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Projeto apresentada ao IADE – Universidade Europeia, para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Design do Produto e do Espaço realizada sob a orientação científica do Doutor Pedro Paulo Oliveira, Professor Assistente na Universidade Europeia.
Arguente: Professor Doutor Renato Bispo
Presidente: Professora Doutora Hande Ayanoglu

Alla mia famiglia,
che mi ha permesso di sognare

palavras-chave Design, cerâmica, mutação, imperfeição, defeito

resumo

No processamento industrial, os erros e marcas de produção são eliminados porque vistos como aspetos que diminuem o valor do objeto, quando visíveis. Esses fatores considerados comummente como ‘defeitos’, no entanto, evidenciam a narrativa do processo produtivo, fazendo, portanto, parte da história do objeto.

Partindo do estado de design e produção de assuntos sobre produtos industriais e artesanais, a tese pretende investigar e analisar novos métodos de projeto relacionados à experimentação de forma capaz de deixar traços e significados capazes de permanecer impressos em a superfície e a memória do objeto e daqueles que o usam.

Em particular, tem como objetivo trazer o valor do processo de imperfeição em objetos durante a fase executiva.

Através de um processo experimental de Auto produção, este projeto quer dizer, através do uso de material cerâmico, a mutação da forma de um objeto através da deterioração do molde investigando, ao mesmo tempo, a estética processual. O objetivo é o de desenhar uma diretriz específica útil para a análise crítica das tecnologias de produção.

Keywords Design, ceramic, mutation, imperfection, defect

abstract

In industrial processing errors are eliminated because considered as defect, if visible, as elements that decrease the value of the object. These imperfections are commonly considered ‘defects’; however, they reveal the narrative of the production process and part of the story of the object.

From the design, the craftsmanship, and the industrial process as a whole, the thesis intends to investigate and analyse new design methods related to experimenting shapes, that are able to leave traces and meanings related to the object’s past for those who use it. In particular, it aims to bring the value of imperfection into objects.

This project wants to convey to the consumer, that through the use of ceramic material, the change in shape is the result of the mould’s deterioration over time. The aim is to draw a useful specific guideline for the Technology production.

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Introduction

The following treatment will deal with the relationship and the way in which today's artefacts are produced, focusing on the ability of objects to tell new languages and new meanings thanks to their strong component of irregularity material and formal imperfection. It is criticize and distance itself, therefore, from those 'canons of beauty' that Western culture has always wanted to imprint in today's market, (e.g., the homogeneity of form and shine and polished surfaces) sacrificing, at the same time, hidden and matter intrinsic meanings on how everyday objects were produced, what material they are and how they prevent the empathic relationship with the user.

"*Instead, nowadays, the objects have become a heteroclite of subsumed products by our unfortunate 'consumer society' [...] from blue jeans to sporty T-shirts, to the endless range of plastic objects with their phony shiny and their ephemeral modernity*" [1] (Dorfles, 1976).

There is the awareness to describe with a critical eye the idea and the 'policy' that the industry has regarding the object produced as it identifies as waste an object that does not correspond to certain stylistic, aesthetic and/or functional characteristics. It is denoted, intact, as well as the minutes aesthetic defects, such as the alteration of the surface of time, the deformation of the volume and other effects that imply a reduction in functionality, cause the manufacturer to eliminate the defect that the object presents on the surface defined as error or discarding it from the production line (this topic will be explained in the paragraph '*The meaning according to the Western industrial mentality* ' of chapter 4).

[1] "*Invece oggi sono divenuti un'accozzaglia eteroclita di prodotti sussunti dalla nostra sciagurata 'civiltà dei consumi' [...] dai blue jeans alle magliette sportive, all'infinita gamma di oggetti in materiali plastici con la loro lucentezza fasulla e la loro effimera modernità*" (Dorfles, G., 1976, *Gli uomini come feticci*, Casabella, n. 415-416); (free traduction by the author)

Over time and with technological development, some designers (mostly young) try to stay 'faithful to tradition' by designing and creating objects on their own without the need for specific industrial machinery. This new approach to production, which can transform the designer into an almost alchemist is called DIY (argument covered in the paragraph DIY, '*an approach that enhances the unique piece* ' of chapter 3), in which emerges a real interest in a new typology of design by working objects, advantageous, witnesses of stories and narratives, which see the use of production waste or natural base materials. This approach aims to enhance artefacts able to tell stories, unique events, which tend to fuel the desire for uniqueness of those who own them. The *defective* object can therefore offer this potential because the imperfections embedded appear as *traces* on the surface of a phenomenon that has occurred in a plausibly unexpected or uncontrolled way that characterized it, unlike similar or surrounding objects.

For this purpose, singular artefacts, resulting from this 'new' design approach, promote the affirmation of the bond and the preferability on the part of the user, even if it is lowered in a community context. If the object is unique on its own, the empathetic relationship that the user will have with it will be greater than with an object that is part of a mass production line. In fact, the object designed and produced to be unique, thus assumes a substantial value for those who own it and this for one reason above all: to win the monotony derived from the uniformity of the same, as well as to allow a differentiated use (Dorfles, 1983, p.16); this will extend its use until the user considers it to be emblematic of their uniqueness.

The design approach that aims to enhance the product uniqueness (Chapter 3), already in its implementation phase has a strong potential, especially in terms of production and materials used. To design and create an object independently, there is inevitably a process of experimentation (the theme faced in the paragraph '*The error during design experimentation* ' in Chapter 4) in which, most of the time, the designer is not fully

aware of the final result (in terms of the shape, decoration and color of the object) as it adopts unknown methodologies or never tried until now.

If so, far the ethics of change (Chapter 5) has established short-lived relationships with objects, it is essential to address the change in the artefacts so that they appear to its user always new. A dynamic and changing object is dressed in such quality that they are usually the typical animated creatures, endowed with a vital spirit (such as nature and living beings), such that an artefact is more prepared to receive the attention and care that, necessarily on another level, it targets living objects.

It is created an approach that can predict the possibility of changeability qualities reorganization over time. Thus, practicing in this way, a *fetish* is generated for the user, an object full of meaning and maybe meaning, a constant reference thanks to its mutability.

In conclusion, with this treatment is tried to investigate about the meaning of imperfection as a device for the *rediscovery* of an appreciation towards the intrinsic peculiarity of human experience and life. The 'look beyond' the perfect object (meaning as free of smudges or errors), homogeneous, for all; look beyond to other cultures such as the Eastern one and to grasp the true meaning of the imperfect object that they identify with the term of *wabi-sabi* (paragraph '*Valorizing imperfection* ' in chapter 2) able to share emotions, meanings and stories about the relation between user and object itself.

The need for constant *performance* required to artefacts has perhaps led contemporary human, increasingly associated with a consumer machine, to become itself the guarantor of excellent performance, so as not to accept any phenomena that reveal the real nature. The contemporary human is sparkling, vivid and homogeneous in color, with a white smile, with a smooth and taut skin. In a smooth and homogeneous surface, the *signs* and *traces* that make each individual unique are dissolved. Similarly, the writer wonders whether one can rediscover the true value of

experience and wisdom even for artefacts, who let themselves flow through time, take charge of their history as well as those whose use them.

The following arguments were conceived with the intention of making the reader reflect and asking questions about today's picture of design status and stimulating reflection on the use of matter and design in the time; It is hoped that a process of awareness acquisition can be initiated, aimed at rediscovering the value of imperfection through its own tangible manifestation on object

CHAPTER 1

Historical background

The first chapter of this treatment has the objective of contextualize the design theme enriching it with some aspects that better help the comprehension of it.

To understand why is of interest to analyze the genesis of the objects, we will study the evolution of aesthetics and of the practice from 1800 to the present also evolved in relation to technical development scientific and with it also the evolution of materials in the various uses of design and how the term design and the role of the designer have changed appearance and conception. Then we will talk about how the means of reproduction have influenced the cultural value of the materials and the object and how the latter has always been linked to an economic and social change.

The first sub-chapter continues then, reporting a design example that becomes an element of inspiration for the evolution of my project, with the Geatano Pesce case where the critique takes place in the standardization of the industrial object. This will then help us develop how the figure of the designer is closer than we think to that of the craftsman and at the same time how it is changing the perception of design. Concluding, I will bring an example of a young designer in which he finds of his design method a meeting point between valorization of the material (ceramics) and the technology of the 3D printing, enhancing both the craftmanship and the technology.

Moving away from this theme, it will be deepened in the second subchapter, the differences between craftsmanship and industrial design. The aim will be to verify how the formal element is so radically different in the two worlds, enhancing the fact of uniqueness of defect on one side and

criticizing it by calling it rejection on the other. Furthermore, we will try to ascertain whether there is a possible relationship between craftsmanship and design, that goes beyond the aesthetic/formal value, until this difference has evolved nowadays.

"Design is one of the methods to shape the matter and make it look like this and not in any other way. The design, like all cultural expressions, shows that the matter does not appear (it is not flashy), if not to the extent that you in-form, and that once in-formed, begins to appear (becomes a phenomenon). So, the matter in design, as in any area of culture, is the way how shapes appear" (Flusser, 1993, pp. 154).

1.1 Applied Arts

The relationship between industrial production and objects of use involves the introduction of the standardization theme, intended as an optimization for industrial reproducibility. Walter Benjamin in his book *The Work of Art in the Age of Mechanical Reproduction* concerns precisely the technical reproducibility theme inasmuch in principle there was only the work of art understood as a reproducible work only for some, example teachers' students who were engaged in the exercise of reproducibility. The technical reproduction, however, needs (technical, in fact) development to make the artefact performing, and that is why it takes longer to assert itself always with stronger intensity (Benjamin, 1998, pp.6-7).

The opposition between craftsmanship and industrial production has earlier backgrounds of Benjamin's claims. The definition of an aesthetic combined with the products of the industry found in the second half of the nineteenth century various answers that agreed to mature a new vision that coincided with the aesthetic emancipation of the object of use, the first major protagonist of the applied aesthetics. This Is where the *artefact* begins to become an *industrial product*, produced in fact by a standardized industrial process in which the object production was planned before

becoming real and usable. Design as a full body discipline emerges from this industrial change. Starting from the reality of the first industries in the Anglo-Saxon culture the discipline of design was described through the project or simply the design, which in turn gave shape to an object or a tool.

With the appearance of the standard manufacturing product as well as the industrial goods, the design was influenced in a decisive way by the respective social, cultural and economic conditions of the relative historical period in which it took place. Thus the nascent production of series, during the first industrial Revolution, determined the emergence of a completely new phenomenon until then; the project-design of an object detached from the historical manual tradition (with the birth of the division between designer and craftsmen) marked by a new cultural impulse, introducing aesthetic-qualitative canons in the process of industrial production (with the birth then of the English Arts and Crafts movement or the German *Werkbund* that, further along, it will be take in consideration).

A first implication with design can be found in the same industrial machines, characterized by a great functionality and efficiency and therefore with that modest 'aesthetic' claim that will delight the favor of the most modern critics. In fact, During the 1851 London exposition (Fig. 1), machines were the ones, completely immune from style/decorative concerns, that marked the real progress, also from a taste view point, during the industrial revolution.

Figure 1 - Crystal Palace during the Great Exhibition, London, 1851; https://www.imagenesmy.com

With the Industrial Revolution, the work becomes collective, organized, segmented, disciplined and supervised. Workers rush in their labour (correct, feed, verify) while machines develop tasks not needing to rest. The work is therefore continuous. The factory system transforms the work and, with it, the social order, the way of thinking and of living. Overall, it transforms the society itself.

In the period between 1760 and 1830 it must be point out that, despite the emergence of new types of products, the use of new materials and the invention of new machinery, the most relevant production sectors about design culture were those that presented a greater continuity with tradition, those in which it was better to see the transition from crafts to industry, always supporting each other.

The design activity, understood as the creation of an industrial product, has been affirmed by hand with the birth of mechanized production processes and the increasing diffusion of standard products from small and medium sized manufacturing industries, touching worldwide markets and creating increasingly large groups of consumers.

Exemplary is the case of Wedgwood, an English industrialist who build around 1759 the first industrial ceramic company around. Wedgwood's approach was very focused to the production methods and new scientific discoveries, however, from a stylistic point of view Wedgwood's work began with the imitation of antique models, from the Chinese-style plates

(Fig. 2) to the Etruscans and the Neoclassicism models. This which ended up characterizing the company's products, which in turn becomes the greatest expression of the Neoclassical in the field of ceramics.

Figure 2 - Wedgwood ceramic plate, blue and white pattern, 1898; https://www.antiques-atlas.com

It Is with this typology of products that Wedgwood expresses its brilliance: *Starting from the personal experience and the local tradition, he knew, through a process of continuous reductions and simplifications, to find the way to make more and more adheres the shape to the function of the ceramic products quantizing the number and reducing the price, as it imposes a serial processing*" (De Fusco, 2006). Wedgwood was the first Potter to devise forms entirely suitable for their purpose and which were at the same time capable of being reproduced with absolute precision in unlimited quantities.

Into an industrial context lasting almost a century, there is a routine that interprets in the worst way the principles of liberalism, namely, to produce as many objects as possible in the shortest time even at the expense of the quality of the product itself. In fact, Pevsner says describes this industrial situation perfectly: "*Thanks to the new machines, the manufacturers were able to market thousands of items at good price using the*

same time and cost that It took a long time to produce a single well-made object. In all branches of the industry the nature of materials and technique was altered. The skilled work of the craftsman was replaced by the mechanical routine" (Pevsner, 1945, pp. 3).

The dysfunctions of the production of time should not be attributed only to the cynicism of some manufacturers, but essentially in an unclear view of the qualification of the products, to the same way to give them a shape in the absence of models.

Deeply analyzing the changes and trends of the sector we must necessarily refer to the evolution of the socio-cultural and economic conditions of the context. In his book *Breve storia del design italiano*, Matteo Vercelloni clearly communicates that design has always been a *Tool* and a *Product* of a reality given by the contexts in which it is inserted. The author reconstructs the history of design by tracing the main milestones that see the contextual references continually changing, from the end of the nineteenth century, with the Arts *and Crafts*, until the great season of Italian design in the sixties and seventies. It can be said that the historical contexts are all the time determinants for mutations in the design concept itself. A demonstration of this is worth some examples from the history of industrial development within western society (Vercelloni, 2014).

As mentioned previously the advent of the Art and Crafts movement arose from a rejection of industrialization and all that it implied, his philosophy was based on a romance that complained about the loss of the past and humanism associated with it. William Morris gives birth to a process of cultural transformation capable of fighting the liberism and eclecticism of industrial production proposing a radical reform policy which, in the specific area of applied arts, took like models the form of the corporations and medieval product processing. He focused especially on the two-dimensional design: embroidery, stained glass, wallpapers, ceramics and textiles (Fig. 3-4). His new way of perceiving the product

design escapes from the symmetry and the two-dimensionality of the models of the decorating schools and insisted on the necessity of 'an abundance of meaning in decorative motifs'.

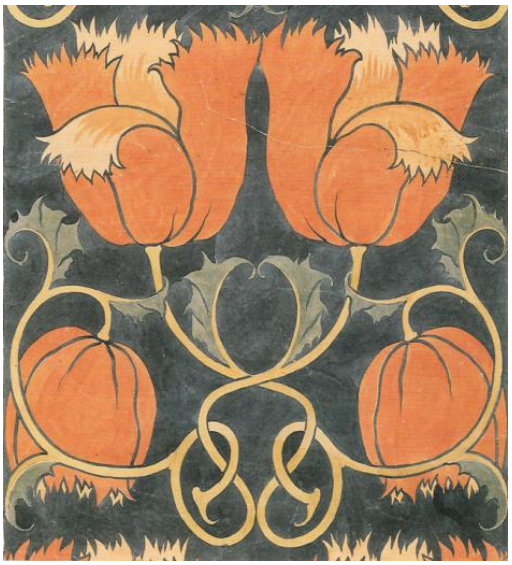


Figure 3 - Voysey, F. A., (1857-1941), Tulips, c1888 (detail) https://www.studiointernational.com

Figure 4 - Webb, P., Altar table, made by John Garrett and Son, 1897, England. Museum no. W.4-2003. © Victoria and Albert Museum, London; https://www.vam.ac.uk

In addition, those who have marked a fundamental step from crafts to industrial production has been Michael Thonet's case. The production of its furniture originates from a technical innovation that consists of moistening the wood with steam and then folding it (Fig. 5-6). We will not go here to specifically analyze the Thonet's production which is well reported in many books dealing with the history of design, but it is good to cite this example because it is perhaps the first furnishing piece to become a true *Classic*.

Figure 5 - Thonet, M., chair n. 214, first example of Flatpack; http://en.thonet.de

Figure 6 - Bending wood process for Thonet Chair n. 214; https://www.youtube.com/watch?v=8sUti5yG7iU

For the analysis of this treatment, the relationship between objects and production processes that is generated, however, it is useful to highlight how an innovation of the technique has given rise to a way of producing radically new furniture. The traditional workings in fact would never have allowed the realization of structures like those of Thonet's. The process, in this case, does not follow known forms but instead generates new one, Thonet's style lives forms and productive needs of its time and is able to anticipates new taste guidelines.

