Ethics and Aesthetics for Enhancing Design and Transforming Social Reality

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Design is preponderant in the world economy; it allows competition and enhances the development of innovations in the market. The expansion of product offerings provides options to satisfy the user's needs, which is an undeniable advance driven by design. However, this has led to a significant increase in the production of solid waste related to design, which generates environmental deterioration. Additionally, the supply of design products has been concentrated in the most economically favored sector, leaving out a large part of the world's population which are not met because they are not a market of interest for the productive industry in general.

The content of this paper is the result of a collective debate from the authors, based on the analysis of documentary sources and their own experience as academics. Our objective is to encourage discussion for the creation of a common front oriented towards a design practice focused simultaneously on social development and environmental care; a design practice based on ethics and commitment to the environment and society.

Keywords: ethical design, eco-design, pluriverse, biomimicry, critical design

INTRODUCTION

Design[1] in its current conception is marked by the stigma of the industrial revolution and, therefore, by a clear vocation for mass production and mass consumption (Sparke, 2013). It is therefore not surprising that design has become a key factor in today's market competition. The commercial success of many companies is based fundamentally on the care and commitment they give to design, both in aesthetic and functional factors, and on focusing advertising campaigns on these attributes. This has brought a reassessment of design as a quality that adds value to products; however, commercially successful design is not always the best option from an environmental and social point of view. Design production is hardly motivated by interests other than economic profit. As a result, we have a market flooded with products that are not necessarily "good" for the consumer or for the environment.

Given this scenario, it is necessary to redefine and reorient the practice of design. Although we are facing an economic model that puts the accumulation of capital before the common benefit and environmental care, we believe that it is still possible to promote changes in the design field that will allow a change of direction in this sense.

Only through a practice guided by ethics, social responsibility and environmental care, we can reduce the deterioration of the planet and the inequity linked to design. In the 21st century, environmental damage is still being perpetrated and, despite remarkable scientific and technological advances, there is such acute social inequality, which generates, among many other problems, massive migration, social breakdown and ecological deterioration.

Design is an important factor for change, but it requires an ethically, socially and environmentally committed human foundation. In this scenario, raising awareness among designers, managers and consumers of design is the conduit that will make it possible to meet these challenges.

In order to measure and understand the role of design in today's society, it is important to look back at the process by which design was conceived as an academic discipline, as a profession and as a field of knowledge, obviously referring to the emergence of the first design schools at the beginning of the 20th century.

Design and Its Link to the Production Model

Design as a product of human ability has accompanied human beings at every stage of their historical development; however, the way of conceiving and practicing design has been transformed over time. Each civilization and human conglomerate have interpreted design in a particular and distinctive way. Throughout history design, like art, has been linked to religious power, political power or military power. Today, however, our discipline is openly linked to the market, to the industrial sector, playing a strategic role in the economic model. Design is sold today as a factor of commercial competition, as an added value to the product. This conception derives from its commercial approach.

The current conceptualization of design as a distinct and independent discipline can be traced to the late eighteenth and early nineteenth centuries. According to Davis "Today's design fields began as *trades*, rather than *professions* [...] Focused on the practical work of making things, new practitioners acquired expertise through on-the-job training. As early as the twelfth century, apprenticeship systems in Europe prepared people for work in design trades" (Davis, 2017:3).

Due to its aesthetic vocation, for a long time design was linked to art; however, with the industrial revolution and mass production, the practice of design became increasingly technical, rational and systematized, distancing itself from the criteria and principles of art. Rodriguez points out that:

> When around the 1900's the debate began on the possibility of a science of object design that could be inscribed within the field of engineering disciplines, many designers, strengthened by the recent conquest of industrialization, abandoned any relationship with art, arguing that their work did not consist in the creation of beautiful and meaningful objects, but purely functional and technically replicable ones (Rodríguez Morales, 2012: 31).

Thus, the current conception of design as a professional activity is configured at the beginning of the last century. As Davis points out, "The professions of graphic, industrial, and interior design have origins in the twentieth century" (Davis, 2017: 3).

