictates of the usefulness and necessity, which would provide a form of social legitimacy. On the contrary, the arts in the ancient western culture stood out all the more practical aspects of material culture, or else sought a form of spirituality, in order to refer to the deeper symbolic meanings.

It will be Industrial Design to bridge that cultural gap, drawing from the repertoire of the arts to create applied forms to technology that ensure the "beauty" and use in society: with the industrial revolution, design goes into the laboratories of science and technology for converting scientific discoveries into physical objects for everyday use. Design demonstrates that the invention of the ballpoint pen can have a social value and be a useful innovation, just as the discovery of penicillin, although on a different level, and furthermore that research no longer remains the prerogative only of those who wears a white lab coat.

For a long time, the historic separation between art and science in research also influenced the patterns of training: depending on the interpretation, design education has found a place in the areas of engineering, giving sense to design for industry, or on the opposite in schools of art, while accentuating the side of aesthetic experimentation. It is the experience of the Bauhaus to organize an autonomous training model, while engaging the collaboration of artists, architects, engineers and technicians, while connecting their skills through project.

From an Aesthetic to a Poetic Research

Research is still the critical field where to draw Design as a recognized and autonomous discipline in the so-called mature capitalist societies and the way it is able to develop knowledge while connecting different disciplinary lenses and at the same time braiding theory and practice. If Design comes to be a field without any defined epistemological apparatus and box of tools, few questions come forward to understand how we can speak about research in design: what justification and what role can be cut in the processes of development and social innovation? What is the relationship between didactics and research? What are the new fields to be developed? What approaches and methodologies?

Design research by its nature catalyzes in itself crosswise contributions and diverse approaches to obtain new knowledge and designing real solutions. Just as any scientific research: it requires systematic and rigorous methods, deals with complex problems and with the processes of transformation, takes care of the scenarios where new discoveries will be included, analyzes the interactions and consequences of possible solutions, raises innovation and future as horizon, gives an interpretation to facts, events or processes, articulates its own specific language and requires the dissemination of the results of its activities. To confirm the similarities and the proximity of objectives and methods between Design Research and any

scientific research is the multiplication of experiences and collaboration between testing laboratories and workshops through design: in this sense we are witnessing the transition from an art oriented to aesthetics to a form of 'poietic' art, or else oriented to research, exploration and creation.

Experience gained from research and teaching in recent years finds the occurrence of design being an autonomous academic discipline and identifies the area within the applied research in specific practical contexts to create real solutions. Equally, it highlights the complex nature of having to interface with knowledge, concepts, scientific and technological processes which are always new and more complex - think of the nano and biotechnologies or the ethical responsibilities and sustainability - where Design may act as a connector. Then, Design would be able to create added value in the world of production and towards the collective interest, because of its ability to develop products, everyday scenarios, interactions, industrial processes, making discoveries and knowledge for practical purposes.

Manufacturing Knowledge

It follows the profound social and ethical responsibilities that creative professions assume towards society: every action and every change of design choice is not indifferent to political decision-making and, as the lives of men and women made of flesh, but also thoughts, needs and desires. Through Design, scientific research takes position on the urgent problems of the world, contributing significantly to the social, cultural and political development of our present time. Then, science divests the habit of neutrality and indifference on the effects of their work, to place itself in a specific historical period and in a particular social and geopolitical context, in which the culture of the project acts as the Ombudsman, to contextualize the results of research into real life.

Even if without any given disciplinary border, just as any scientific field, Design produces: transversal thinking; mindful (and politically positioned) innovation; driving force (in the processes of transformation and innovation), it goes beyond the (disciplinary and academic) boundaries; it works on the quality of (social and individual) interaction; it creates community and involvement (and furthermore develops new cultural models of reference); it is part of the geopolitical and global framework (creating added value, connective flows, processes and forms of organization). In few words, it produces knowledge.

While manipulating reality through its forms and materials, it is the project itself that turns out to be a device of knowledge and at the same time an agent of transformation and motor for innovation: at this end, the final products of design always combine together material and immaterial features: technology and technique, matter and materials, shapes and images, structure and organization, meanings and signs, rituals and behaviours. Through the project, we expand our knowledge about the shape of the world and its specific qualities, while intersecting the levels of public life as private life, economy, culture and daily life, and then, design can be stated as a relational discipline in building connections between the lives of the people and the environment they inhabit.

Fronterizo

Design develops a structurally open field, which is at the same time flexible and has no fixed rules or inner need to be defined too rigidly in its various divisions. While practising cross-fertilization, Design has an extensive capacity, allowing us to perceive the most diverse and unexpected connections. But always in the context of its irreducible anthropocentrism that makes Design being an interface between the outer and inner world of subjects.

In addition, similar to the methodology of science programs, the proper way project design operates is interdisciplinary and is out of the strict logics of the fields, playing out that kind of "thinking differently" from which innovation occurs. This is precisely for its character of being a boundary or border field, which captures and uses knowledge and techniques from other disciplines, carrying them into everyday life and translating them into worlds, real and virtual artifacts, action programs, communication, as well as developing its own tools.