Like the Arts & Crafts movement, another example of the design history has been profoundly marked by a period of profound evolution of socio-cultural and economic conditions of the context; the devastating world economic crisis of 1929 with all its repercussions on culture, art, ideology, economics and politics favors a role of predominantly utopian design, social and rational critique in Europe (Simma, 2008, pp. 4). The dominance of the ideas in the Bauhaus of Weimar and Dessau leads to a great influence in Germany and in other European countries where the decisive industry influence on the behavior of the consumers is dominant, and the design, connected to the current economic crisis, is intended for a long

period as a simple "artistic intervention” on the product casing (ibid.). A designer on all, counts as an example in reference to this context: Marcel Breuer (Fig. 7), designer and professor of the Bauhaus that will introduce new criteria for the technology of support and the production of furniture in tubular metal following a functional principle dictated from the use of a new material: steel (Fig. 8).

Figure 7 - Marcel Breuer sitted on his Wassilly Chair, 1928; http://www.rendezvousdeco.com

Figure 8 - The Bauhaus Dessau metal workshop, 1928-1929; http://archive.artsmia.org

As we have seen and noticed previously, since 1800 was used to use poor materials to imitate other more valuable, the same task has been assigned to a material that will profoundly change the mechanics of industrial production: plastics. Fundamental material when it comes to the evolution of design and material for design, which already from the end of 800 was used as economic material to imitate more precious materials such as ivory. But It's only from the years ‘30 that the plastic begins to find its true identity in the uses of the design.

The cultural revolution of modern materials and contemporaneity can be said in the name of polymeric materials, connected to scientific research and technology transfer, and belonging to the culture of solid-fluid materials. Under the generic name of plastics, we refer to a vast,

articulate and constantly updating horizon of materials now used to produce a huge number of objects and elements for design and architecture.

Roland Barthes, in *Miti d'oggi* (1974), refers to plastic has been an alchemic substance, which transforms matter into a perfect, almost human object.
There were many designers who, starting from the second half of 900, started to design objects using plastic, first from the Castiglioni Brothers to Marco Zanuso, from Vico Magistretti to Enzo Mari that can be considered the founding fathers of Italian post-war design where their way of making about design was innovative in terms of shape, function and social research but still with a strong willingness as a tradition and function of the object. After them with Memphis movement founded by Ettore Sottsass where often were the designers themselves to create a distribution network for the dissemination of their products (Barthes, 1974, pp. 169-170).

The context has fueled and renewed the industrial design sector, pushing it beyond its established areas, confining it to art, redefining craftsmanship through the introduction of unique pieces on the market and finally moving towards a strong development of design collectibles (Fig. 9).

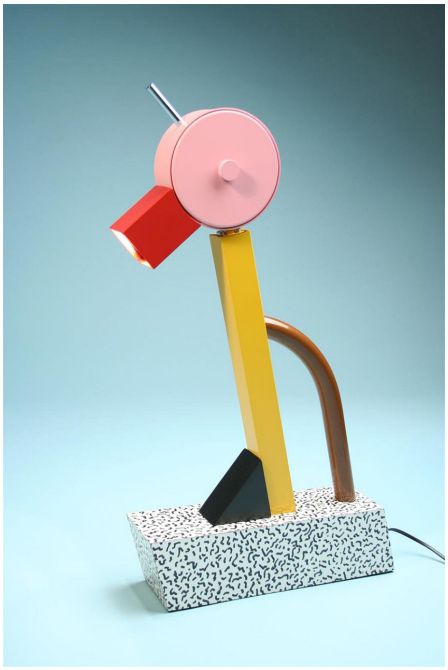


Figure 9 - Sottsass, E., Thaiti Lamp, 1982; https://magazine.design-best.com

Practical example of what is written is the figure of Gaetano Pesce who with his *Diversified series* critically judge the contemporary industrial production and offer new design political and subversive connotations towards ideologies and methods of production, emerged in the late sixties, far in advance of recent economic theories confirming the principle of mass customization.

The mass production idea arises in opposition to late-Marxist political ideologies because they had the objective of reduce to human standard needs, as Carlo Martino says writing about Pesce: "*When I began to have doubts about standardized production it is because, on the one hand, there was someone, like for example the rhetoric of Marxist ideology, [...] Who said that the world, the populations of the world, all had to resemble each other, and had to be of the populations expressing themselves in the same way. Even, the way of dressing had to be unified. And so, they tried to eliminate the differences, which instead are qualities that bring the identity to the world and to different populations"*. (Martino, 2007, pp.51).

With Pesce comes a new way to experience the plastic material and plastic resins by opening a new branch of industrial production that is distinguished from the traditional canons of industrial design becoming so *unique* (which we will then consider analyzing it more deeply by inserting it in the context of industrial production) touching the opposite design product substantial contents, starting from the design (Fig. 10). Its great innovation is, in fact, to have guessed that the element of *characterization* must be researched and introduced at this stage. The main goal of the *diversified series* was to obtain similar but not identical products, precisely differentiated from each other, with affordable costs, through free variables. These characteristics are involved during the production process randomly and uncalculated, making distinct, at the final design process, the content and appearance of the final product.

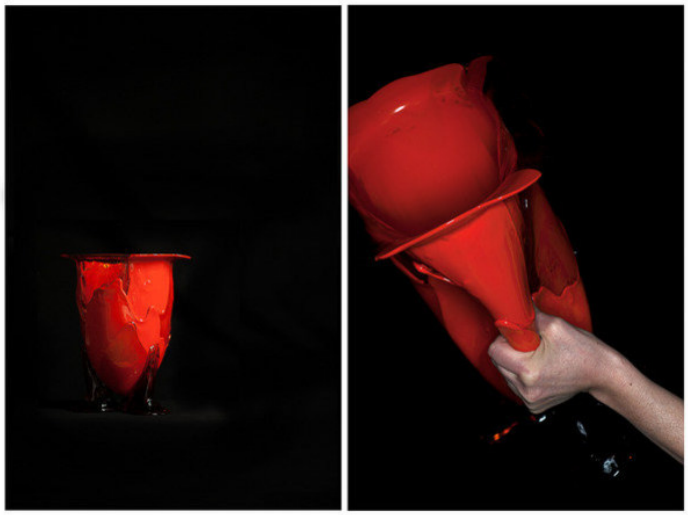


Figure 10 – Pesce Gaetano, Amazonia Vase, 1995; http://www.arte.it

Nowadays we are potentially on the brink of a material revolution that could help rebalance out relationship with our planet and reshape society for the better. As mentioned above, design moves in step with economic and social factors, and design today is realizing that there is an ever more intense struggle between man and planet. We are running out of raw materials and creating enormous quantities of waste. We cannot continue to race through our planet's finite resources; indeed, all the evidence

suggests that if we continue at our current rate, we'll soon need a second planet (Franklin, Till, 2018, pp. 167-169). Design today need a better, smarter, more cyclical approach, in contrast in contrast to our current linear take-make-discard relationship with materials. Fortunately, most of the young designers are moving in this direction beginning to see that alternative systems of production and consumption are possible (ibid.).

In the quest of improved sustainability and enhanced performance the technological innovation is important but is not the whole story. Most of the modern objects made by young designers, embrace a full spectrum of materiality, from craft processes that would be recognizable to makers. While there is everything to gain looking forward and planning for a better design, there is also much to learn from looking backwards in terms of looking sideways and re-evaluating what we already have.

Emerging technologies, including artificial intelligence and robotics, a new manufacturing flexibility has started to transform our economy and the relationship between producer and the people. Powerful, lower-price industry-grade 3D printers, CNC routers and laser-cutters are enabling people to design, model and engineer their creations themselves locally. In private workshops, at home and in maker spaces, hack spaces and Fab-Labs, these new technologies are disrupting the classical business models by transforming the way we make and distribute goods.

Example of reality that is able to perfectly explain this new phenomenon of design is *Functional 3D Printed Ceramics* by Oliver van Herpt (Fig. 11-12), a project that will later analyze with greater attention as a case study, as working with the ceramic material, has wanted to enhance the phenomenon of imperfection through the sophisticated technology of 3D printing. With textures reminiscent of fine lace of natural forms, the finished products appear handcrafted, but their intricacy reminds the viewer that they are a collaboration between man and machine. "*Clay is much more elegant and noble material than plastic; it is much more sculptural*

[...] 3D printing has the potential to bring back the unique and individualized objects that artisans make" (van Herpt, 2018, p. 161).

Figure 11 - Functional 3D Printed Ceramics by Olivier van Herpt, 2012-2019; http://oliviervanherpt.com

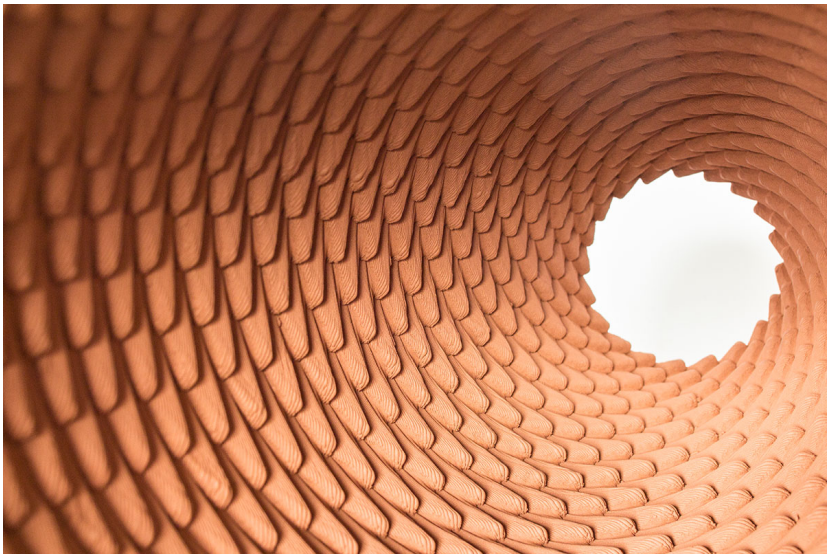


Figure 12 - Functional 3D printed Ceramics by Olivier van Herpt (internal vase detail), 2012-2019; http://oliviervanherpt.com

With design the attention has definitely shifted on things and has completely rooted in them giving full fulfillment to the modern paradigm supported by the linearity Experience-possession-knowledge. As Benno Simma says in his writing: "*Design produces objects, but it would be more accurate to say, generate objects. These objects are in-formed by the ideas and the culture, i.e. they give form to the matter, but above all to the art and the scientific knowledge, the same ones which allowed the construction of the machines which in turn produce the objects, and the one and the others compose their own text, materializing their own codes in the materiality of the object"* (Simma, 2008, p. 11).

So, is possible to infer that *design* it is a word that in some way is a bridge between the two branches of culture, the scientific one and the artistic one. Vilem Flusser explains: "*This was possible because it expresses an internal connection between art and technology".* (Flusser, 1999, pp. 1-6). Flusser in fact makes an interesting reconnaissance of the term design, highlighting a direct and obvious link between it and the terms *Machine, technique, art* and *artefact* each of which is unthinkable regardless of the others. For this reason, concludes "*Design indicates roughly the place where art and technique come in common accord to coincide, paving the way for a new form of culture, that precisely expressed by the modern project, at the height of which the design is fully placed"* (ibid.).

1.2 Among craftmanship and design

"*After the industrial civilization introduction, work has become a one-way operation, in which man models an inert matter, and sovereignly imposes the forms that condone it*". [2] (Lévi-Strauss, 2008).

[2] "*Dopo l'avvento della civiltà industriale, il lavoro è diventato un'operazione a senso unico, nella quale l'uomo - lui solo attivo - modella una materia inerte, e le impone sovranamente le forme che le convengono*". (Lèvi-Strauss., *Elogio del lavoro manuale*, La-Repubblica Archive); (free translation by the author)

Thus, in the far 1986 Claude Lévi-Strauss denounced the drift of the industrial work.

In this sub-chapter we try to highlight a possible difference between craftsmanship and industrial design on how the production techniques characterize and change the object-artefact and how the formal values of the latter change of perception.

The craftsman, characterizable in the first instance with the manual work, uses a different approach than the standard design: He knows to build with matter a *seduction relationship* demonstrating an ancestral familiarity made up of knowledge and manual skills but also of respect for the context. The defects of the material come from the craftsman welcomed and valued in the product (creating uniqueness); in the industrial world, however, these anomalies are a reason for waste and transform in an instant the material from artefact to rejection. This is also possible because in the craftsman the focus is not only centered on the product but also the process that binds to the product transforming the inert matter into artefact. In fact, the craftsman's ultimate goal binds to another foundational characteristic of the artisan culture, the *mastery*, which refers to a primordial human impulse: the desire to perform well a work for oneself, the passion and care for what he does, the so-called craftsmanship.

Craftmanship is synonymous of personalization, constitutive component of the artisan making and binds to the economic value of the uniqueness of a product. The trade enhances this diversity and tends to die (in the sense that it loses its usefulness) when the homologation rules that instead becomes the maximum aspiration of industrial culture that sees the different as a defect, as an unexpected to eliminate. The defects of the material come from the craftsman welcomed and valued in the product (creating uniqueness); In the industrial world instead, these anomalies are a cause of rejection and transform in an instant the material from artefact to waste. Diversity thus binds an object to a place or to a

specific artificer, giving it an additional value. All this happens because design is more socially oriented than the crafts because designer are constantly thinking about consumers (Dormer, 1997, pp. 10-24). The studio crafts are characterized by inward-looking because so many practitioners claim they are making (and designing) for themselves. But this is not always true; for the last thirty years a succession of high-status designers such as Ettore Sottsass or Andrea Branzi have merged studio crafts with design in their pursuit of more 'humane' design (ibid.).

Ettore Sottsass is one of Italian's most famous 'industrial' designers, yet he has produced 'art' ceramics for forty years. His pots have looked like studio ceramics; they are not primarily functional, some have thick, custard-like glazes, and others are highly textured with deep cuts that only just catch the glaze and they are handmade (Fig. 13-14).

Figure 13 - Sottsass, E., Totem no 18, porcelain, 1966; https://www.phillips.com

Figure 14 - Sottsass, E., Rocchetti Vase, terracotta with dripping glase, 1957; https://www.dezeen.com

Sottsass has always had an issue with design (ibid.) and in this matter Sottsass quotes: "*The problem of making things that wouldn't yield too quickly to the pleasure people get from filling their homes with a thousand small trophies of personal status, objects that would not yield too quickly to the rhythm of consumerism*" (Sottsass, 1995). That is why he took to handcrafted ceramics.

The other mentioned Italian designer Andrea Branzi, through his exhibitions and books has explored the idea of adding meaning and symbolism to objects in the home. His pursuit has led him to create a series of studio-craft designs for furniture and other objects which he has called *Domestic Animals* (Fig. 15-16). These pieces are lovable and have personality by providing a sense of *seduction relationship*. This is what Branzi has sought in his design. We can infer that 'domestic animals' is a clear example of combination between design and craftmanship because able to bring a new interpretation of modernity combining crafting methodologies and industrial production techniques (Dormer, 1997).

Furthermore, both the designers have made and will make a big impact upon design for manufacturing is hard to gauge, probably not. What is interesting is that when designers went to make a rhetorical cultural comment about the shortcomings of design and technology, they have borrowed an argument from the craft. In so doing they also showed how fluid is the definition of design.

Figure 15 – Branzi Andrea, 'Domestic Animals' - Bench, 2008; https://www.phillips.com

Figure 16 – Branzi Andrea, 'Domestic Animals' - Cucus, 1985; https://www.mutuart.com

The production technologies evolution made the objects become more and more perfect and free of smugglings. The signs of the process used in the production of things is hardly revealed or is capable of leaving a *trace*. One of the reasons is probably that industry aspires to a finite object in most cases, perfect, error-free and devoid of special signs or imperfections. This demand for uniformity of products clearly finds motivation in the market and in the difficulty of commercializing many products slightly different from each other.

The problem is that when it comes the product uniqueness, it flows directly and involuntarily into art, but it is not always the case. One realizes observing the artefact of the past that art, however, has always been reproducible. A thing made by human has always been redone by other human. Similar reproductions for example, were carried out by students to practice in manual skill, from the masters to disseminate the works. The technical reproduction of the opera of art is instead something new, which states in history intermittently, in often distant waves from each other, and yet with increasing intensity (Benjamin, 1998).

Even so, from the designer's point of view, the craftsperson has become expendable: computer-guided machines increasingly inhabit factories (unless labour cost are so low and that the machines are uneconomic). Moreover, even model-making and prototyping are under threat because of advances in automated rapid prototyping techniques. However, there is still a role for model-making and prototyping but for how long and in what form it will last is impossible to predict (Dormer, 1997).