Since then, design has been strongly linked to the industrial sector. As Sparke points out, "design is characterized by a dual alliance with both mass production and mass consumption" (Sparke, 2013:1). Norberto Chaves (2017), for example, says that design is, in essence, "a phase of the production process" and defines it in terms of a craft, a profession, but not as a discipline.

In this sense, the strategic and leading role that design plays in the dynamics of the world economy is evident. Sparke emphasizes that "In essence, design acts as a bridge between the worlds of production and consumption" (Sparke, 2013:4).

Thus, design is part of the added value of tangible products turned into merchandise, objects of use and consumption. Calvera emphasizes that design "is a strategically decisive structural activity in an economy like the current one, where the key players go beyond the functional or useful character of the utensils and what is bought and sold are sensations, experiences, values and even imaginary signs" (Calvera, 2007:19).

But these products, the result of design activity and turned into merchandise, are accompanied by solid waste both in their packaging and in their manufacture. Clearly, the industrial field, as promoter of the design process, is not always interested in the user as a human being, but in its role as client-consumer. This fact has brought unfortunate consequences throughout the world, among which stand out the production of waste, the tendency towards standardization, a process of transculturation and social inequity linked to design. This is why Escobar highlights the need for a new way of understanding the practice of design that puts an end to the hegemony of the single, standardized world imposed by the neoliberal model, which damages the planet and tends to exterminate the cultural richness of the multiple worldviews that coexist in our world. According to Escobar, it is a matter of moving towards "pluriverse of interculturality" (2018: 181), which encourages the conservation and understanding of the multiple worlds that still coexist in society. For Escobar, design has the potential "to contribute to the profound cultural and ecological transitions […] to face effectively the interrelated crises of climate, food, energy, poverty, and meaning" (Escobar, 2018: x). In the same sense Berman points out that "Designers have an essential social responsibility because design is at the core of the world's largest challenges… and solutions". (Berman, 2018: 1).

Herrera points out that the current condition of design in relation to the economic model potentially opposed "the very essence of design, its intimate nature" (Herrera Batista, 2021: 80), and says that if we start from the fact that design has as its object and reason for being the improvement of the human condition and the quality of life of society as a whole, then the supreme value should be the human condition and the care of the environment; whereas, in the prevailing economic model, the supreme value is money" (Herrera Batista, 2021: 55)

Solid Waste Production

The productive model not only generates material, digital and service goods; it also generates large volumes of design-related solid waste, much of which is highly aggressive to the environment or difficult to biodegrade. Escobar points out that "To be sure, much of what goes on under the guise of design at present involves intensive resource use and vast material destruction" (Escobar, 2018: 1). And he is right, because today there is clear evidence showing signs of environmental depletion, such as the plastic islands that are unfortunately beginning to appear in our seas, just to mention one example.

However, for now, in addition to the countless documented cases of fish dying from plastic waste, there is another serious problem, which is the pulverization of the material into smaller and smaller particles, which end up poisoning the seas. In addition to the problem of solid waste in the sea, there is an even greater part that ends up in garbage dumps and sanitary landfills that are not adequately treated.

Among the plastics related to design are obviously those products or components that give shape and support to most of the objects that surround us in our daily lives, however, the biggest problem is found in those plastics that serve as wrapping, boxing or *packaging* to the articles. These packages are an important source of environmental pollution, both in their production and in their disposal process.

It is clear that nowadays it is difficult to purchase a new product that is not accompanied by some (often excessive) quantity of plastics whose useful life cycle is too short, while their decomposition process is very long. In this sense we can say that, although the cost of plastic packaging may be economically low, the environmental cost is often very high. This situation has given rise to what is known as "environmental economics", an approach that emphasizes the cost-benefit ratio from an ecological point of view.

Another important issue to consider as part of the social and environmental responsibility of design is combating obsolescence. It is unfortunate but the useful life of objects is increasingly shorter, which again generates large volumes of solid waste, some of which is highly toxic. It is a matter of design, engineering and marketing, but it is urgent to design objects with greater durability and functionality that allow their use for longer periods. It is necessary to facilitate the repair or upgrade of devices and all types of products.