Border fields do not limit to open or crop new fields while using or contaminating concepts, categories, methodologies, procedures, models, experiments, knowledge drawn from other different disciplines, but furthermore elaborate and develop them from within their own methodologies, presenting them into new models, experiments, devices. The final result is the shift of meaning and a new perspective of the same methodologies that have been decontextualized and re-contextualized differently, with an impact to the same disciplines of origin, while opening to new views of knowledge and techniques. In addition, border fields bring into question the rigidity of the borders themselves, turning the imaginary geography that organizes knowledge. More than just another geography, they constitute another way of thinking about culture, technology, knowledge, the objects themselves, where they skip the traditional boundaries and the steady fields.

It is not so interesting the relationships between design and art as design and fashion, or design and communication. What is interesting is how fashion design changes fashion, as well as how the communication design changes communication.

Nowadays, more than ever, innovation is the transformation of thinking problems, which covers the organization of production, consumption, society, but also at the same time this has the power of creating imaginary narratives. So, beauty and utility are flanked by economic and symbolic. Design has taken from art the role of making the world more beautiful in the process of aestheticization of everyday environments and cities. Moreover, it has taken position characterizing critical thinking: such as improving the organization of society and the quality of life, while extending them to the emotional aspects and to affections.

Exploring Lateral Positions

If we may consider interdisciplinarity the capacity of connecting different disciplines from a specific disciplinary standing point of view where to launch links outside of the borders, the way transdisciplinarity works is eccentrically and unconventionally hybrid while it does not recognize any disciplinary border while breaking any conservative and predictable limit of given scientific field. The way transdisciplinary research works is overpassing and invading the given scientific bodies to elaborate tools, skills and languages which are extraneous each other, in order to develop new tools, skills and languages and therefore to follow innovation and to suit a specific and temporary goal or to explore new ideas. The result is always a different and new body which cannot be compared to the former disciplines: the suffix 'trans-' explains a process of transformation and change which cannot keep any scientific identity in their previous shape and body.

This is the way Design often operates in research: while it doesn't have a 'hard and pure' disciplinary body, it blends and mixes together with other fields it encounters, while developing new forms of knowledge. It doesn't translate languages or idioms, it changes the languages and the idioms in order to always meet a different position and at the end the result will be a new language or idiom.

Furthermore, the position Design takes while facing other fields of knowledge isn't frontal, but asymmetrical and lateral, often seeming even unorthodox and illogical.

According to the theory of the 'lateral thinking', this seems illogical in terms of a 'normal' logic, but actually it rather follows another logic, which often is the one of perception (De Bono, E., 1992). Lateral thinking allows to identify the predefined tracks where the vertical

thinking moves, in order to reach new ways helping us to escape from any given track and then being more creative and innovative. As the vertical thinking is logical and selective, while selecting ideas, the lateral thinking is better generative and has the task to generate new ideas and concepts. Again, if the vertical thinking is logic and sequential, the lateral one is more explorative and is able to make jumps, but at the same time the lateral thinking do not replace the vertical, but on the contrary it is able to incorporate it. Rather than refusing, lateral thinking welcomes and accepts, it is inclusive and not exclusive: it relates to the logic of 'and' rather than 'or'.

Living In-Between

Design seems to look outside itself without recognizing any "hard" and "pure" disciplinary border, while always developing a mestizo way of thinking and a hybrid looking to reality. This is for its proper character of being permanently "in-between", while processing knowledge and techniques from other disciplines, taking them into everyday life and translating into scenarios, communication, real and virtual artifacts, rather than elaborating its own principles (Imbesi, 2009, 2010).

Then, along with the end of the "grand Narratives" (Lyotard, 1979), as we're living an era of redefinition of the meaning of 'knowledge', at the same time we state the collapsing of the categories, the scales, the fields: can we consider the project of a Nike shoe an industrial product, communication or fashion? Moreover, can we consider a website as a big or a small scale?

Historically, we can state that the process of building material culture has always been the fruit of continual transformations that frequently take the form of manufactured goods and symbols which are exchanged and transferred among places and territories. In this sense, ideas and images are the cultural heritage manipulated by designers to work out material as immaterial artifacts.

As the continuous displacements, the movements, the uprootings have all contributed in a creative manner to the construction of identities and cultures, through the continuous exchange of images, narratives, forms and languages (Clifford, J. 1988; Canclini, N. G., 2009), as well the way Design works is outside any given path, to always look for contamination and exchange with ever new and different media and tools.

The origins of the concept of hybrid can be traced back to the biological model which distinguishes between two different species and the pseudo species that result from their combination: the 'chimera', the first hybrid molecule, is the result of the composition of molecule fragments from diverse organisms. The evolution of biotechnologies shows how heterogeneous components can be polymorphically interfaced through shared codes of elaboration, in order to build a recombinant DNA after a praxis of sampling and mixing.