Nowadays, the computer and the various modelling/design programs have become indispensable to have, from the companies, a gain in terms of time that then materializes in money. In the private sphere, or in smaller realities than the industrial ones, making crafts has preserved its interest in dealing wisely with the matter. As Ettore Sottsass said in an interview: *"The dematerialization following the arrival of digital technologies shows that we still need more objects that have a precise history and geography: Behind every craft creation there is a person, a thought, a place".* (Sottsass, 2008).

The artisan culture therefore possesses the taste of doing things well and finding 'right' solutions that often become unique. The quality does not depend on the precision of the machine but on the love and effort that the craftsman put into it, and the obsession to find each time the right solution, often antithetical to the standard one, capable of transforming a defect into uniqueness. It has to be said and claim that CAD machines are

not programmed to educate or intrigue. Without craftsmanship and without a real profound culture of the production process and material it is not possible to create design objects that have a deep meaning. The same meaning that nowadays it is completely lost when we talk about ‘design object’.

Nevertheless, in a practical sense you cannot divorce craft from design. The craftsman is much a designer as any product designer: to make something requires choices regarding the structure and the appearance of the objects as well as a strategy for making it.

Furthermore, without craftsmanship there wouldn’t be modern industrial design, and is here that crafts and industrial design meet each other; it is not least possible to invent forms, materials and design methods without first physically testing them and realizing how they behave in real life. Both systems craftmanship and design should therefore be considered equivalent in their thinking and design moment. Are distinguishable and appreciable according to the methods of production, distribution and consumption that characterize them given that one support the other and both are indispensable for the technique evolution.

Once ‘classic design’ approach seem to be focused on designing products destined to the mass market. But today we also encounter some designers (and companies) that, on the other hand, focus on designing and producing temporary products, changeable, able to place themselves in non-traditional sectors (Lotti, Marseglia, 2018).

Taken in example the exhibition the *New Italian Design* held in 2007 at Triennale di Milano, Branzi argues: “*It has emerged a singular aptitude to carry out light, temporary projects, dedicated to occupy not the traditional places of the furnishing, but rather the interstitial spaces of the domestic economy, taking responsibility of those goods of complement Ignored by the classic design, consisting by furnishings at the bordering of superfluous: Coffee cups, clothes pegs, goldfish tanks, egg holders, paper*

jars, up to small poetic inventions made of folding baskets, molds for popsicles or wearable napkins " (Branzi, 2008 (ed. 2015), p. 220).

What Branzi previously inferred is reflecting because the peculiarity of the young contemporary designers (forerunners of a new way of understanding design) consists in the fact of working for sectors and territories not exclusive of design, in the ability to propose non-elitist projects but for the scenario of an 'objective' society that finds in objects and in their nature not only the answer to functional needs but also a response to their identity system (Branzi, 2007).

Moreover, the human history teaches that objects have never had the task of responding only to needs from a functional point of view; human has always sought even seemingly unnecessary objects.

Endures thus, a desire to move away from the industrial design stereotypes and, simultaneously, approach the artisan world, rediscovering the materials and shapes values as they appear in nature, to meet in fact, the soul of things and true material perception (ibid.).

CHAPTER 2

Matter’s perception

This chapter will be dedicated to the matter of which an object is composed. Shall be sought to enter specifically on those not 'visible' and 'intangible' characteristics that the object is able to transmit highlighting the material and emotional significance that goes beyond the shape and tangible matter.

The first chapter has been concluded talking about the difference between craftsmanship and design, outlining all aspects of the case. Shall be sought to resume the statement in this chapter of the discussion by adopting a more 'emotional' and 'personal' (understood as the person acting on the object) vision, starting from the analysis of that type of design that Maldonado defines as '*warm design'* and '*cold design*’.

Thereafter, in the second paragraph, will be faced the *soul* that an object is able to own when has been crafted and, at the same time, the strong relation that exist between human and object. Furthermore, the concentration moves on the objects, taking into consideration the ceramic material artefacts outlining all the characteristics that this material is able to evoke. The last sub-chapter will be devoted to a fundamental notion for the drafting of this discussion; is tackled the material imperfection theme by analyzing it on how it evolved in the western world and as opposed in the eastern world examining the discipline of *wabi-sabi* that makes the imperfection point of strength of the object.

2.1 The handmade operation

A theme related to the material perception and manual work disappearance on the object (post-war started and associated with industrial

production) was already discussed by Maldonado in which urges a classification between '*warm design*' and '*cool design*'.

"*It's more than evident the judgement of implicit value in the use of the notions of cold and warm: on the one hand an 'inhuman' design as cold, on the other a 'human' design as warm. To look at all the pre-industrial design was a warm design, meaning handmade by a few and destined for a few*" (Maldonado, 2008).

Maldonado refers to a 'cold design' as the one characterized by an industrial production and destined for mass consumption. As an opposite by 'warm design' he means a design made by few, through non-industrial means and therefore destined to a few social subjects.

The pursuit for objects that transmit the warmth and the imprecision of manual dexterity, with the imprint of the traditions presents itself as a phenomenon that develops in a complementary way to the diffusion of the new technologies and to the rise of completely new types of objects through materials and production techniques, that could allow for a more warmth design (ibid.).

The aim was to recover a more immediate consumer perception of the production process used to produce certain objects, and a rediscovery of its cultural lost dimension, which the massive production tends to eradicate.

As will be discussed in the following paragraph, the manual work applied to the production of an object adds a fundamental value to it. Meaning that it's an equivalent to grant the object a unicity, a memory, an intrinsic value that goes beyond of the simple physical-material structure of the object itself. It is the attribution of a 'soul' to the object that contraposes itself to the 'soulless' typical massive-industrial object (Manzini, 1986, p.51).

Emblematic is the case of many of Campana's brothers project, whom in Brazil have begun to directly construct objects with poor, natural (Fig. 17) and industrial materials such as ropes, water pipes (Fig. 18-19), pressed cardboard, etc., with elementary technology and workshop tools, subsequently arriving at industrial production with Italian companies and continuing to practice and teach a direct and immediate approach with materials and forms.

Figure 17 - Favela Chair by Fernando and Humberto Campana, Edra, Brazil; Wood, glue and nails; https://www.themethodcase.com/vermelha-chair-campana-brothers-edra/

Figure 18 - Fernando and Humberto Campana, Anemone Chair, Edra, Brazil/Italy; Plasting tubing, powder-coated steel, aluminum; https://blog.mearto.com/2016/05/25/find-of-the-week-anemone-chair-by-campana-brothers/

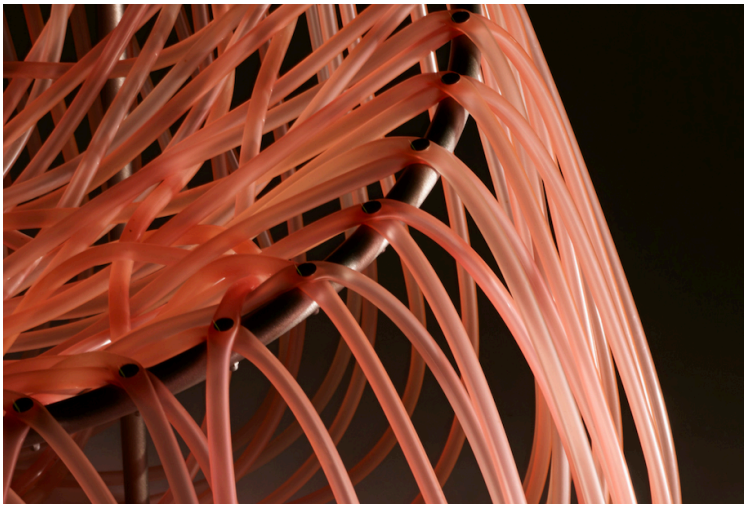


Figure 19 - Anemone Chair (detail), junction between tubes and metal structure; https://blog.mearto.com/2016/05/25/find-of-the-week-anemone-chair-by-campana-brothers/

In the post-industrial era many designers wanted to find a different interpretation key to the traditional way of designing and producing objects, a world-class phenomenon besides the Campana's case in Brazil, is also found in Europe, perhaps with the greatest exponent being found in Droog Design group, a collective of Dutch designers that has as main objective to recognize the conceptual object value starting from a sensation, from an 'intuition' to a 'lean' product. Marcel Wanders sustained in this regard: "*It was not against something; it was a new direction in design. If it had to be against something it would be against a superficial way of designing and copying others, against the lack of original ideas*" (Wanders, 2010).

The sensory experience and the human component have always been fundamental for the breakthrough of their projects, testifies the *Do Hit Chair* (Fig. 20) product where, in this case, the manual intervention brings a personalization of the object insofar the person has the power to shape it in the form that it desires. This is a clear example of an industrialization process of the object that is still not finished when it arrives to the final customer. It is the final customer who decides, by applying a manual and often random intervention on the industrial artefact, to finalize it. With response the design process of the object and the object itself receive a deeper meaning.

Figure 20 - Do Hit Chair, Marijin van der Poll, Droog Design, 2000; Stainless steel; personalization; https://www.droog.com/webshop/product/do-hit-chair-non-hitnew

Is through a manual dexterity and a strong personal component that the design idea develops and is loaded by deep meanings. The continuous experimentation allows the practices evolution, as these examined, that come to change to follow the thin line of demarcation between design and art. Working techniques that become real performances creating unique objects.

Manual intervention, independently of creating an object with its own hands or modifying an industrial artefact as the examples cited above, indisputably increases the perception/value of materials used, changing its connotations, shaping it, creating connections between human and materials and the way how materials are processed into projects. As a backlash of mass production, is possible to perceive a growing desire to preserve and celebrate material and craft tradition. In an industrialized production epoch, takes place a drawn back towards the objects as a vessel to tell stories and encompass narrative.

2.2 The soul of Things

Nowadays, the peculiarity of young contemporary designers lies in the fact of working for non-exclusive sectors of design, in the ability to propose non-elite objects but for the society scenario that finds in the objects and in the deepest nature not only the answer to the functional necessities but also a response to their own identity system (Branzi, 2007).

Moreover, the human history taught that objects have never had the task of responding only to needs from a functional point of view; the human has always sought even today seemingly unnecessary objects: "*There is a great need of them. Just look inside the houses. Flower pots, for example, are something useless, yet they are part of the human tradition. These are a symbol, something that nobody can explain or know how to explain. Overall, the relationship between human and objects has never been explained. If it were, it would be the end of design*" (Branzi, 2017).

In this direction, 'produce' moves from material objects and functional to those related to the meaning, to the symbol, so to a system of values that is established between the object and its users. And it is in this set of values that is sought the soul of Things. This animistic design approach is strongly found in Formafantasma's projects that between Italian and Dutch connections manage to impress on their objects a spontaneous and peculiar approach by founding their identity on an alchemy of research on materials and on a creative cue (Fig. 21-22). This reasoning strengthens itself by materialization in tangible, strongly laden with meanings and presence elements. *"Surely the way we work with materials is not only related to their technical properties but also to expressive and narrative, [...] we could probably say that there is an animistic element in the way we approach the materials*" (Formafantasma, 2017).

Figure 21 - Formafantasma, De Natura Fossilium, Lipari bowl; Lava from Mount Etna, Sicily; https://www.de-zeen.com/2014/03/31/forma-fantasma-experiment-with-lava-furniture-collection/

Figure 22 - Formafantasma, Botanica V; Unglazed ceramic, natural shellac with wood powder, textile ribbon, glass; http://www.aybar-gallery.com/index.php/works/detail/7/botanica-v

The impression that remains from their works is a sense of magic relativity, which invites us to marvel at what is given for granted and let creativity be the real engine to reinvent the world in which we live.

Alongside, under the most artistic and craftsmanship sphere of the phenomenon of wanting to tell an object or artefact outlining another point of view and not only material-design, is impossible to exclude the figure of Edmund De Waal (Fig. 23), perhaps the most important modern ceramist, that explore the ceramic material its ability to imprint new meanings on objects.

The ceramic material (porcelain in his case) works perfectly in this way, because able to delineate the object-human relationship inasmuch it can

bring back to life the soul of the artefact. An intrinsic soul in the artefact deeply sought during his experience as an artist, in every project/object is in continuous research and obsession for the 'perfect white' or rather what he calls "*White Gold*" (Fig. 24) trying to understand how the mysterious charm of porcelain, its fragility and its color have haunted and conditioned for centuries the fortunes of men, kingdoms and philosophies. (De Wall, 2016). He further claimed: "*Stories and objects share something, a patina, [...] perhaps patina is a process of rubbing back so that the essential is revealed but it also seems additive, in the way that a piece of oak furniture gains over years and years of polishing*" (De Waal, 2010, p. 520).

Figure 23 - Edmund de Waal, working porcelain on the wheel; https://www.artspace.com/magazine/interviews_features/book_report/things-can-be-stilled-without-stopping-edmund-de-waals-on-the-poetry-of-pottery-54734

Figure 24 – White, Edmund de Waal; White porcelain objects exposition; http://www.carolebamford.com/edmund-de-waal-white/

The introduction and development of ceramic materials processing opens a topic of interest for this treatment that has to deal with the material expressiveness. Thanks to its ability to be molded, the ceramic can take different finishes and it's therefore difficult to associate this material with known cultural meanings. Defined as eternal material (Mari, 2010), the ceramic has the ability to bind to collective memory by transferring past meanings. The objects of the most recent generation appear more and more often such that we can perhaps say what they appear to be made of, but we cannot actually state with certainty, what they really made of. At this purpose, Manzini makes a clear reflection on this issue as it states that the way in which we perceive the material and its acceptance is first of all a cultural matter. If the Western culture is not able to really appreciate the patina, the ageing of the surfaces and the imperfections of the artefacts, with the exceptions due to the materials whose defects and aging have been culturized, nowadays, that materials are reduced to 'images of themselves' (Manzini, 1986, p. 192).

If it is true that the soul of objects is often intrinsic to the material perception of the object created by human, the object itself belongs to people, as Manzini says: "*It is like if there were no more stable forms on which to sediment the memory and to grow the thickness of the experience. Hence the discomfort and nostalgia of a lost reality for many, and for some, the search in the signs and materials of the past of those values of thickness and depth that seem to vanish in the contemporary world*" (Manzini, 1989, pp.22).

According to Manzini the relationship with objects is fundamental and with the introduction of some materials less rooted in collective memory, this relationship is likely to break. He states: "*Our relationship with the real also passes through this ability to give names: see, touch, taste and, in the end, recognize, that is to attribute on the basis of this subjective and local experience of the broader meanings, in turn synthesized in a name, [...] the stone and its durability, wood is the symbol of the passage of time, wool is the warmth of intimacy, steel is the cold force*" (Manzini, 1986, pp. 31).

This new design perception is beyond the functional and material aspects of the products in support of a design that refers mainly to intangible values. The design, conceived in this way, becomes more and more widespread involving a plurality of actors; it approaches the themes of narrativity, and the designer becomes the mediator of messages that are outside the traditional fields of design.

The soul of Things, that is intrinsic to the object, stablishes a strong relationship with people, creating a continuous *loop*, and spreading in a pervasive way, it becomes part of our daily. Paraphrasing the words of Ezio Manzini, with reference to the widespread industriousness that characterizes the contemporary, we can associate the design making to a marathon where everybody can take part in, everyone manages to run (Manzini, 2015, pp. 37).

The craftsmen with whom some designers collaborate for example, run, carry on the knowing of 'how to do'; design is and must be a good athlete, undertakes to design for the territory and with the territory making the work of small artisan realities contemporary. The important thing in this marathon is not to stop, rather to give oneself a hand in facilitating the attainment of the objectives by those who seek in their daily lives, designing, realizing and making choices, the soul of Things.

2.3 Valorizing imperfection

"*Valuing imperfection is a way to express everyday reality and create innovation. By bending imperfections to our will, intersecting them and imbuing them with aesthetic value, a new language can emerge*" (Parisi, Rognoli, 2016, pp. 82).

Is with this Parisi's quotation that is necessary to open this sub-chapter fundamental for the drafting of this thesis as the focal point of the project path that has as its main theme the imperfection. But to understand the real reason why always more designers and artists want to give more space to experimentation by valuing the imperfection of an object or artefact, is important to start from modern Western culture.

The modern Western culture is so accustomed to think of the artefacts that surround them as objects made by materials whose surfaces are inert, homogeneous, smooth and flawless, that when a surface begins to show the signs of time and use, according to the way of understanding aging, it is as if the object itself is losing quality and value (although many times its functionality performance remains untouched. The aesthetic approach around this idea is dominated by the perfection quest that is seen by the preference upon shiny materials with homogeneous colors and textures that industrial production has strived to achieve.