In this sense, one of the paradigms used to address the problem is what is known as the *Circular Economy*, in which design plays a fundamental role. This approach seeks the reuse of components and reused materials that become inputs again, reducing energy consumption and environmental impact. Fernández Alcalá proposes five resource circularity strategies, which are as follows:

a) Increase the useful life of the product (same user).
b) b) Encourage product reuse (new user and through second-hand markets).
c) Ensure product recovery and remarketing (new user).
d) Encourage partial recovery of the product (parts and/or components).
e) Ensure the recycling of the product's raw materials (waste management). (Fernández Alcalá, 2015: 723).

Of course, the actions proposed by Fernandez may have a favorable impact on reducing the ecological impact, but these proposals are still the exception rather than the rule in the production process.

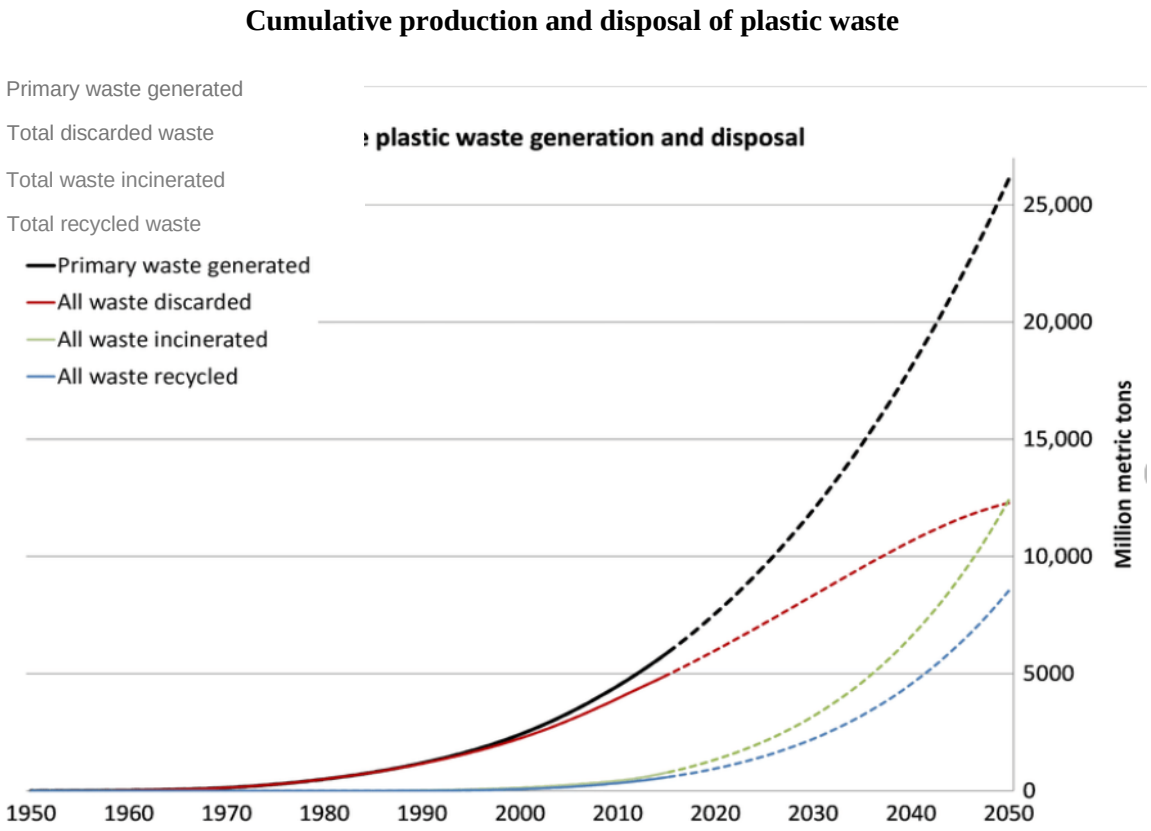
In summary, plastic production linked to design is related both to the product itself and to the packaging that accompanies it. Many other products, such as food, for example, are often accompanied by plastic packaging that makes them more eye-catching. Such packaging is also the product of a design process. In this area there are for example the so-called *clamshell packaging*[1] or snail packaging, which is quite common in food and natural products as well as in all kinds of articles.