Hybrid Products

Using the notion of hybrid to understand the prevailing characteristics of contemporary artifacts, implies a conceptual extension that sometimes attributes to the phenomena of hybridization specific and new meanings, even if they are related to everyday products. This is even more present in the current condition of development where the physical context is crossed by an ever-changing flux of artificial products that changes daily and whose changeability is increased by the very immaterial condition of many of these products crossing it. This fluidity renders products permeable with respect to each other, breaking down the barriers of their

functional and typological references, contaminating them with technological transfers and stylistic superimpositions, while destabilizing them with regard to their frame of reference.

At this standpoint, it is basic for the designer to understand the processes of cultural exchange, and that design is, in someway, a discipline of interconnection between various fields or disciplines. This has great value when relating to different fields, like handcrafting, communication, sociology or anthropology of the everyday, and rituals, etc. Then, design should be considered as a hybrid discipline.

Working with hybridization seems something essential to the field of Design and necessary so that designers understand their own activity: in that respect, Design has a long tradition not being troubled by the notion of purity and then being flexible in the appropriation of heterogeneous materials and at the same time being involved in many cultures. Thus, we need to learn the rules or methods of hybridization as they occur in the contemporary world. They appear as the ways of knowledge and self-knowledge that are needed for a design. But at this time, it is important to conceptualize it more in terms of cultural exchange as it appears to be a more extensive notion.

A Metaphorical Attitude

Design is renewed and strengthened if it looks outside rather than inside itself, while going beyond its own disciplinary boundaries, staying and working on the edge, on the areas of friction and interference of the different disciplines, where things do not end but begin. This is intended not to practice a nomadic erratic discipline, but to look at things beyond the given conventions. Then, it is from the reflection on Design itself that an adequate Theory of Design can be born, although different from the important histories and semiotics of Design, which can be considered the two theoretical approaches that have been earned to date, with their latent or explicit philosophies and theories.

Design does not have a specialized vocabulary and uses words that belong to both common language and to specialized languages of other disciplines. Yet, Design has a language other than common, though its specialism is not just the result of its special vocabulary or lexical expressions, as it is in the case of technical-specialized languages but implies the presence of its own deep semantic field.

In fact, Design implies a strong core of methodologies, such as tools of analysis or research, that define the perspective of the project not just finalized to itself but filtered by the dynamics of the project. Such methodological apparatus has not just a function of description and interpretation of reality, but it is also directed to the problematization of reality and to opening up to new horizons.

The implicit code which regulates the systematic translation operated by Design of the meanings taken from the ethnographic, the sociological, the economical, the productive, the consumption and market disciplines within its own disciplinary context and in the perspective the project, makes it a special language, positioned on the opposite side of the technical-scientific languages, which on the contrary are aimed at increasing the rigor and reduce the ambiguity of any ordinary language. By contrast, Design aims to enhance creativity through the systematic expansion of its metaphorical attitudes and its language skills, objects and images.

Computer come to be the universal tool and at the same time the new paradigm for living, working, organizing, producing and of course generating ideas and elaborating creativity. At the same time, the computer is the universal vehicle to spread those cultural images which are the common field for every creative mind at work to produce even more widespread cultural images affecting our contemporary material culture.

Design happens to be the result of the use of networks of IT communication and the increased mobility available, as well as the effect of the shrinking of space and time within our

globalized society, more than just the interpretation of the manufacturing materials and techniques available in specific time and contexts, to produce and spread a language in continuity with the material culture of communities and social groups.

The Intelligence of Metis

A reference to an ancient but modern metaphor can help us to define the way of being and the diversity of Design: literally translated from the Greek mythology as the "cunning reason", the Metis is a form of intelligence and thought, a way of knowing that belongs to the Greek mythology, and that is still current, which is useful to read the present ways of knowing and acting. The Metis implies a complex set of attitudes, behaviors that combine intellectual instinct, sagacity, foresight, the ease of mind, the fiction, the ability to get off the hook, the alertness, the sense of opportunity, the ability in various fields, the experience gained after many years. It also applies to fleeting and ambiguous reality, which do offer themselves to strict and precise measurements, neither the exact calculation, nor the rigorous reasoning.

Metis reverses the opposite and do not occupy a proper space: it is going from point to point. It is effective practice, which makes it possible to succeed in the action. It's a dense thought, that roots deeply mind into the project that has developed in advance, thanks to the ability to foresee beyond the immediate present, a more or less thick slice of future.

It is diverse and solid with both the diverse and the divided world, where it is submerged to exert its action. It includes several devices and connects with the figure of the artist and with Techné and appears as a versatile art in having skills in doing everything. The complicity with the real ensures its effectiveness in an area where there are no rules or ready recipes, and every time requires the invention and the discovery of a solution.

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Design Principles and Practices: An International Journal—Annual Review
explores the meaning and purpose of "design," as well as speaking in grounded
ways about the task of design and the use of designed artifacts. The resulting
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