The Western culture is so strongly conditioned by this paradigm of perfection that, at the same time, it struggles to conceive a valorization of imperfection (Tanizaki, 1982). Nowadays is growing the interest that the phenomenon of *wabi-sabi* brings to the eyes of many designers and artists in the West, this can occur, trivially, the proliferation of activities such as blogs and internet sites that deal with the idea and precepts *wabi-sabi*. This happens because very often in the West it happens that this discipline is wrongly perceived only the aesthetic side, at the expense of the most conceptual, or what represents the true strength. As a consequence, what is termed this phenomenon in the West is often a mere formal imitation of the original. "*The meeting of the artificial and the natural, of the order and the disorder, the machine-made (in series) and the fixed by hand (handcrafted): this is the teaching of an aesthetic of the asymmetrical that today comes mainly from the East but that today is penetrating deeply even in our Western sensibilities. Trouble though, to introduce us, we believe that is sufficient an amount of inaccuracy or a bit of whim*" (Dorfles, 1986).

It is well known that it is not always possible to eradicate deep cultural context concepts that generated them and that saw their development. Often the eradication brings with it some misunderstandings, associated with the risk of partial or misleading reinterpretations of the original concept; For these reasons, very often the examples of *wabi-sabi* in the West are limited to formally resuming solutions of an anesthetizing nature.

If Western culture is not able to really appreciate that which Edmund de Waal defines *patina*, the ageing of the surfaces and the imperfections of the artefacts, with the exceptions due to the materials whose faults and ageing have been culturized (Manzini, 1986, p. 193), the conception that the Orientals have about the aging of matter and of the artefacts is radically different. In contrast to the western world, Oriental culture is based on an aesthetic approach deriving from Zen philosophy and better known as *wabi-sabi* (Fig. 25), so there are no beautiful/ugly, good/bad,

right/wrong dualisms, is a culture in which in the imperfection an indecipherable beauty is recognized (Tanizaki, 1982). This traditional aesthetic approach bases its main features on asymmetry, asperities, simplicity, austerity, modesty, intimacy and appreciation of the genuine integrity of objects and natural processes. According to this aesthetics, the imperfection, the asymmetry, the incomplete (and also the damaged and the reassembled) are very useful for the aesthetic appreciation of the world and this is a world that is continually changing its 'perfect' condition (Parisi, Rognoli, 2016, pp.81).

Figure 25 – White porcelain bowls that explain the meaning of wabi-sabi, http://fuetmagazine.com/wabi-sabi-y-el-arte-de-la-imperfeccion-en-la-cocina/

Using the aesthetic system of *wabi-sabi* as reference and combining it with the observation of imperfection in objects, has been developed a series of aesthetic principles. They revealed essential to keep in mind the sensations able to evoke through an aesthetic of imperfection:

- *Impermanence*: the manifestation of a natural processes; it expresses the vulnerability of things (both natural and handmade) to the effects of time and use, which inevitably transform them.

- *Narrative*: the objects' power of recording the transience of reality, by visualizing the signs of wearing and aging. This way memories are carried in a concrete and long-lasting way.
- *Irregularity*: the embracement of what collides with the ordered perfection, appearing odd and misshapen.
- *Rawness*: the exaltation of what is rough and unrefined, of the unprocessed materiality in its original in its original and natural condition, characterized by coarse textures and tactility.
- *Blurriness*: the beauty of the vague, uncertain and not defined. Shapes have soft edges. Strong colors fade away, clear distinctions are avoided.
- *Spontaneity*: imperfect beauty should not be constrained by rigid rules, but rather guided or just discovered in nature.
- *Honesty*: the (natural of artificial) process which forms things should not be hidden.
- *Unpretentiousness*: imperfect things are ordinary, humble and understated.
- *Intimacy*: they do not create distance with people.
- *Empathy*: the manifestation of a shared sensation of uniqueness between the object and the observer, as consequence of a shared imperfection.
- *Simplicity*: imperfection is hidden in the essential but not emotionally cold.

The series of principles listed above aims at fostering an alternative way of looking and thinking about things, supporting a different interpretation of beauty, in contraposition with the standardized one. Giving value to an imperfect condition leads to a reconsideration of the relationship that a person has with everyday objects, because imperfections can be pleasing and help to create a bond with the user. This is the result of a deeper relationship with these objects, in which surfaces and materials have a new aesthetic, based on defects and associated with imperfection.

This novel approach to material aesthetics also explains designer interest in the use of unique materials, where imperfection becomes synonymous with added value, originality and personalization. Hella Jongerius (Fig. 26) and the already above-mentioned Gaetano Pesce (Fig. 27) are two of the first names amongst great contemporary designers who explore ways to add values through defects and imperfect variations from a mix of craft and industrial production.

Figure 26 - Hella Jongerius, 7 Pots / 3 Centuries / 2 Materials; Porcelain, medieval shards of old ceramic urns (Museum Boijmans Van Beuningen, collection), spray paint lacquer (Toyota red and Mercedes silver); http://www.jongeriuslab.com/work/7-pots-3-centuries-2-materials

Figure 27 - Gaetano Pesce, Pratt Chair (no. 7); Transparent polyurethane; http://www.artnet.fr/artistes/gaetano-pesce/a-pratt-chair-no-7-esrW8gFSldtFMXeBhOyurg2

Western culture has always seemed interested in perfection, in the regularity and clean lines that the development of science and technology have made possible. In fact, we could say that technological development has been led and driven by a trend toward perfection (Rognoli, Karana, 2013).

However, we are witnessing a change of direction: designers are proving to be able to cherish the value of imperfection and to explore it as a driver of innovation and catalyst of experiences, emotions and new expressiveness. Can be inferred that designers, mostly talking about self-productions, start to feel the need to reintroduce anomalies, defects and imperfections, all elements that can evoke the human presence, traces of human being. The added value brought by imperfection, defects, and traces is a way of expressing workaday reality and creating innovation.

As will be tackled in the next chapter, the theme of the imperfection of material and compositional artefact in the field of design and craftsmanship, implies the advent of the unique piece understood as not replicable a second time during an industrial process as the intent of adding value to imperfections regards also industrial phenomena generating products characterized by aesthetic and morphological lack of homogeneity, currently bound to be rejected.

CHAPTER 3

The unique piece

Referring to the argument faced in the previous chapter, the theme of imperfection (concerning to a craft or to an industrial process), brings to life an object/artefact that is distinguished from the Western canons: material, formal and compositional perfection. At this purpose Vitta (2011, p. 315) perfectly addresses this topic: "*The meeting between design and craft production was attempted not as a return to an impossible tradition of pure craftmanship, but as a practice of the small series or the unique piece, parallel to that of industrial seriality. In it the object aspired to assume an individualizing value: The form itself was proposed as decoration, in a freedom of solutions that invited to the creation of a subjective and comfortable space".* This enhancement of imperfection has no connection with an aesthetic or conceptual preference for manual work and craftmanship; It simply shows an acceptance or even a taste for unpredictable errors in production processes, whatever they may be. Revealing traces of 'humanity' such as use, ageing or deterioration.

The concept of singularity in design context is something that binds closely with craftsmanship inasmuch the designer-craftsman use it the main production way his/her own hands and experimentation. As Mari (2010) stated in an interview: "*The form of a hand, which could be a hand of a child, an old man or a pianist, as hands are all different depending on the person, is always perfect because it is linked to the movements that hand has to carry out [...] we cannot infer that a hand is ugly or beautiful, a hand is always accurate and perfect*.

It can be inferred that a handmade artefact is always accurate even if it conveys a high sense of imperfection (referring to the Western canons faced in the previous chapter). When there is such a strong relationship between designer and object something unique arises, which has

characteristics similar to other objects but is differs in its kind even if it is part of a mass production. In this paragraph is tackled the importance of the unique piece created by a process, where industrial production and crafts give rise to an object (defining it involuntary), valuing it by its controlled imperfections.

Two strategies can be outlined in order to achieve an industrial controlled imperfection: randomness during a design process, leading to more or less 'involuntary' objects (because the material, not being tied to the *shape*, can react spontaneously creating unpredictable and abnormal forms, textures and meanings completely unexpected); and a 'Do It Yourself' (DIY) approach - which is the self-production and 'handmade' design, implying a limited manual process able to create objects or artefacts calibrated on a small scale and full-fledged unique pieces.

3.1 The involuntary object

To demonstrate the involuntary production process is often possible to interact with design limits, for example exaggerate the design process exalting the *errors* (subject that will be taken into account in the further chapter), or by intervening subsequently on the object in relation to its production. Valuing imperfection is a way to express everyday reality and create innovation by bending imperfections to our will, intersecting and imbuing them with aesthetic value - where a new language can emerge (Parisi, Rognoli, 2016, p. 82).

As detailed in depth in the previous chapter about *wabi-sabi*, the sense of imperfection and defect can acquire a positive meaning since they lend uniqueness to the object; This is possible when the designer leaves something of himself during the design or realization (when it's about the craftmanship or DIY) of the object. Thus, an empathetic relationship develops between the designer and object. Has Sauvaunet emphasizes: "*The artefact comes out of its material boundaries to indicate a further reality which*

melts it. Creation therefore does not respond to a particular rational project, but it is a discovery for the artist himself, who becomes a spectator of his work" (Sauvaunet, 2004, pp. 67-68).

In the involuntary object it is revealed a connection (or disconnection) between human and product method. This reflects our present-day situation, where people's role within the industrial production process are under threat by automation. The involuntary is created because within the design process there is a percentage of randomness or non-control of the matter that is being worked, randomness given both from the material/behavioral point of view of the materials (or as a material reacts respect to a specific processing), and by a randomness given by the human being, insofar is not able to predict the behavior of matter during a process, therefore not being able to change the 'inevitable' (Solanky, 2018). A paradigmatic example of this can be found in Anton Alvarez work, *Alphabet Aerobics* (Fig. 28-29).

Figure 28 - Alphabet Aerobics, Anton Alvarez, 2016; The Extruder process; Photo by Anton Alvarez; http://antonalvarez.com/#11

Figure 29 - Alphabet Aerobics, Anton Alvarez., 2016; Untitled ceramic extruded; Photo by Anton Alvarez; http://antonalvarez.com/#11

When this technique is applied to industrially produced objects, it gains strength, because it draws a sharp line of demarcation between the *seriality* and the *unique piece*. When the 'involuntary process' is faced during standardized processes shall be taken to mean the intervention with which the production is amended, going to intervene on the object subsequently modifying the standardized cycle production. The pristine object, in this case, takes on a new connotation enriching itself with a different aesthetic, of foreign meaning, traceable to an artistic action that produces unique but industrial pieces, that wink at daily gesture (e.g. in Fig. 30, the gesture to smash a plastic object).

Figure 30 – Saving/Space/Vase designed by Joevelluto for Plust; Pressing process on a plastic vase; https://www.arredinitaly.com/vaso-plust-saving-space-vase-it.html

Another interesting project to account for 'involuntary objects' is the collection of *Indiscipline* vases by Quentine De Coster (Fig. 31). Here we can observe the ceramic artefact is deformed randomly in a completely natural way once it has come out from the mold in a period of time when the

ceramic is still malleable; It is therefore obtained unique pieces generated by a single starting matrix. Other product able to emphasize the random and involuntary process is *Viagem* (*The Journey*) (Fig. 32), a project designed by Fernando Brizio whereby still-wet ceramic pieces are formed and deformed into a back of a car and drove a predetermined route over that left the vases all lopsided. The car wave allows the object to load itself with unique and distinct shapes, able to tell that journey that is imprinted on the surface of the individual object; resulting in a physical manifestation of losing a memory shape, the object shall automatically acquires another one obtaining a new meaning, a new memory.

Figure 31 - Indiscipline, Quentin de Coster; Porcelain Slip vases; https://www.quentindecoster.com/#/indiscipline/

Figure 32 - Viagem, Fernando Brizio; Self-production; Photo by Fernando Brizio; https://www.ensci.com/lais-serfaire/journey.html

What is achieved is a series products line but with different objects from each other because the coefficient of *randomness* has allowed the matter to change *form* enhancing the individual object, changing it in one, as different from each other.

3.2 DIY, an approach that enhances the unique piece

This sub-chapter aims to outline a typology of design that is taking off among the young designers: the DIY (*Do It Yourself*). As the expression clarifies, it refers to the self-production of objects or artefacts, often using industrial processing scraps or natural composition materials. It is possible to discuss the phenomenon of DIY related to the unique piece inasmuch is a self-production completely or almost entirely 'artisan' (i.e. without the use of specialized industrial machinery) and therefore able to give life to a very peculiar objects or artefacts with a strong aesthetic and poetic component as they are usually unique objects or produced in very small-scales so to emphasize the difference between each piece. There is therefore, speaking of DIY, a strong manual approach so to make the object as unique as possible.

The DIY phenomenon can be defined as an emergent practice in design in which all these aspects are evident, able to give a new approach to production, that as a modern artisan or alchemic practice exhibits the signs of the process that created them, presenting uneven and formless surfaces. This process allows designers to imprint and transfer on matter their own experience and history, thus making it a memory-related surface. A good example of such approach can be retrieved from Max lam sandcasting objects (Fig. 33-34).

Figure 33 - Pewter Stool, Max Lamb, 2006; Metal casting; https://www.dezeen.com/2012/11/28/dezeen-book-of-ideas-pewter-stool-by-max-lamb/

Figure 34 - Pewter Stool, Max Lamb, 2006; Metal stool made by sand casting; http://maxlamb.org/031-pewter-stool/

Therefore, is changing the way to conceive the material processing where the self-production material provides an opportunity to reconsider the features of existing manufacturing and industrialized material properties, in order to create new objects with unique qualities. In fact, they are often unique because produced in small-scale series in which each piece is different. Due to their simplicity, immediacy and raw look they have been the object of harsh criticism, since they appeared to result from non-design as theorized by Renny Ramaker in his book *Less + More, Droog design in context* (1998), they produce a strong contrast to the abundance of visual crowding present in the market today. The self-produced objects are the bearers of small ideas, of 'different looks', of lifestyles and daily routines, a kind of poetic autobiography able to brings back personal memories.

Recovery and reinvention are the main talents of the craftsman-bricoleur, who deconstructs, cuts, merges, or simply shifts the sense of a thing or a substance using it in an unexpected way (Ferrara, 2011); restores the life of objects re-contextualizing them, redefining 'things' starting from the production process, their expressive language, their functional value and the way that they will maintain or renew their way of life.

With the DIY Materials is possible to create unique, imperfect and perishable objects where the time and the random process (being a handmade artefact) are fundamental and become a characterizing part of the final object. In creating DIY materials, design capability is influenced and shaped interchangeably through *learning by doing* and *learning by interacting*. A contemporary opinion adds to this topic the notion of craft, explaining that craft is a mean for logically thinking through senses (Nimkulrat, 2010). Entering therefore into the world of sensorial understanding of things as a mean for designers to do research, craft is understood not only as a way of making things by hand, but also a way of thinking through the hand manipulation of a material (ibid.).

Designers may express themselves by applying both unique materials and products that can reveal their personal touch. Such an example can be seen in the case of Marjan van Aubel and James Shaw with their '*Well Proven Chair* ' (Fig. 35) - where a surprising and bizarre foaming reaction that occurred between soya bio resin and sawdust waste harvested from their London workshop. The reaction caused the porridge-like mixture to randomly expand before setting into a strong, moldable, lightweight foamed material.

Figure 35 - Well Proven Chair, Marjan van Aubel and James Shaw; Moulding process; https://materialdistrict.com/article/well-proven-chair/

Common to all examples showed before in this chapter is the designers' ability to create unique, personal, and non-repeatable material applications. This is manifested through imperfect surface qualities, attributable to the uniqueness of the performance that defines self-production processes.

In DIY materials design practices, the designer becomes a craftsperson, able to build and modify the tools for own production aims. A result of the DIY materials design process is the new aesthetic expressions on imperfect aesthetic qualities that sow the existence of an alchemist's (designer) manual labour and craftmanship, enhancing traces of humanity. On an emotional level, DIY materials can facilitate attachment due to their self-produced and unique nature (Maffei, et al., 2015), they can even generate surprise, amongst those who come into contact with the results. The design and production approach observed is often *naïve* and free from preconceptions related to structured industrial production approaches.

As we find in Druker's writings, DIY materials self-producers have an enormous potential for failure and simultaneously to create errors.
The DIY materials are created through individual or collective self-production practices, often by techniques and processes of the designer's own

invention (randomness). Thanks to their uniqueness, the DIY material objects offer great opportunities to positively contribute to product design through material experimentation and shared production processes (Druker, 2002).

As mentioned above, it can therefore be argued that the DIY design process is a process that can be defined ‘random’ because, during the design process, are used ‘extraneous' or 'uncommon' materials to give life to an artefact. Thus, defined as a random process, the DIY process can give life to design errors related both to the process and to the matter that composes the artefact itself. Such errors can be of crucial importance as they characterize the object in a totalitarian manner capable of making it unique and unequivocal.

CHAPTER 4

The error

In this chapter we will focus on the value of *error*, understood as imperfection, defect. Error in the sense that it generates a result different from the initial desired one. It outlines a clear ideological difference based on the concept of error between industrial production and craftsmanship from the point of view of design: In the first case will be sought to understand why the error of industrial piece (often caused by mechanical malfunctioning) is understood as an element of rejection and aberration and on the other hand under the artisan sphere of imagining an imperfect artefact, the error is seen as a quality element because it goes to characterize the object in a unique way.