FIGURE 1
SNAIL PACKAGING, FREQUENTLY USED TO TRANSPORT FOOD.

Source: personal photographic record, 2020.

According to the organization Hannah and Max Roser (Ritchie, Hannah & Roser, 2018), the worldwide production of plastic packaging waste in 2015 was 141 million tons. They further estimate that overall 80% of the plastic reaching the seas comes from land-based sources while the remainder is due to marine activities.

FIGURE 2
CUMULATIVE PLASTIC WASTE GENERATION AND DISPOSAL
(IN MILLION METRIC TONS)



Solid lines show historical data from 1950 to 2015; dashed lines show historical trend projections to 2050 (Jenna R. Jambeck, et al., 2017)

It is evident that even though the designer's margin for action is usually limited, we have an important commitment to the environment. Eco-design can no longer be an approach or a fashion, eco-design is already an integral part of the responsibility of any designer, regardless of the specialty to which it is dedicated. Moreover, it is important to move towards biomimetic design, which seeks to emulate the processes of nature, that is, the way in which the ecosystem manages energy, converting the waste of some organisms into supplies for others, in a virtuous chain of production and consumption., Biomimetics is, as Benyus says "the conscious emulation of life's genius. Innovation inspired by nature" (Benyus, 2014: 2). In this sense, it is clear that the contribution that can be made from design to the environment is fundamental.

In addition, Philippe Starck (en McDermott, 2001) emphasizes the importance of avoiding the generation of useless, sumptuous or elitist products. This is what he calls "purity of design" where objects should also be constructed with a minimum of materials to make recycling simpler.

Design and Social Commitment

Another big challenge - in addition to the ecological one - is the inequality of opportunities to meet the needs of a sector of the population that is often forgotten by the market: the poorest sector. Although the economic model has generated competition and innovation through market dynamics, it has also led to the accumulation of large amounts of capital, which, however, have not generated a reduction in social inequality.

It is obvious that the fundamental function of design is not necessarily to reduce the economic gap between rich and poor, but it does have the commitment to improve the quality of life of all human beings, regardless of their economic level, their social and cultural condition or their religious orientation. Design only makes sense when it is genuinely oriented towards improving the quality of life of its users. It is not, of course, a matter of stigmatizing design based on commercial competition, but of recovering and strengthening the social sense of the profession.

Perhaps we could speak of a discrepancy between the very nature of design and the - sometimes excessive - obsession with the generation and commercialization of objects, some of which could be described as inessential. This is why Flusser described design as a misleading activity and considered the designer as "a cunning plotter laying his traps" (Flusser, 2012:17). This explains the origin of some important actions on the part of certain designers, who do not agree with the role of design in the current economic model. As an example of this we can mention the document entitled The First Things First Manifesto 2000 (Barnbrook et al., 1999), originally signed in 1964 (Garland, 1964) by a group of prominent designers and reiterated later, in which they expressed their disagreement with the direction taken by the design. Another example can be found in the notable works of Cynthia E. Smith (2007) and Emily Pillonton (2009), who present an important collection of examples of design oriented to this population sector.

The criticism of the design profession as an ally of the economic model is also evident when Papanek states that a designer is one person how tries to "persuading people to buy things they don't need, with money they don't have, in order to impress others who don't care (2006: ix). Milton Glaser harshly criticized a number of actions that a designer in general would tend to take to deceive the consumer, like designing a package to look larger on the shelf, or design a package for a cereal aimed at children, which has low nutritional value and high sugar content (Glaser, 2004). Starck says that "Today, 80 percent of objects are useless, so it is essential to stop creating elitist products" (in McDermott, 2001:143).

Fortunately, there are designers who are truly interested in addressing problems arising from the marginalization and economic backwardness in which various communities live. An honorable example is the work of architects Arturo Vittori and Andreas Vogler, who developed a project called *Warka Water* (water towers), which has proved highly useful in areas with high water scarcity.