As widely explained in the preceding chapter, the error is understood as an element of imperfection, and therefore becomes a fundamental element when a strong human component is imprinted to an artefact. From the industrial sphere will be tackle the concept of process experimentation through the creative act put in place by the designers as unconscious of the results, for the fact they experience both processes and materials, to give life to 'new' unique artefact. In the last paragraph of this chapter will be mainly the meaning of the *serendipity* term linked to a design process and will look for in it a new identity linked to the artefact as it can enhance intrinsic characteristics to itself and to find new emotional interactions between designers and objects.

4.1 The meaning according to the Western industrial mentality

In the West, as already mentioned in the chapter 'Valorizing imperfection' (see chap. 2.3), feelings related to a condition of strong variability and degradability concerning an object and its method of manufacture assume

a negative connotation, often associated with an idea of loss, so errors become synonymous with imperfections or defects and the passage of time is often considered as degradation or wear.

In the Western industrial mentality, such industrial products, presenting imperfections translated as productive irregularities, are thus discarded from the production line and consecutively from the stores as they do not correspond to 'standards of beauty' that mass consumption requires and then ends up becoming discard elements. In this case the aesthetic factor is everything: it becomes a main element based on factors of perfection and formal purity (Ostuzzi, et al., 2011).

The imperfections of the object, in the Western world, are also seen and above all as faults (which from the Latin *defectus*, lack, *de-ficere*, to be missing, to fail) implying therefore a scarcity, a failure, a mistake. The word defect is accompanied by obvious negative connotations, causing the removal from the idea and model of perfection desired. For this reason, in industrial processes, the errors and the signs of the production, such as the injection point, the burrs, the backwash, the drafts or the welds, are inclined to eliminate them or to hide them as elements that diminish the value of the object, if visible. These factors commonly considered 'production defects', however, conceal the narrative of the production process. An explicit case is the Hella Jongerius' vase project *Soft Urn* (Fig. 36) where the archetypal form reveals the result of research into ageing of an unconventional material for vases, PU rubber. Whereas most artificial materials look forever young, neutral and hygienic, *Soft Urn* has the feel of handicraft due to the addition of traces of the casting process (Fig. 37). Here the defect manifests itself in a preponderant way, but instead of being seen as a negative element, this defect is no longer something wrong, but rather represents something that, moving away from the concept of theoretical perfection, approaches the human and natural sphere.

Above: Figure 36 - Soft Urn, Hella Jongerius; Vase in PU rubber; http://www.jongeri-uslab.com/work/soft-urn

Right: Figure 37 – Soft Urn, casting process detail; https://www.boijmans.nl/collectie/kunstwerken/140812/soft-urn-zachte-urn

At the same time, the predilection for the defects and consequently the uniqueness of the piece, are typical of the epochs that foster the craftsmanship operate, considered of greater value and quality by the common opinion (Ostuzzi, et al., 2010). According to an oriented approach to the enhancement of the defect, a series of non-conforming products can be marketed and valued thanks to their difference compared to other products of the same series. The defects that can be managed according to this mode become mainly purely aesthetic defects and being non-conforming are accepted as such and are worked in this direction in order to identify their possible alternative use, without having to put them off, but to change the use and function originally planned. The advantages that derive from this are both emotional, for the user's awareness of owning

an entirely unique object, and also above all environmental (as well as economic) for avoiding the loss of a piece of production and for subtracting an additional volume to disposal. In light of this, quoting the Chapman's (2005), "*Giving up to total control*" can therefore be desirable. Avoiding the over-programming and allowing for errors, variations and modifications accumulate even randomly on the product itself, by acquiring the aesthetic potential of an unusual phenotype. The legitimation of the defect, where possible, is proposed.

4.2 The error during design experimentation

The designers live the technological innovations as creative stimuli, as inputs able to activate that conceptual processes that leads to the generation of new ideas, to undermine the consolidated knowledge, or to introduce elements of discontinuity compared to the current thought (Ostuzzi, et, al., 2011). This is one of the uncoded methods, developed independently and personalized by designers who use it to self-generate new productive ideas, to conceive what has never been done before and is able to open new horizons or different perspectives.

In this way the concept of DIY is concretely developed, already taken into account in the previous chapter (see chap. 3.2), as designers are constantly looking for technical and especially material innovations, always vigilant to innovations, to new possibilities offered by a material, a texture, a surface or an image that could be adapted to an innovative project. In these terms when one tries to innovate (or renew) turns into *experimentation*; This experimentation binds in a preponderant way to the materials where the designers find in them their own emotional pleasure and sources of sensations to be transferred then in the projects. New ideas can arise from the manipulation of a new material, as evidenced by the research of the aforementioned Gaetano Pesce, whose experimentation, which leads to design faults to be defined production errors, is stimulated

by plastic materials that he modified in an unusual and random way, discovered and reinvented, experimented precisely to become physical symbols of his ideas (Vanlaethem, 1989). Most of his products, in this sense, show peculiar characteristics compared to the products of the time, often criticized, improperly considered *wrong* as they do not conform to the market and where the products themselves did not have those 'standards of beauty' desired and dictated by the Western world by uploading them to new symbolic values and their ability to communicate messages from their aesthetics related to the formal value of the object.

Another project of interest important to bring for enhance the experimental act during a process is that one of Annika Frye with *Improvisation Machine* (Fig. 38) in which the German designer, through a 'machine' designed by herself, incorporates experimentation and randomness in a process that industrially would be serial. With this project improvisation implies not having certainty about anything (whether it be the process, the operation of the machine or the behavior of the material itself). Uncertainty and randomness, in this project, therefore, find a point in common with the artefact produced. In her own words: "*Improvisation can't be repeated or planned [...] and therefore I can only try to design somehow the framework in which improvisation will eventually happen*" (Frye, 2012).

Figure 38 - Improvisation Machine, Annika Frye, 2012; https://www.designboom.com/design/the-improvisation-machine-by-annika-frye/

As seen, during a design object, a way to innovate is therefore to experiment mainly techniques, materials and production processes and often the latter, sometimes, cannot be calculated or predicted as it is not clear how the material reacts to a particular design process thus designers may know the direction of their work, but cannot predict whether the direction will remain the same throughout the course of a project.

Hence, having the ability to react spontaneously to one's internal and external environment is crucial (Gerber, 2007). They cannot predict the process inasmuch the component of randomness in this sense is preponderant and this inevitably implies to design errors. This process of randomness leads to talk about the term *serendipity*. A term that will be taken into account and explained in detail in the next sub-chapter linked to new identities of the object. Such errors may lead to technical-design improvements in projection of successive productions or may become a characterizing element linked to the object capable of enhancing it by defining it, by reconnecting itself to the preceding paragraph, *unique* and therefore able to bring out a new design language.

Therefore, it can be affirmed that the experimental attitude has its roots in the material culture of the past (Ferrara, 2015), emerged from artistic and artisan prints. This experimentation has to do with the *homo faber* (concept that human beings are able to control their fate and their environment as a result of the use of tools), which during a manual work develops a creative thinking, in a process that starts from the sensory stimulation and leads to elaborate in parallel visual, tactile and symbolic linguistic information (ibid.).

It can be concluded by stating that experimentation, during a creative process, is linked inextricably to a factor of randomness and unknown. As Eco (2004, p.7) states: "*Creative will not be the one who has drawn something new 'ex nihilo' but the one who It identified, by intuition, for 'trial and error', by chance*".[3]

4.3 A new identity

Referring to the paragraph previously addressed, *the error in the design experimentation* (see chap. 4.2), the *error* can be created thanks to a process of creative experimentation whereby the designer experiments by back door and unknown ways both design and material processes. These types of processes inevitably introduce anomalies, defects and imperfections - all elements that can evoke the *humanity*, traces of human being. The added value brought by imperfection, defects, and traces (intended as marks) is, workaday, a way of expressing reality and creating innovation.

By bending imperfection to our will, intensifying them and imbuing it with new aesthetic value identities, a new image can emerge (Remakers, 2002). The concept of imperfection in products may arise from a wide range of physical features. Between them, one of the most important, are

[3] "*Creativo non sarà allora colui che ha tratto qualcosa di nuovo 'ex nihilo' ma colui che lo ha individuato, per intuizione, per 'trial and error', per caso*". (Eco, U., 2004, *Combinatoria della creatività*, p.7); (free translation by the author)

the materials that products are made of. The resulting objects from this *random* process, therefore, have surprising factors that often translate into emotional elements capable of interacting in a completely new way with the designer. The objects, being laden with formal and decorative elements not entirely desired, owned a strong narrative component and sometimes the mark of the designer himself.

The artefact functionality perception joins with the emotions that have been elicited, highlighting the fact that cognition and emotion are actually two indispensable parts of a creative system (Norman, 2004). A product, therefore, does not necessarily has to be fun to use, as well as an attractive design does not have to be efficient (ibid.).

This change of perspective certainly reflects a recent increased attention to emotions and at the same time a new design identity dictated by the user's experimentation in the creative design of the artefact and the consideration that they are indispensable elements in determining the affective, behavioral and even cognitive dimension of an individual in a situation of interaction.
As previously addressed, the craftmanship intends the error (both given by process and shape) in a completely opposite way from the Western industrial mentality. In this sense, the error, seen as an imperfect element of the artefact, gives a new meaning, a new identity because the acceptance of imperfections is used as a device for uniqueness rather than as a pretext for disposal.

The valorizing of imperfections, which arise during errors in the project path, leads to clarify the connotation of phenomena that generate a different result from that desired, considering the concept of error, which assumes a negative connotation and It appears as an unintended, unwanted event and arises from an incorrectly-made default location. In fact, the error can have a potential of great importance and it is starting from this base that the cases of *serendipity* develop, term coined by Horace Walpole (Walpole, 1754) indicating the sensation that is feels like when is

discover something unsought and unforeseen while is looking for another one or something else. Besides being indicated as sensation, *serendipity* also indicates the element of research, of experimentation.

In this sense it can be affirmed therefore that by bringing to the extreme the concept of serendipity/randomness in the experimental project research phases, can be inferred that in every discovery, as from the rest in every aspect of real life, must be inherent some element of randomness: If the designer already knew exactly what he was looking for, he would not need to look for it, but it would be enough to have a confirmation of a reality that already exists.

In these cases, the error is not ignored, but understood and valued. The error can be transformed into opportunities of innovation and this is sealed with the attribution of a new name (Ostuzzi, et al., 2011). In this regard: "*The error leads to rename. It is through the recognition of a new name that the error is exceeded, it is legitimate. Renaming, to well see, has to do with the optimum use of energy and resources. Rename because the will does not persist in twisting on itself, you rename, trivially, not to throw [...] rename as an act of openness to the new and different*" (Corradin, 2009). In this case the verb *rename* implies a perception of the different error where the potentialities of the error could lead to stimulating effects also in the field of the arts and the project, acting in many cases by thrust to the creativity.

Designer, therefore, instead of channeling their own efforts and capabilities to conceal or eliminate errors or flaws, can find within them interest to add value and individuality to their products.

CHAPTER 5

The object mutation

This chapter will focus on the transformation (ageing) that occurs in an object when it is used and/or time passes through it. It will try to highlight the major and most important characteristics of this phenomenon, trying to understand how the passage of time (a topic that will be found throughout the chapter) can add quality to the object, both in an aesthetic and emotional level.

The first part of this chapter starts with the famous Heraclitus quotation where the river in flood underlines the inexorable passing of time. This step can be read as a metaphor of life in continuous progression, advancing without stopping, even against the will of nature. The time that passes, therefore, leaves a mark, a trace on the object. In so doing, is possible to try to highlight the meanings of such traces that time leaves on objects.

In the second part of this chapter it will be taken into consideration the concept of the time passage and the changes it might lead to the surface of the object. We will try to delineate, in the first instance, what cultural meaning is attributed to the patina of an object. Another interesting matter will be the concept of the 'skin of things', delineating a difference, if it exists (speaking in a behavioral way), between object (surface) and human (skin) keeping as a point of reference the incessant passing of time that is marked on them. It will be seen how the two things, which apparently seem very distant from each other, can be, at a cultural level correlated.

The chapter will be concluded with a paragraph devoted to the voluntary and random process on the object. Will be discussed about the concept of mutation of the object, under the more 'artificial'' sphere of the process inasmuch is the man or the machine that becomes protagonist, capable of changing the objects shape and aesthetics. This is an important topic to treat insofar the human, who is able to mutate the object shape, but does

not have full power over the material as not able to 'tame it'. Thus, also a factor of randomness (hence part of the name given to the paragraph) takes over, able to add meanings and traces to the object entirely uncalculated, and not calculable, by the principal artificer.

5.1 Over time traces

The relentlessness of time has always been a pivotal theme of many different reflections, just as the Greek sensibility had perceived. In this regard, renowned are the Heraclitus' words *'Panta rei os potamòs*' that translated from ancient Greek means 'everything flows like a river'. In this sense, the metaphorical image of a river in flood underlines the passage of time, impossible to stem, that changes any form constituted.

From this introductory perspective it is possible to bring back the thread of discussion to the world of design, where, just as time marks every materiality, the object itself is also destined to reap the aftermaths of its unyielding. A fundamental factor able to characterize in a unique way the object, the *time* is manifested with elements of discontinuity on its surface, often originally homogeneous. As Manzini (1986, p. 193) states: "*Proposing an image without duration, it can be possible to think of entering other objects that last 'knowing how to age', playing a role of memory support and working as slow analog clocks, which mark with their change the passage of time*".[4]

Referring to the topics discussed in the previous chapters, the market appreciates more the smooth, glistening object, with its uniform color in its entirety (Ostuzzi, et al., 2011). The product is therefore endowed with a phenomenological value easily associated to the operations that have

[4] "*Proponendo un'immagine senza durata, si può pensare di immettere altri oggetti che durano 'sapendo invecchiare', svolgendo un ruolo di supporto della memoria e funzionando come lenti orologi analogici, che segnano con il loro cambiamento il trascorrere del tempo*". (Manzini, E., 1986, *La materia dell'innovazione*, Milano, Arcadia, p. 193); (free transaltion by the author)

generated it: the design, the technologies used in the industry, the assembly, etc. Thus, begins the story of an object, which binds it to the company that produced it, able to relate to the user's everyday life. The interaction of man and the environment with the object inevitably leaves traces that will lead, over time, to the growing distinction of the product compared to its 'twins' (for twins it means the other products, part of the same series production line). It can be said that every object, albeit manufactured industrially, begins to live as it is in close and constant relationship with human (Ostuzzi, et al., 2011). This interaction symptom between seemingly *inanimate matter* (object) and *living matter* (man) comes to life. This relationship is visible through the *sign* that can be understood as something that expresses, tells and dialogues; A sign as a visible imprint, as a *narrative element*; The sign as a trace. This last meaning is particularly interesting for the topic here treated, as the concept of sign as a trace includes in itself the idea of time, path, evocation and memory.

A sign as a *trace* is something indelible, permanent, profound and durable. The trace is always a trace of someone or something: it is therefore belonging, that one goes to solidify itself because the sign of the time left and imprinted by the human (usury) is pressed on the surface of the object and it goes to characterize it in a unique and unequivocal way (ibid.).

Time traces and use traces refer to the system of artefacts that composes the daily life of each individual. Every object, regardless of whether it is artisan or industrial, over time and wear, leaves on it a narrative, a track indeed. There are traces for example linked to the time, generated by its simple flow, by the interaction with the surrounding environment where the climate and nature leave indelible traces of the passage of time thus affecting the patina of the object (part that will be taken in consideration in the next sub-chapter), intentional traces, or implemented with the intent of appropriation and accidental traces, or inevitably arising from the normal use of the product. In the first case it’s reported the example of *Do Scratch* (Fig. 39), a lamp designed by Marti Guixè in which, in order

to make it functional, the user has to take an action to be creative and to scratch the surface in order to let the light pass. Every single piece is so unique that the user becomes co-designer, participating in the (formal) creation of his lamp.

Figure 39 - Do Scratch, Martin Guixè, Droog Design, (2002); http://www.guixe.com/products/DROOG_do_scratch/do_scratch.html

Another example can be seen in the project conceived by Odoardo Fioravanti with *Verderame* (Fig. 40) in which the designer takes into account the ageing of the surface and upstream incorporates it into the project, using it as a mechanism to enhance aesthetically or emotionally the artefact surfaces; Unlike the dynamic surfaces subjected to the natural ageing and the patina, these surfaces are transformed in relation to the user, and not only to the environment.