The concern and occupation of some designers to reorient or dignify the role of design as an agent of change and real improvement of the living conditions of the general population is worthy of note and has been evident through various design projects with human interest. In this sense, Allan Chochinov points out that "there has been a perennial desire to drive home the imperative of design for social good" (in Pilloton, 2009:6). For her part, Emily Pilloton herself argues that:

> I believe that design is problem solving with grace and foresight. I believe that there's always a better way. I believe that design is a human instinct, that people are inherently optimistic, that every man is a designer, and that every problem can either be defined as a design problem or solved with a design solution. And I believe that in an ideal (design) world...we, as designers, would be more responsible and socially productive citizens than we have become. (Pilloton, 2009:10).

Similarly Polak points out that "The problem is that 90 percent of the world's designers spend all their time working on solutions to the problems of the richest 10 percent of the world's customers. A revolution in design is needed to reverse this silly ratio and reach the other 90 percent" (Polak, 2008:83).

This is why Etxezarreta warns of a contradiction between the very nature of design and its current situation as a discipline at the service of the market:

> Design, a magnificent tool for the empowerment of any collective activity aimed at social improvement, can hardly be oriented in this direction as long as we live in an economic system whose main objective is to obtain profits for private capital. The potential development of design, both for designers and for society as a whole, therefore requires moving towards an alternative socio-economic system, which is not based on private

> capital but on the integral development of the population. (Etxezarreta Zubizarreta, 2007: 19).

It seems clear that there is a contrast between two different ways of looking at design: as a factor driving the market and excessive consumption or as a factor of change in the drive for the real improvement of society as a whole. The potential of design as a lever for development in one sense or another (economic or social) is evident, but it depends on the designer's point of view and the role that educational institutions can play to reorient and dignify design in favor of a society better served by design.

Ethics in Design

Up to this point we have pointed out the strategic role that design can play in achieving a society better served, as well as a better caring environment. A design that requires a high spirit of service and a great ethical vocation. This may seem utopian, but we firmly believe in the potential of design to transform the reality of an inequitable society and an increasingly damaged environment. In this sense, a solid conviction of service, a serious social and environmental commitment, that is, a practice based on the ethics of design, is fundamental.

Within this orientation of the design work, not only environmental care and social commitment count, but it is also essential to consider the context in which each project is located; to know for whom and under what conditions the work will be done. The latter in order to avoid actions that -even without the designer knowing it at first instance- could have highly harmful repercussions for the environment or for a specific sector of the population. All this is part of the code of ethics that the designer can set for himself or herself. In this sense, Philippe Stark, for example, points out that in his professional activity he has set strict criteria and notes that: "First of all, I don't do anything that could have disastrous consequences for humanity; so, despite the financial implications, I don't work for arms, alcohol or tobacco companies, or whose origin is questionable" (in McDermott, 2001:143).

Unfortunately, just as there are projects that contribute in a remarkable way to improve the living conditions of some sectors, there are others that are carried out by depriving and harming social groups or the environment; projects in which designers may be involuntarily involved, either due to lack of information, negligence, omission, deception, carelessness, etc.

Such is the case, for example, of the so-called "New Mexico City Airport" (NAICM) designed by Norman Foster (in collaboration with architect Fernando Romero). Although this project is a clear example of mastery in the management of form, it is also true that, since its inception, the NAICM was insistently questioned by academics, environmentalists, scientists and the population in general, alleging a high risk of ecological damage, as well as social, historical and cultural landscape affectations. In addition, there were multiple allegations of corruption in the allocation and execution of the project. As a result, it was decided to definitively cancel the project despite the progress made in construction and the high financial costs.

FIGURE 3
AERIAL VIEW OF THE NAICM PROJECT

Source: OECD (Organisation for Economic Co-operation and Development), 2015)

Among the main complaints and criticisms of the NAIM project, the following stand out:

a) *Land dispossession of indigenous peoples.* Since the beginning of the NAICM project, several indigenous peoples of the Valley of Mexico have denounced the dispossession of their lands by the government of Enrique Peña Nieto and businessmen, with the purpose of establishing the NAICM there (Rodríguez Cortés, 2018). The rejection of the mega project has been permanent and reiterative on the part of the Coordinator of Peoples and Organizations of the East of the State of Mexico (Coordinadora de Pueblos y Organizaciones del Oriente del Estado de México). On behalf of this organization it was revealed that the authorities "have provoked the snatching of lands, forced displacement of inhabitants of the region and over exploitation of the aquifers" and it was added that "the prehistoric strip is being irreversibly damaged... and archeological vestiges that are the historical and cultural heritage of the peoples" (Arellano García, 2018) . Meanwhile, Castañeda and Castellanos (2016) point out that taking their land away from the inhabitants of the area implies the dispossession of their identity, traditions and way of life, and with it, part of their ancestral culture (Castañeda de la Cruz, E. Castellanos Suárez, 2016: 427)

b) *Adverse soil conditions*. Another of the complaints against the construction of the NAICM is related to its location in what used to be Lake Texcoco. According to researchers, the type of soil is inappropriate for an airport of such dimensions because it involves several technical difficulties, which would imply very high construction and maintenance costs for a country like Mexico. In this sense, it has been pointed out that the high rate of regional subsidence is due to the extraction of deep subway water (O'Riordan et al., 2017: 1067). It has also been mentioned that "Particular characteristics of the soils are associated with the ubiquitous presence of diatoms within the clay minerals present in the deposit" (O'Riordan et al., 2017: 1070).

c) *Unfavorable environmental impact.* In addition to the above, the negative environmental impact that such work would bring to Mexico City has been reiterated. Moreno maintains that "deforestation, erosion, are realities that affect the cultural and historical part, since the former

Lake Texcoco is and has been an urban and environmental reference of the most important city in Mesoamerica in history". (Moreno Sánchez, 2017a:114). It was also noted that "The most significant environmental problems considered by the work are pollution, potential flooding, water problems and alteration of ecosystems, as well as the natural area in extinction". (Moreno Sánchez, 2017b: 270). In an interview with Ramón Ojeda Mestre, secretary general of the International Court of Environmental Arbitration and Conciliation, it was also stated that "the ecological footprint of the new airport is much larger than what we had been offered and what we ourselves had endorsed". (Salinas Cesáreo, 2018:31).

d) *Acts of corruption and cost overruns related to the project*. Finally, some of the greatest disagreements are related to acts of corruption. It has been pointed out that the NAICM "is largely a private business, where the interest is economic, of powerful business groups, of governments such as federal and state" (Moreno, 2017a: 116). Furthermore, it has been highlighted that "NAICM cost estimates range from the official 186 billion pesos to 250 billion pesos" (Moreno, 2017a: 116). (La Silla Rota, 2018) . It has also been said that the cost of the perimeter fence was significantly overpriced. According to an investigation carried out by the Aristegui Noticias group, "Sedena raised the cost of the fence for the New Airport by 89% and used ghost companies". The initial cost of the perimeter wall was "1,547 million pesos, but after four modification agreements, the wall became more expensive until it reached 2,930 million pesos". This inexplicable overpricing was also linked to "ghost" companies, which again evidences act of corruption. In the same sense, Rendón (2018) pointed out that "In the last few days, the Superior Audit Office of the Federation (ASF) has disclosed several irregularities, diversions and mismanagement of billions of pesos in various institutions and ministries of the Federal Government".

Given the obvious inappropriateness of the project in addition to the acts of corruption, the current federal government of Mexico decided to cancel the project definitively despite the financial costs and the risks of investment losses.

Returning to the subject at hand, the fundamental problem with respect to the NAICM is the inexplicable participation of an architect of the stature and trajectory of Sir Norman Foster, especially if we take into account that the then federal government, headed by Enrique Peña Nieto, had already been internationally known for acts of obvious corruption. Given this scenario, one can only wonder: how is it that a project by an architect of the level of Sir Norman Foster could be in the midst of such a questionable situation; to what point should the ethical and social responsibility of the designer regarding the possible impact of his work on the ecosystem and on society reach?