Figure 40 - Verderame, Odoardo Fioravanti, The Italian Copper Institute, 2009; http://www.fioravanti.eu/project/verderame

The passage of time that is impresses on objects is not seen in the same way by all, in fact, as already long quoted during the whole drafting of this treatment, each macro-culture has its interpretation of evaluation of the object once 'lived'. If the oriental perception of *wabi-sabi* was widely spread in all aspects of life based on ageing including the inexorable passing of time that constantly changes surfaces and shapes, in the Western world it is customary instead to think that aging of the object is a symptom of non-quality (Tanizaki, 1982), but today even in the West, the myth of perfection is denied by the fragility and degradation of materials, even by the new 'perfect materials' such as plastics, and by the possibility of error and imprecision in industrial processes.

Is realizable that every material is not inert surface, but a living and changeable organism able to create relationships with environment and users. Thus, time and use signs approach that aims to considering artefacts as dynamic, changeable entities, evolving in the time instead of the conventional conception of static objects. Objects are supposed to react as living entities growing and evolving with users, sharing with him/her experiences and moods. The mutation, characterized by the first instance by randomness, mutability and non-programmability of the material, is considered as a bearer of uniqueness and exclusivity (Parisi, Rognoli, 2016).

To support of this, the book "*Eternally Yours, time in design*" (van Hinte, 2004), represents one of the best researches about the aforementioned

condition. The results of the expert's roundtable proposed the elongation of artefacts' life-cycle based on the emotional attachment by user through the valorization of imperfections, time and use signs, specifically designed. Furthermore, *Eternally Yours, time in design* suggests the creation of objects able to change in time and according to users' ways of interaction with the aim of avoiding "the fear and the discomfort of objects that always appears to us as unknown" (Sartwell, 2006).

The concept of the 'passing of time' in products may arise from a wide range of physical features and between them one of the most important are the materials that products are made of. The essential concept is, as Giaccardi (2015, p. 27) stated "*Materials are not simply what objects are made of. They invite, suggest, facilitate, and collaborate with the unfolding of our activities and respond to these activities by aging, changing their appearance*". As people interact with objects, material surfaces inevitably change their initial qualities and manifest traces in form of alterations, 'scars', defects and imperfections. There are materials that degrade only and other that conversely mature. This positive term of mature is reserved to natural and organic materials as, wood, leather, and so on. So, is possible to infer that the ability to receive traces is not the same for all the materials and in general, for natural material it's easier to support traces due to time and use.

Imperfections, defects and traces are related to concepts like aging, patina and maturation of materials (Saito, 2007) inasmuch certain materials, more than others, have the ability to manifest the traces of aging due to the usage and/or the passage of time. In fact, time and usage can create another set of surfaces (Fisher, 2004). In this sense, traces on material become as texture for communicate a story, a value inherent to the material, and, in this perspective, there's a possibility by the product designer to conceive objects made of materials able to valorize and accept traces as an important feature in materials experience (Rosner et al., 2013).

Artefacts are intrinsically addressed to support users in their life; thus, they can be considered as living mutant entities, tending to change their appearance or even their function during the lifespan. In this regard is possible to quote Manzini's words: "*The passage of time gives new value to what is generally addressed as 'imperfect', as uncompleted or endowing singular features, not allowed in standard industrial produce [...] Nowadays always more designers consider the imperfect features in their own projects that are studied as potential traces of the vitality of objects, reinforcing an emotional linking, in time and space*" (Manzini, 1986, pp. 62-65).

5.2 The skin of Things

"*We prefer the patina of time, knowing full well that it is produced by sweaty hands, by greasy fingertips, by death seasons deposits, we prefer it for that luster, and those darkening, that remind us the past, and the vastness of time*" (Tanizaki, 1982, p.11).

Giving value to an imperfect condition, leads to the reconsideration of the relationship that a person has with everyday objects, because such imperfections can be pleasant and help to create a link with the user (Van Hinte, 1997, pp. 247). Imperfection, in other words, can make the experience of use richer and more durable (Chapman, 2005).

Materials and surfaces of the artefacts are no exception, rather they rise to main actors in this dynamic that aims to meet the need of both designers and users to reintroduce *anomalies*, defects and imperfections and all those elements able to evoke the presence of human. This enhancement of imperfection has no connection with an aesthetic or conceptual preference for manual labor and craftsmanship; It simply shows a preference or predilection for unpredictable errors in the processes of production, whatever they may be, revealing traces of humanity, use, ageing, deterioration. With this awareness there is a widespread tendency to take into consideration also the imperfection, both for reasons of aesthetic

innovation, and for reasons related to the necessity of greater sustainability due to the duration of the artefact itself.

The surfaces of the used artefacts begin to become imperfect and therefore not homogeneous, defective, able to show signs of time and use. With the passage of time, it is inevitable that any surface gradually loses its initial qualities, in fact the chemical-physical properties of the surface of the material and the environmental and use stresses lead to an inexorable 'degradation' (Rognoli, Levi, 2011).

As seen, the skin of objects is degraded due to several factors. The fact that this degradation has been contextualized has allowed the acceptance of that which is commonly called *patina of time*. The concept of patina is interesting for the ageing of materials and surfaces topic, which should be able to withstand the passing of time by registering the passage without losing quality, but rather increasing its value. Is therefore possible to affirm that the patina is significant of any superficial alteration that time brings to objects. In support of this, are mentioned the Jacques Fontanille's words in which he explains that "*The patina is therefore both an expression of time passing and use, inscribed on the external surface of objects, that even the expression of time that lasts, witnessed by the solidity and permanence of the matter and the internal structure of the objects*" (Fontanille, 2002, pp. 71-95).

A material example that is reported able to support what has been said is the copper that, aging, like a reptile, 'change skin' and the passage of time deteriorates it, transforms it, overloading it with new identities. In this case, the patina confers the material recognizability and identity and semantic values. Another example of a superficial mutation, on which it was attempted to reproduce the signs of imperfection is the design of the designers Lex Pott and David Derksen with their *Transience Mirror* (Fig. 41) where, by intervening on the skin of the material, with acids and substances (Fig. 42) have produced geometric colored graphics. This 'mutation' process, as already reported, concerns only the superficial part of the

material and this pushes some designers to experience a continuous change of surfaces enhancing, in their projects, the mutations made by time and *forced use*.

Figure 41 - Transience Mirror, Lex Pott & David Derksen; https://www.1stdibs.com/furniture/mirrors/wall-mirrors/david-derksen-lex-pott-transience-mirror/id-f_6412263/

Figure 42 - Making process of Transience Mirror; Acid covering; https://www.dailytonic.com/transcience-mirror-by-david-derksen-and-lex-pott-nl/

In the previous chapter has been seen how time is a characterizing element of something that *lives*. Where transience is an inevitable element of the life of everything and for this reason deserves to be valued rather than feared, appreciated as the only testimony of a person or object story, of his specific past and of his uniqueness. The visualization of the passage of

time is through the signs, the traces that the ages leave with their succession and their chasing each other. Such traces say much, and often also in detail, about the experience they refer to. It is interesting, in this sense, to make a clear parallelism between the human body, being 'matter that lives' (Zanardo, et al., 2009), mute over time (understood as an ageing human being) and aging reveals its character where by character is understood all the experience that shaped the body and the object that also changes shape, color, texture, is transformed; Thus, is possible to be witnessing the inevitable process in which time impresses on things.

As addressed in the chapter *'The meaning according to the Western industrial mentality'* (see chap. 4.1), there is a marked propensity to eliminate the defect intended as an element of disturbance or imperfection, so even in the human body, contemporaneous society tends to conceal the traces of individual experience, perhaps to delude itself to be able to stop the time or for fear of revealing the events of its own intimacy. As human, into design process, eliminates the defect, in the life of the individual is used the cosmetics to order, to homogenize, to standardize, thus serializing the human aspect. Thus, the cosmetics tends to the idealization of the body, depriving it of any specific and singular character, vulgarizing it to the "*mere repetition of the equal*" (Sartwell, 2006). The resulting vision appears entirely akin to that of the aesthetics of imperfection remaining at *wabi-sabi*: transitoriness as an inevitable element of life that deserves to be valued rather than feared, appreciated as the only testimony of the history of a person or an object, of its specific path and its uniqueness.

Therefore, the patina, understood as 'presence of the past' in the matter, and the signs of wear and use, are significant and describe the life of the object. The object has inscribed on its surface the traces of its function, its relationship with the user. Concentrating on the surface means determining the longevity of the product, more than occupying its geometric characteristics, its style or sign (Ostuzzi, et al., 2011). The materials alteration and the objects surface that daily accompany the human, induce

therefore, to re-evaluate the meaning of the time: "*Millions of products 'die' before their time has come. Time in design has the task of mapping ways to design and plan products so to let them live longer with increased value*" (van Hinte, 2004).

5.3 The voluntary and random process

The matter ageing, understood as a change of form, does not manifest in a unique way in all the materials, because for some appears a *material degradation* and for others, instead, a *superficial degradation*. As far as material degradation is concerned, this happens when the materials are 'natural' such as the leather, the wood, the stone and the ceramic. They can, for example, teach things, tell stories that often become the defining element of the object itself. Their main quality is that these materials are known, experienced and know how they change over time (Manzini, 1986, p.192).

The most important thing, explains Ed van Hinte (2004), is to monitor the process of change from an aesthetic point of view. This can be difficult because there is no real agreement on the aesthetics of using. The above-mentioned materials therefore have an aesthetics and form mutation that becomes an added value. For other materials, however, is manifested the degradation of the superficial type (intended on the surface of the object), especially in polymers and metals that aging without dignity are not accepted, and discarded when no longer respond, above all, to aesthetic needs.

In the first case the degradation (intended as a mutation) of some materials, thus, has been contextualized and therefore accepted, while in the second case the mutation is seen as an element of rejection and ugliness as it goes to 'break' that ideology of 'perfection'.

Is possible to come back to talk about the Japanese culture that, containing in itself reflections and insights about this issue, goes to teach how feasible is the need for a different alternative aesthetic, and certainly more sustainable especially for what It relates to the relationship between human and objects (Tanizaki, 1982). In design, and especially speaking about surfaces and time, becomes important not to underestimate issues such as transience and the change of aesthetics, intended as the possibility of giving new form, life and beauty to artefacts. In fact, the acceptance of such elements (inevitable and unstoppable) is the basis of the possibility of grasping such an aesthetic. In this sense, industrial surfaces can also be transformed.

Aesthetics becomes thus one of the fundamental elements regarding the characterization and character of the object, especially when it is ageing and therefore when it changes shape, mutating. Aesthetics is useful for perceiving the true material *beauty* and, in an indirect way, of the environment that created it. "*The designer in representing and shaping what for others is the invisible, i.e. the aesthetic hidden even in a simple material and in its infinite constant changes, draws the user's attention to how much beauty there is around us; A warning and an invitation to look with sharp eyes everything around us, to respect the Nature and the seemingly trivial and discounted things because each reveals and possesses infinite capabilities of beauty*" (Penna, 2016).

The objects are born to perform a recognizable function, determining a precise use. In most cases, use means *touching*, *handling*, *lifting*, *storing*, *transporting*, that is, an action that implies and cannot be separated from a particularly physical relationship between man and artefact (Ostuzzi, et al., 2011).

The material of the artefact then undergoes the action of the user and, therefore, the use often involves changes on the objects, which vary depending on who uses them and how it uses them, with how much care, intensity, strength or with what modalities. These modifications involve

the appearance of traces on the object itself, the traces of the use precisely. These are testimony to the history of the object, its presence in a complex series of dynamics and daily events, whether these are accidental or planned.

Human has an innate tendency to leave a visible and recognizable sign of his passage, a sort of demarcation of the territory, thus, in this sense, the objects act as witnesses in charge of remembering, carrying on themselves the traces of the relationship with human and his personal way of doing (ibid.).

The using impressions can therefore be assimilated to *memory traces* with a strong emotional, distinctive and belonging charge. Traces as a demonstration of the emotional bond between user and product. To leave traces of its work can therefore constitute for the human a kind of manifestation of the necessity to manifest himself in the world, to observe its own presence and its influence on the reality, acting, confirming to exist. In Paolo Ulian's project we find the idea of leaving traces of human presence activity: traces of use and passage. Explanatory in this sense is the project *Introverso* (Fig. 43) inasmuch, the eternal matter (marble) loses its monolithic appearance and transforms itself into something ethereal. The action of scratch and transform the marble block inevitably creates residues, scraps that testify the time that has passed, that continues its motion towards the future (Grassi, n.d., p. 2). By acting on the matter, breaking it, the human leaves a trace, is possible to give new life to a new form, rubble are left (Augè, 2004). He infers in addition that the ruins are the concrete manifestation of time, the transience of life and at the same time the permanence of things in the world, the signs that human is able to leave in history alluding to a multiplicity of past (ibid.).

Figure 43 - Introverso, Paolo Ulian, Antonio Lupi design, Marble; http://www.adidesignindex.com/it/ricerca-per-l-impresa/2017/introverso

These modifications, resuming the Marc Augè's words, differ depending on the user, on its being, on its history and on its sensibility that has with the inert matter. These footprints can be considered as *traces* of use, witnesses of a history, of actions in a complex series of dynamics and events, typically of daily life, whether accidental or systematic. A crucial role in the definition of the result is represented by the material itself of which the artefact is constituted.

Embraced the meaning sense of product as a dynamic and changeable identity, is possible to concluded by saying that the design choice to leave margins for a product evolution, opens up to wide-ranging scenarios involving the inclusion of many actors in the of realization of the product process during its life. It is so curious and stimulating how, through those signs that human is able to leave with the passing of time on objects, the user can contribute creatively to the formal and aesthetic development of the object through the stimulation of the manual skills creativity,

questions about itself and about what it represents. The user becomes an active part in the object life process, able to change it and give it a new character: a personally unique character.

CHAPTER 6

Case studies

As is true that industrialization brought productive perfection and absence of errors in the object, it is also true that the tendency of some designers in recent years is to show the process by which objects are often made by intervening on the serial reproducibility subject highlighting manufacturing errors and making them become the artefact's main feature. The industrial *defect* is valued, and at the same time, the 'perfect' imperfection of handmade operation has been contextualized on the object.

Therefore, this chapter will focus on the analysis of some projects (case studies) whose main ‘values’ recall the arguments covered in the previous paragraphs. The examples have in common a strong manual component somewhere along the production steps. They also search to have some kind of randomness in their morphology. Meaning that the final aesthetics of the object is not fully designed but left, in a larger or small dimension, to change. Simultaneously, each of these case studies will be analyzed through the methodologies adopted by designers to transfer the production process through 'finished' objects using a handmade imprint and knowing to respect, at the same time, the material used: the *ceramics*, exalting its characteristics of ‘imperfect’ beauty.

Most of the case studies are projects made by young designers in which the lowest common denominator is the ceramic material. The reason for these case-studies material focus had to do with my own final project outcome (discussed in the next chapter). The way in which designer uses different techniques to create their objects/artefacts will be covered in the analysis. Their experimentation covers new design methodologies exalting new emotional features and intrinsic material sensations that they found ceramics could convey in the best way..

"*Look at the ceramics and there's everything, as in the poems and in the songs: There's everything Enough. There are men without uniforms and without weapons, sitting and chatting with girls, drinking coffee, eating fruit, watching flowers, curing fish and also keeping in hands a precious object, at the time of spring and the time of autumn, with the rare conscience that is spring and that is autumn*"[5] (Sottsass, 1963, p.127).

6.1 Industrial craftsmanship

With the rise of technologies, many designers started to incorporate the 'artisan factor', working with natural (found in nature) materials, with the industrials one Including artificial intelligence and robotics. A new manufacturing flexibility has started to transform our economy and the relationship between producer and users. Powerful, lower-price industry-grade 3D printers, CNC routers and laser-cutters are enabling people to design, model and engineer their creations themselves locally. In private workshops, at home and in maker spaces, hack spaces and FabLabs, these new facilities/technologies are disrupting the classical business models by transforming the way we make and distribute goods. An example of this reality (previously referred in chapter 1.1), will explain this new phenomenon of design: *Functional 3D Printed Ceramics* by Oliver van Herpt (Fig. 44) - a project which sees the ceramic material 'nature' as an absolute protagonist but brought in an industrial context. The projects wanted to enhance the phenomenon of imperfection through the sophisticated technology of 3D printing (Fig. 45). With textures reminiscent of fine lace of natural forms, the finished products appear handcrafted, but their intricacy reminds the viewer that they are a collaboration between human and

[5] "*Guardate le ceramiche e c'è tutto, come nelle poesie e nelle canzoni. C'è tutto e basta. Ci sono gli uomini senza divisa e senza armi seduti a chiacchierare con le ragazze, a bere il caffè, a mangiare la frutta, a guardare i fiori, a curare i pesci e anche a tenere nelle mani un oggetto prezioso - al tempo della primavera e al tempo dell'autunno, con la coscienza rara che è primavera e che è autunno*". (Sottsass, E., 1963, *Le ceramiche delle tenebre*, Milan, East 128, p.127); (free translation by the author)

machine. The innovation component in this project is the clearance of some industrial perceptions because the process of ceramic molding is something that can be 'anomalous' in the eyes of many.

Figure 44 - Oliver van Herpt, Adaptive Manufacturing, (2014); Photo by Ronald Smits; http://oliviervanherpt.com/adaptive-manufacturing/

Figure 45 - Oliver van Herpt, Ceramic 3D printer, (2012-2019); Image from Oliver van Herpt; http://oliviervanherpt.com/functional-3d-printed-ceramics/

In this project the designer van Herpt wants to value the sinuosity and the material texture (not fully controlled surface) able to create articulated textures (that the technology and the machine are able to reproduce) always different from each other, not reproducible by hand. He himself will affirm: "*Clay is much more elegant and noble material then plastic; it is much more sculptural [...] 3D printing has the potential to bring back the unique and individualized objects that artisans make*" (van Herpt, 2012, p. 161).

It is thus inferred that the behavior of the ceramic material, when printed does not react like the common plastic and inevitably is able to create random material imperfections (excesses, smudging, etc.) where the limit of the machinery on the artefact is left visible and valued.

It can be said that the designer wanted to enhance the intersection of analogue and digital, between the creativity of the craft and the possibilities of the machine: "*It is and remains a tool, the interaction between man and machine makes every object unique, that's what keeps it exciting*" (ibid.).

Interesting project presented by van Herpt in which he was able to reconcile the typical industrial work given by 3D printing with a completely artisanal idea such as that of creating artifacts. The innovation in this project lies in the fact that, referring to a purely manual mode of manufacture, it has transformed a manual action into mechanics. From his last penultimate quote reported it can be interpreted that thanks to the printed material (in this case the injected product is a semi-liquid ceramic compound) the mechanical process fails to create perfect shapes and surfaces as it is uncontrollable by the perpetual and perfect movement of the machine. This coupling between material type and mechanical technique brings to light completely unexpected objects compared to the designed 3D model.

6.2 A new sensorial surface experience

The ceramics materials allow for unlimited working possibilities. Its plasticity rends it a unique and peculiar material in which *serendipity* is a inherent aspect of it (see chap. 4.3).

The continuous research on ceramic material surface qualities, led Michal Fargo to experiment upon new ways to increase the value and expression to its surface. It succeeded in her intent with *Else* project (Fig.

46-47) where, after many experiments, she managed to create different and unusual ceramic surfaces.

This project deals with the gaps between craft and design inasmuch goes to use an already 'industrial' product such as the foam and through basic techniques (inherent in the use of ceramics) as the immersion into the porcelain slip, is able to design free forms that are not restricted by parting lines and pouring points. A similar behavior is achieved while the creating metal jewelry process in which, as well as the foam in this case, the wax with heat melts leaving space to the metal. Useful comparison between two similar productive methodologies in which the original shape is afterwards 'changed' into another material.

By creating a different working technique that does not require molds, the designer by carving and modeling foam pieces (Fig. 48); she then soaks the foam structure into the liquid porcelain slip (Fig. 49). The foam absorbs the ceramic mixture necessary impregnating all its parts (Fig. 50), then, firing it into the kiln, the foam burns away and gives place to the natural beauty of the ceramics, which, hardened, goes to highlight every detail of the surface of what was once the sponge exalting in a peculiar way the texture in every detail. She will say on the matter: "*I was really bored with mold-making and having all these clear, smooth surfaces so I started sculpting in sponge and then just dipping it and firing it, afterwards I started trying to do some other things like casting into sponge blocks*" (Fargo, 2014).

Above: Figure 46 - Else Rock vase from Naturalike Collection, Michal Fargo, self-production, 2014; https://www.dezeen.com/2014/02/18/else-vases-by-michal-fargo-moulded-from-torn-foam-blocks/

Left: Figure 47 – Else Rock vase, (texture detail), Michal Fargo, self-production, 2014; http://www.yooko.fr/else-coral-moss-rock-serie-de-vases-textures-de-michal-fargo-pour-pcm/

Figure 48 - Foam shapes used to create Else project vases; Photo by Sasha Flit; https://www.dezeen.com/2014/02/18/else-vases-by-michal-fargo-moulded-from-torn-foam-blocks/

Figure 49 – Soaking foam in porcelain to create Else vase; Photo by Hadas Shalem; https://www.dezeen.com/2014/02/18/else-vases-by-michal-fargo-moulded-from-torn-foam-blocks/

Figure 50 - Porcelain slip takes on the rough surface texture of the foam; Photo by Hadas Shalem; https://www.dezeen.com/2014/02/18/else-vases-by-michal-fargo-moulded-from-torn-foam-blocks/

6.3 The diversified series

In cultural contexts where the material control and formal perfection of the object are set to empathize homogeneity (mainly through surface, color and texture), and reproducibility (seeking each production object to be exactly identical to the next one), the designer may find it interesting to differentiate themselves from this mentality by creating a 'craft' project – for example by using a diversified repetition in series without the need for very elaborated industrial machinery.

It is considered as a useful example to report the Vitor Agostinho's graduation project called *Moldes Mutantes, Variação em série* (Mutant Molds, Series Variation) in which he wanted to enhance new processes of ceramic conformation to develop new forms of use by using plaster molds.

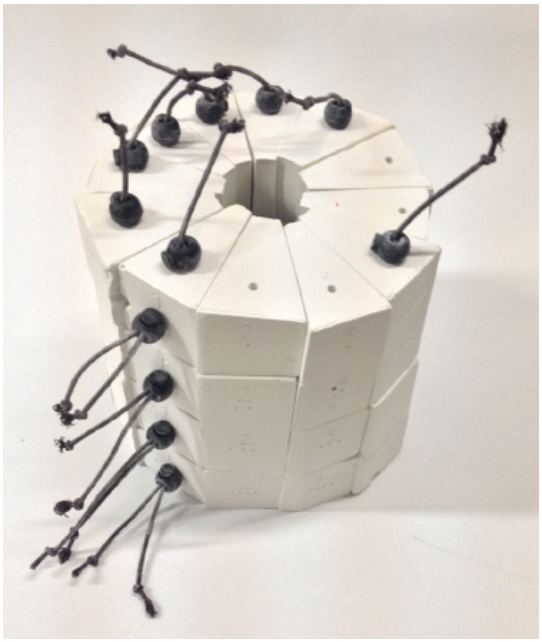
Through the casting technique, Agostinho uses ceramics slip to experiment a new unique and unrepeatable objects shapes. He will be inferred: "*I believe that this experimentation is able to increase the value of individual products to allow a more diverse choice by consumers*" [6] (Agostinho, 2013).

The process of slip-casting begins with the mold creation whereby the designer has been able to find an unusual way to build it. The mold, in fact, is composed by many small blocks that once put together go to form the overall shape (Fig. 51). All the various blocks are held together by rubber bands, staples or tapes (Fig 52).

Aesthetic peculiarity of this project is the 'decomposable' mold, inasmuch, the designer can decide the possibility to change the position of the various blocks creating so infinite combinations and consequently infinite shapes of the final object (Fig 53).

[6] "*Acredito que esta possibilidade acrescenta valor às peças e permite uma escolha mais diversificada por parte dos consumidores*" (Agostinho, V., 2013, Moldes Mutantes, Variação em série, Graduation project, ESAD, Senhora da Hora Matosinhos, Portugal); (Free translation by the author)

Figure 51 - Mold composed by cubic blocks construction; Photo by Vitor Agostinho



Left: Figure 52 - Assembling of the mold through elastic bends; Photo by Vitor Agostinho

Bottom: Figure 53 – Part of 'Moldes Mutantes' project, different forms obtained from different mold composition; Photo by Vitor Agostinho

6.4 The analogue degradation

As explained in the introduction of this chapter, the ceramic, in its various processing stages, presents a series of infinite characteristics. This example is interesting because it takes into account a 'natural' peculiarity of the material: the shrinking.

The designer, in this case, enhances this characteristic in an innovative and unusual way, showing different textures with a strong poetic component. A physical characteristic, a peculiarity known only to the people involved (in this case to those who work the ceramics), is shown, thanks to a project able to transfer a value, or rather a limit of process to the value of use and aesthetic of the object.

Knowing how to make the most of this peculiarity, Hakkens designs *Shrinking Jug* (Fig. 54), where, starting from a jug made out of various kinds of materials such as pulp, foam, plaster, etc. (Fig. 55), ended with a set of thirteen porcelain jugs and one interesting process to get there.

By exploring the boundaries of the processes involved, the designer conceived a master mold with a variety of textures and materials through slip-casting. Due to the incremental kiln shrinkage rate (10-14%), each form is used as a template for further processing the jugs into smaller versions. From this, the original 5 liters mold is transformed into a collection of 10 objects with the smallest being 10 milliliters (Fig. 56). Regarding this topic he will inferred: "*For me the coolest feature of porcelain is that it shrinks when you bake it. So, when I heard this, I just had to do an experiment. An experiment that turned out to be pretty cool. I made a huge jug from all kinds of materials to see the shrinking process on different textures. From this jug I made a mold and poured porcelain in; With this porcelain model I made another mold and baked it, it shrank again. Made a mold from this model and so on...Every time the porcelain deforms a little bit and slowly the textures lose its detail*" (Hakkens, 2012).

Figure 54 - Shrinking Jug, 2012, porcelain made by porcelain-slip casting process, size comparison; https://www.design-boom.com/design/dave-hakkens-shrinking-ceramic-jugs/

Figure 55 - Shrinking Jug, 2012, original jug made by poor materials; https://design-milk.com/shrinking-jug-by-dave-hakkens/

Figure 56 - Shrinking Jug, 2012, Dave Hakkens, self-production, view of the all thirteen jugs; https://www.design-boom.com/design/dave-hakkens-shrinking-ceramic-jugs/

CHAPTER 7

Project

In this latter chapter is described the experimentation phase carried out. As this a free experimentation, it should be noted that the entire research phase in the previous paragraphs has been used as a means of support to tell the process that has been implemented to create the whole project. The project includes a series of objects created through 'mass production' without the use of specific industrial equipment, but only through craftmanship and hand-made interventions. The material used for the project is ceramics, a natural material defined as eternal (Mari, 2010) able to tell stories and meanings through its surface. It was also the perfect material to describe a mutation serial process and formal imperfection. In fact, one of the main themes that the project wants to outline and at the same time enhance is the importance of defect and imperfection.

What is obtained is a series of objects, (a vessels in this case) in which the shape and geometry of the starting piece were designed by the designer himself (a methodology that will then be explained more carefully later).

The main thread of the experiment is to take distance from serial industrial production, highlighting that, even in an industrial process, there are phases where matter can express itself freely (especially in the final phase of the process). Many of the recommended technical specifications for the use of the technologies engaged are deliberately ignored by opening up new design avenues.

The burrs and the various artefact surface imperfections (generated by the process) thus assume completely unexpected geometries and not predicted as the base material is able to create uncontrollable relationships with the material support used.

The whole project and executive path can be defined as an *empirical* path as has never been fully able to have the matter and its behavior under total control. Only with the practice of the materials used and subsequent experience of them, it was managed to create a project capable of supporting all the prerogatives addressed in the previous chapters.

7.1 Concept

The way to approach and perceive the individual object of the project is different whether referred to the designer or to the user. In the first case, an empathetic relationship is immediately created with the artefact, in which the designer, unaware of the result individual piece, sees the formation of the artefact from the matter that changes texture, color and shape. In the relationship with the user, instead (which relates to the object already constituted for its entirety), this empathy can be late because, only thanks to the project set up in full (which therefore tells the process of formal change), is able to attract in an all-encompassing way the user.

This empathetic relationship with the object can be affected by the variability of the needs perceived by those who design, own or enjoy it. In the long term a person changes his habits, his needs and tastes, which can also find a different feedback in the individual artefact. The project, in fact, was thought to be made up of a series of objects, all different from each other, capable of changing perception inasmuch they tell a process, a story, which in a single element is not possible to perceive.

The series of objects designed responds to the ethics of change: the new is a value in itself. The ethics of change involve relationships of different nature with objects. According to this reasoning the object becomes *fetish* (Ostuzzi, et al., 2011) as a load of meaning, a constant reference thanks to its mutability over time.

The concept conceived follows the idea of criticizing the Western industrial process, in which, as widely explained in the previous chapters, every defect component is eliminated to make the object 'perfect' and therefore available for purchase from the ‘mass market’.

Through an empirical experimentation of the artefact formal mutation and consequent mold deterioration, the goal is to represent a ‘limited series production' of objects, starting from a single matrix (mold). The peculiarity of the project is to endlessly use the same matrix (which over time deteriorates) always creating different shapes from the previous one. In this way what results is a design story in which the *error* and *defect* are left rather than eliminated, exalted rather than hidden; the defect, in doing so, becomes a peculiar element that can uniquely characterize the individual object.

7.2 Empirical experimentation

Having in mind the necessary executive processes to be implemented for the project, the first step of the process was to choose the material; The material chosen has been the ceramics, a natural material able to create a strong (as mentioned above) empathy with those who work with it. Aware of the fact that the ceramic world is almost infinite for processing and typologies, through the methodology of execution and representation of the project was chosen the porcelain slip. Ceramic material used for casting and able to obtain hollow shapes through a mother mold (during the course of the treatment will be carried out step by step all the procedures for the realization of the project).

Given that the fundamental part of the whole project was to create a series of objects, it was chosen to represent the concept through a simple vase.

The vase has been designed *ad hoc* in such a way that it was able to tell, once the casting process was finished, the entire concept with all its variants. The methodology of brief casting, normally, is carried out through a mold, usually composed of plaster.

As this is a manual experiment, the second step of the project was to create a sample as a solid that accurately portrayed the main object (in this case the vase). The material used and best suited for this operation was plaster, which presenting itself in the form of dust, has been mixed with water obtaining a medium-dense fluid. By casting it is inserted into a mold composed of wooden walls (Fig. 57). Left to harden over time (about a couple of hours) was possible to extract the solid and start to shape it at will to create the desired shape (Fig. 58-59).

Figure 57 - Second step: plaster casting for creating the 'solid' object; Photo by the author

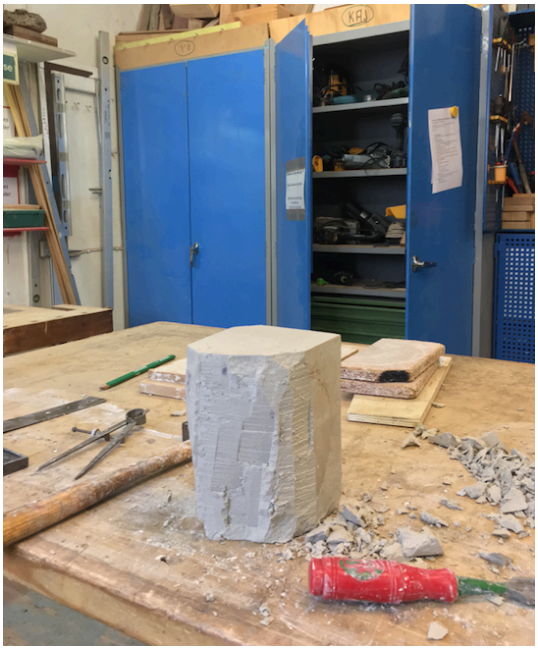


Figure 58 - Shaping the plaster into the solid object whit a chisel; Photo by the author

Figure 59 - Shaping plaster improvement into the solid object; Photo by the author

Next step was to create the main mold for casting the object. Based on the solid object made by plaster, a mold has been created around it. Having a particular shape (Fig. 60) it was decided to make a mold divided into three parts comprising two side parts and a base (Fig. 61). It was decided to divide the design of the mold into three parts so as not to create any undercuts during the opening phase of the same.

Figure 60 - Solid of vase prototype made by plaster; Photo by the author

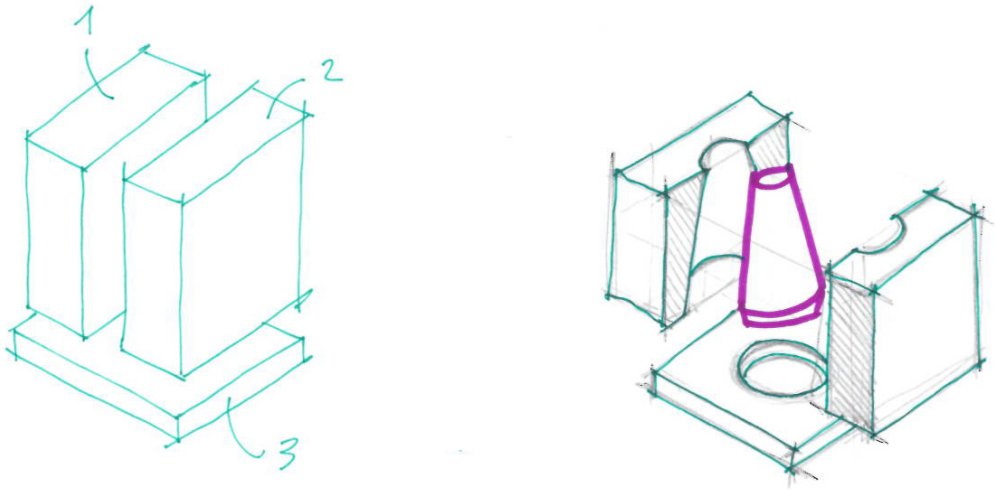


Figure 61 - Mold parts; Sketch by the author

Normally, in the casting ceramic world, molds are composed entirely by plaster (same procedure for creating the sample solid object, Ref. Fig. 57); Being an experimentation, in an early stage of the mold realization, multiple samples (testers) of molds were performed using and mixing different components in different quantities (mainly plaster and sand) (Fig. 62). They were then tested for different degrees of material grain and resistance to use. These tests were used to understand the right amount of material to mix in the mold in such a way as to have a right balance between resistance and friability.