The answer to these questions is easily found by assuming that Norman Foster is a "global architect" (McNeill, 2005) and, as such, their work fully responds to the unique and standardized world inspired by modernity . In this sense, the explanation becomes evident: Norman Foster participated in the NAIM project because, as a supporter and product of the dominant economic model, he assumed that the supreme value falls on capital and international symbolism where ecological and social issues are relegated to the background. The same could be expected of other "star architects" or "starchitects". Leslie Sklair says that Norman Foster, Frank Gehry, Zaha Hadid and Rem Koolhaas, as starchitects "deliberately espouse what I call the culture-ideology of consumerism in their work" (Sklair, 2010: 155). However, from our point of view, it is not justifiable for any designer -famous or not- to socially, culturally and environmentally affect native peoples with the excuse of a supposed advance to modernity and progress of a country; neither is it justifiable to participate in evident acts of corruption and dispossession of natural resources, nor is it justifiable to participate in evident acts of corruption and dispossession of natural resources.

It is here where ethical value must always come before economic benefit. For this reason, we insist on redefining the meaning and value of a profession such as design. Let us rescue its social character, let us respect the environment and let us put design at the service of humanity as a whole. It is not a matter of disassociating design from its role within the economic model and the market, but of dignifying the professional practice through a solid ethical orientation. Designing for the common good is as important as designing for luxury. Designing for the majority is as important as designing for minorities. In this sense,

both design education must promote ethical training and professionals must promote values by example. This is a shared responsibility that cannot be postponed. According to Milton Glaser, when he asked a group of design students between 21 and 28 years old, about the possibility of carrying out actions such as *designing a package to look bigger on the shelf* or *designing a package aimed at children for a cereal knowing that the contents are of low nutritional value and high in sugar* or even *designing an advertisement for a product whose frequent use could cause the death of the user*; 3 or 4 of those students said they were willing to go all the way, that is, participate in the advertising of a product whose use could cause the death of the user.

The above confirms what we have pointed out here: the urgent need to establish a common purpose through the academic world. It is clear that the idea of design as an activity fundamentally oriented to promote consumption is a widely dominant vision in the educational and work environment; however, it is also evident the need for a change of direction. This requires that design schools include content focused on strengthening social responsibility, environmental protection and, above all, an ethical and critical exercise of the profession. We cannot limit ourselves to simply reproducing a system that has generated so much inequality, ecological deterioration and complicity.

Finally, we would like to emphasize that, although design as an academic discipline has been elaborating and developing its own character and identity, its interdisciplinary vocation, which has distinguished it since its origins, has not been lost; on the contrary, it has been nourished by other disciplines and has thus enriched and strengthened its potential. Today, psychology, sociology and anthropology are fundamental pillars for understanding the role and true scope of design as an activity. How can we understand the user in all his complexity without the support of these disciplines? Herrera points out that the user has at least three dimensions: user as a Human Being, as a Social Being and as an Individual Person (Herrera Batista, 2021: 36)

CONCLUSION

While it is true that the prevailing economic model has boosted technological development, innovation and has expanded the supply of products, services and experiences linked to design as never before, it is also necessary to recognize the high costs that we, as a society, have paid. The enormous environmental deterioration translated into unprecedented deforestation, the production of solid and non-solid waste, the exaggerated consumption of energy and water, among other environmental damages that seem irreversible. The social costs have also been very high: large migrations, inequality and cultural impoverishment through the gradual imposition of standardized lifestyles[1]. Escobar has pointed out on countless occasions the need to recognize and respect the existence of multiple worlds, where the diverse cosmovision's that still coexist in today's society have a place. It is necessary to learn from the native peoples where a true cult to "mother earth", to the planet, to nature can be appreciated; facts that point in an opposite direction to the "modern world", to the world of globalization and the neoliberal model. In this panorama, design has a lot to contribute. As Herrera points out, there is a synchronic and a diachronic dimension to the act of design; the former "is universal and timeless" (Herrera Batista, 2021:24), that is, it does not change, it has always been there, while the second "is historically determined and it will change at some point" (Herrera Batista, 2021: 71) In this sense, it is to be hoped that the relationship between design as a productive activity and the neoliberal model will soon change to give way to new paradigms that will allow us to reorient and rediscover the true vocation of design: that of improving the quality of life of the multiple users (not clients) in all its diversity and complexity without this meaning the imposition of unique and standardized trends and, much less, the environmental deterioration and multicultural impoverishment that still persists in the world and refuses to die.