Figure 62 - Molds and components mixture attempts (testers); Above on the left: mixture with sand metal casting and plaster (50/50); Right: mixture with sand and plaster (50/50); Bottom on the left: mixture with sand and plaster (40/60); Right: 100% plaster; Photo by the author

The mold designed is characterized by a plaster part mixed with a part in sand for constructions. It was decided to mix the plaster with other components to increase the fragility of the piece and thus make it more easily deteriorated in a short period of time during the design (casting) phase without affecting the material properties. During the creation of the mold (Fig. 63) there were errors born mainly from the experimental process phase (Fig. 64): in this case the two plaster parts such as the solid sample and a part of the plaster mold merged together due to missed insulation layer (often composed by soap).

Figure 63 - Mold preparation ready to be casted and filled with the mixture with plaster and sand; Photo by the author

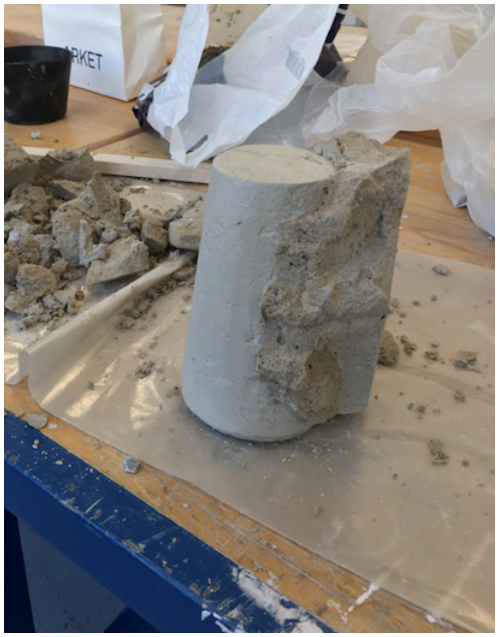


Figure 64 - Merging of plaster solid object and a part of the mold; Photo by the author

Once the process was re-implemented and the 'alchemic' compound between plaster and sand was hardened, a mold was created (Fig. 65). Designed as a definitive mold capable of enduring the entire design process, a classic example of *serendipity* was found, something uncalculated: the mold drying further and was too fragile to use it for a long time. This happened because inside the percentage of the sandy component was much higher than the percentage of plaster.

Figure 65 - First mold attempt, composed by thick sand, gravel and plaster, three parts; Photo by the author

Thanks to the multiple attempts and samples, also experimenting with different types of sand and dosages, the right dosage percentage was found between the two components (about 40% sand and 60% of plaster). Left to dry the mold making it ready for the process of casting, the casting material had been prepared, in this case it is porcelain slips as mentioned above.

At this point began the actual phase of creation of the artefact that will then become the first vessel of a 'series production' (Fig. 66). The cavity of the mold was filled with the porcelain slip. The mold at this stage of the project is closed and held together by rubber bands. This means that the mold does not open due to the pressure caused by the porcelain slip

during the run-in phase. Depending on the density of the brief, a certain time was expected (usually 10/15 minutes). This 'wait' passage has become crucial for the success of the artefact as, the casting material containing water, when has been comes into contact with a porous material (in this case sand and plaster of the mold) is absorbed by the latter thus creating a *patina* that will then determine the thickness of the final object. After enough time, the excess slip (Fig. 67) is removed and the mold was expected to absorb all the water present into the porcelain slip. Over time (the timing may vary depending on the thickness of the walls object) the mold has been opened and the object has been extracted.

Figure 66 - Official mold composed by 40% of sand and 60% of plaster, attempt of casting the first object; Photo by author

Figure 67 - Excess slip removal from the mold (upside down); Photo by the author

Next step of the process was to fire the porcelain objects in the kiln; The ceramic product was cooked a first time with the methodology called *light-firing* (about 1000 degrees C) and then a second time with a second firing (1250 degrees C). The double cooking allowed the ceramic object to shrink in size by about 10/15% and especially after the second and last fire

the porcelain has taken on an unpredicted coloration, unusual for porcelain. This second event of serendipity has allowed to enhance even more the material imperfection giving the artefact a very special coloring.

What has resulted is an artefact that suits with the original design idea, ready to become part of a series of objects (Fig. 68). If is looked at the first object produced is possible to see that it already has surface and shape imperfections, this happened because the whole creation process, starting from the sample object, was carried out manually by empirically experimenting and without the use of machinery.

The same action to create other artefacts was repeated time after time, thus simulating a real 'mass production' (Fig. 69). With the use and time, the mold has increasingly deteriorated, forming cracks and critical breaks (Fig. 70) able to give more formal expression to subsequent objects. The deterioration and breakage at several points of the mold, have made possible the creation of increasingly complex and unexpected forms (Fig. 71).

Left: Figure 68 - Vase n.1 made by porcelain slip casting with double fire; Photo by the author

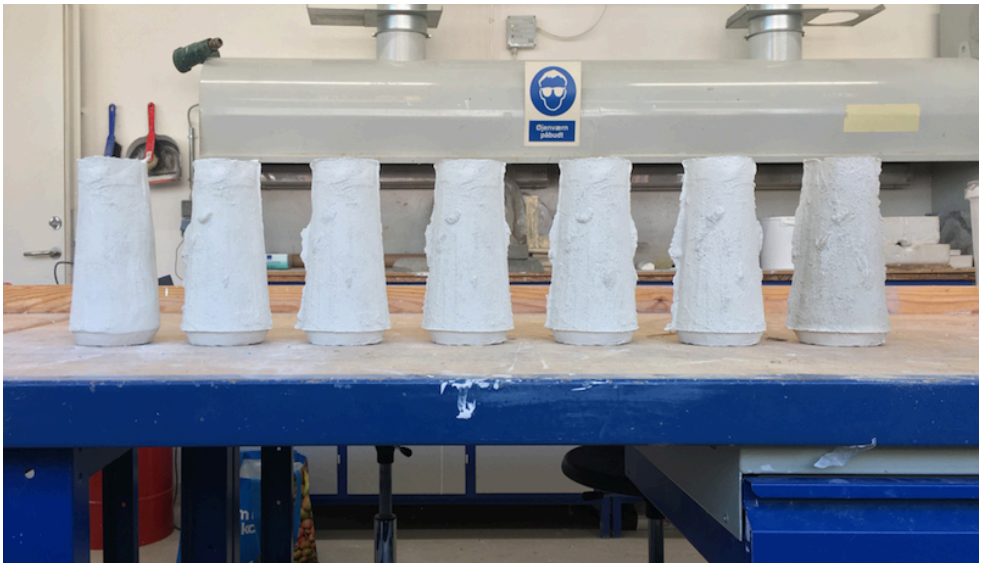


Figure 69 – Initial part of the project, vases from n.1 to n.7, raw porcelain; Photo by the author

Figure 70 - Deteriorated mold after several using, a critical crack is visible on one part; Photo by the author

Figure 71 – Vases casted from the same deteriorated mold from n.9 to n.13, after the light-firing; Photo by the author

The process that was intended to be explained with this experimental phase ends with a series of fourteen objects all different from each other (Fig. 72-73), offspring of the same matrix that, deteriorating and mutating with usage and time, was able to create unique and unrepeatable shapes. A project that is able to describe the entire artefact's productive process from the beginning to the 'end'. A trial that, as mentioned above, wants to criticize the use that the industry implements during the creation of an object in series, without removing but, on the contrary, *enhancing* the defect that becomes formal imperfection that can be observed on the *skin* of the individual artefact, diversifying from object in question, thus making it unique.

Figure 72 - Project; Photo by the author

Figure 73 – Project; Photo by the author

7.3 Comments and design reviews

The project is deliberately presented as a mass-product production in which the factor of material imperfection is accentuated through a sense of evolution/deterioration (see figure 71) from the first artifact to the last created.

As previously discussed throughout the course of the dissertation, the project was conceived and conveyed as an element of criticism towards a mass market and an increasingly standardized and approved manufacturing method: The Industrial. It is observed that the single artifact that composes the series presents on it the entire evolutionary process of the project increasing its meaning and value both aesthetic and empathetic. Thanks to its multiple and random traces present on the surface, given by the processing and deterioration of the mold, the object manages to entertain and intrigue the individual user.

The project consists of a series of fourteen unique artifacts in which the individual object is able to dialogue and relate in complete harmony with the remaining objects of the series. What is most striking, looking closely at every single object, is the peculiarity of the material of which it is composed.

As described, for the realization of the "imperfect series" the material used was the porcelain slip. As a *ready-to-use* industrial compound, each compound is slightly different from each other and that is why the same compound has been used throughout the executive process in such a way as to have no inconsistencies related to the chromaticity or the drying time of the individual pieces.

The whole series was deliberately left as natural as possible without using any kind of glaze in such a way as to make every single element of imperfection on the surface stand out explicitly. The project was finalized in two different places, one part in Denmark and the final part, in Italy.

Altogether with the designer, the entire project traveled, breathed and met different places from each other; That is why looking at the project, it is noticeable that from the ninth to the fourteenth object, the porcelain changes in chroma (see fig. 73), becomes clearer taking on a different stylistic connotation. The reasons for this color change are not yet clear to either the designer or the ceramicist who has been involved in the cooking of the last objects. It has probably been assumed that, by changing kiln (which has always been electrical) the object perceived slightly different temperatures or chromatic "contaminations" in the form of powder (glazes) derived from other objects present into the kiln. This contributed to the leakage of artifacts with different chromatic material to the other half of the project while being composed of the exact same material.

During the dissertation development, has been talk about the serendipity factor (see chapter 4.3) where the end result often does not coincide with initial expectations. The guiding thread of the whole project, serendipity is once again demonstrated on the chromatic effect of the surface of each individual artifact. It is observed that the first objects (from the first to the eighth) have an almost gleaming patina, glazed, with "foreign" elements scattered all over the surface (Fig. 74).

Figure 74 - Unexpected shine-glazed patina (first cooking batch); Photo by the author

It is assumed that this random and uncalculated effect at the beginning of the project is due to the sand of which the mold was partly composed. During the casting process, the grains of sand, detaching from the mold, adhered to the surface of the object and the same sand, firing into the kiln, was vitrified with porcelain thus assuming an "uncontrolled" but of great aesthetic value. This effect is visible in a predominant way only in the first part of the project. The second half (from the ninth to the fourteenth) has a more homogeneous and less crystallized surface coloration due, as explained above, both for changing kiln and therefore to the relative cooking of the pieces and for the amount of sand present in the mold, which was introduced and mixed with plaster (for the making of the mold) was randomly distributed, concentrating more in the inner part most in contact with the object for casting (Fig. 75). This would justify the presence of sandy and crystalline components on the surface especially in the first objects that make up the series.

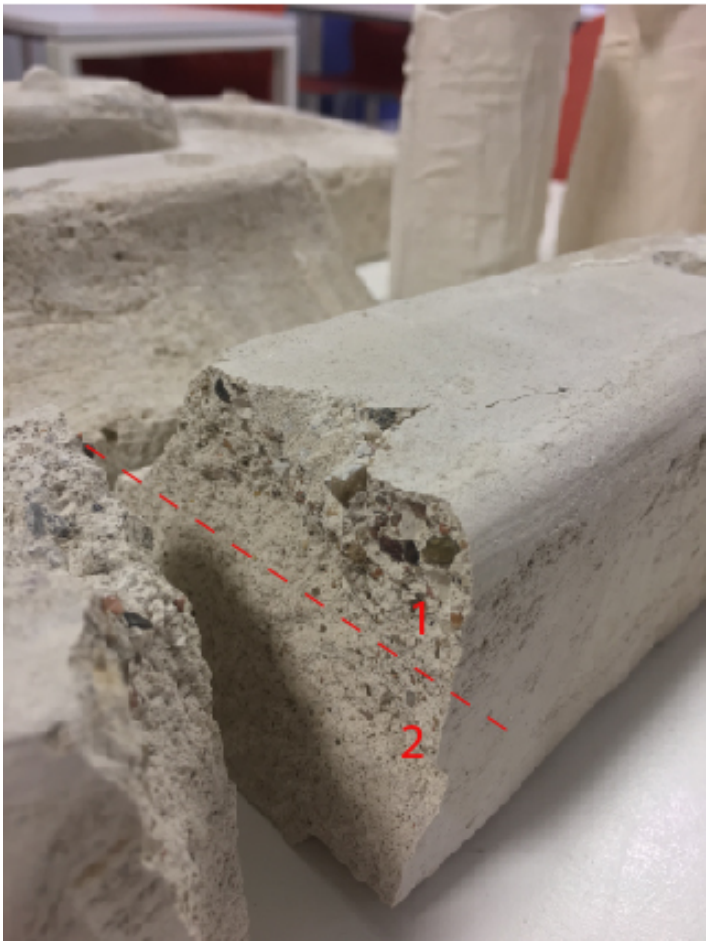


Figure 75 - Mold part stratification, n.1 is the inner part of the mold (rocks sedimentations), n.2 is the outer part of the mold (sand); Photo by the author

Even in this design phase, the author was aware that he had to let the matter act randomly, but always in a controlled manner, in such a way as to have a result partly predicted but not entirely defined. The "surprise" factor put in place by an experimental process helped the designer to have, absurdly, more awareness and more control over the subject by realizing that have as a *co-designer* unknown's factors.

Conclusions

During this treatment it was intended to highlight the importance of the defect during the object production phase and consecutively a series, although limited, of artifacts letting act as *co-designers* the passage of time and usage. The research phase then found its realization in an empirical experiment that supported what was sought and described during the chapters of the treatment.

The whole project is aimed at theorizing and unearthing a method that can be adopted for a critical analysis of an existing production process. The use of a single matrix component (to manufacture the various artifacts) made it possible to arrange the processing on a critical industrial production plan. The same process of experimentation and implementation of the project has resulted in both a break-up and multiple breakages of the mold in several parts. More the latter was deteriorating, more the whole project became valuable. These deformations/imperfections have been desired but not predicted, useful for the leaking of the final project.

During the entire thesis, significant classifications and design ways of use were proposed to outline an overview research about imperfection in design. This is to highlight the role of the material surface of artifacts in the transition from the supremacy of perfection to a defect valorization, and the ways in which this transition is implemented. The case studies

presented, and the phases of theoretical research were instrumental in demonstrating how imperfect surfaces have returned to be a stimulus and a strong inspiration for contemporary design.

In the treatment of this theme, the metaphor of matter as a living organism was evident, which, as Morozzi states (2009, p.108) "*It born, lives and dies*". Not only, in fact "*Nature is not inert: it mutates and transforms. It palpates and corrugates, ages and corrupts. Matter bears traces of its origin and the signs of time on the skin: wood cracks, paper yellows, metals oxidize, fabrics fray*" [7] (ibid.). A matter composed of a substance and a skin (patina) capable of representing the time that flows and express the unstoppable cyclicality of nature.

The choice of material was deeply thought out; the very use of ceramics (known as "eternal material") was determined by the knowledge of its qualities as it is difficult to mutate over time because of its natural composition. In fact, in this regard, ceramics have been considered to be the perfect material to witness and collect forever (on its own surface) the *signs* of *imperfection* that time has left on the mold.

At the same time, the mutation process, acting directly on the mold, makes possible the collateral change of the same ceramic surface, where every *sign*, every *trace* of imperfection and mutability that time and use have left on the matrix.

To sum up, the skin of living beings may be able to tell the passage of time, as described in detail in the previous chapters, as the surface of the object can be a vehicle of the same mutation process. In light of this, being the project composed of inert objects, it has nevertheless demonstrated how they can be able to tell, through an *aesthetic language* found in their

[7] "*nasce, vive e muore*"; "*la natura non è inerte: muta e si trasforma. Palpita e si corruga, invecchia e si corrompe. La materia porta sulla pelle le tracce della sua origine e i segni del tempo: il legno si crepa, la carta ingiallisce, i metalli si ossidano, i tessuti si sfilacciano*" (Morozzi, C, 2009, Materia-creatura, Cinisello Balsamo, Silvana, p. 108); (Free translation by the author)

superficial formal defects, the whole productive process implemented. Imperfect surfaces are so familiar and can establish such a deep emotional connection with those who use them.

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