While the designer's social responsibility is a commitment to the community, ethics is a commitment to himself, a manifestation of his being and acting in the world. It is the awareness of conducting oneself according to "values" in order to find a harmonious and sustainable way of life (Papanek, 2003:13). "Values", says Papanek, "provide direction when decisions about alternative courses of action must be made" (Papanek, 2003:70)

Education is the ideal place to promote and strengthen the learning needed to change this reality "from within". Berman says that today, as never before, we have the opportunity "to responsibly use design to make a difference" (Berman, 2009:106).

Up to this stage, the discussion has focused on three areas: care for the environment, social responsibility and the importance of the ethical practice of design. This responsibility becomes even greater in cases where the designer has achieved recognition and prestige since, in some way, he or she becomes a role model. It is clear then that both higher education institutions and working designers must work to strengthen the ethical formation of the designer, as well as the sense of environmental responsibility and social commitment. It is time to give the same importance to the ethical training of the designer as to his or her training in aesthetics and management of form. For all these reasons we conclude this paper by addressing the relationship between both concepts.

It is clear that the designer, in his practice, not only brings into play all his knowledge, skills and experience; he also manifests his vision of the world, his social responsibility, as well as his ethics and values. Sociology and anthropology allow us to understand the user as a social and individual being at the same time, which contradicts the idea of a standard user.

Design must return to being a small-scale activity in order to adjust better to the real demands of users. All this demands a strengthening of the designer's education in these areas of knowledge. Changes must come from educational spaces, so that it is up to the academic world to promote fundamental changes in the practice of design. It is urgent to recover the original vocation of design: focusing on the user in all its dimensions.

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REFERENCES

Arellano García, C. (2018). Coordinadora de Pueblos exige parar obras del NAICM. *Periódico La Jornada*.

Barnbrook, J., Bell, N., Blauvelt, A., Bockting, H., Boom, I., Levrant de Bretteville, S., . . . Wilkinson, B. (1999). First Things First (1964 & 2000). *Eye*, *9*(33), 5.

Benyus, J.M. (2014). A Biomimicry Primer. In D. Baumeister (Ed.), *Biomimicry Resource Handbook: A seed bank of best practices* (pp. 7–16). Missoula, MT: Biomimicry 3.8.

Berman, D.B. (2018). *Do Good Design How Designers Can Change the World*. Professional climate change. ((American Institute of Graphic Arts), Ed.) (First). Berkeley, CA: New Riders Press.

Calvera, A. (2007). *De lo bello de las cosas: Materiales para una estética del diseño*. (Ana Calvera, Ed.). Barcelona, España: Editorial Gustavo Gili.

Castañeda de la Cruz, E., & Castellanos Suárez, J. (2016). Atenco: El inicio de una lucha por su identidad. *Revista Mexicana de Ciencias Agrícolas*, *7*(2), 427–439.

Chaves, N. (2017). *Relecturas del Diseño: Una inmersión en el discurso sobre el diseño para despejar sus nociones más controvertidas: Creatividad, innovación, arte, tecnología, función social*. Foro Alpha. Retrieved from www.foroalpha

Davis, M. (2017). *Teaching design. A guide to curriculum and pedagogy for colleges design faculty and teachers who use design in their classroom* (First). New York, NY: Allworth Press.

Escobar, A. (2018). *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. Durham, NC: Duke, University Press.

Etxezarreta Zubizarreta, M. (2007). ¿Es posible un diseño crítico? *Elisava Temes de Disseny*, (24), 2.

Fernández Alcalá, J. (2015). The principles of circular economy in product engineering. In *19th International Congress on Project Management and Engineering*. Granada, España.

Flusser, V. (2012). *The shape of things, a philosophy of design*. London, England: Reaktion Books.

Garland, K. (1964). First Things First Manifesto. *The Guardian*. Retrieved from http://www.kengarland.co.uk/KG published writing/

Herrera Batista, M.Á. (2021). The Ontology of Design Research (First). New York, NY: Taylor & Francis.

Jambeck, J.R., Geyer, R., Wilcox, C., Siegler, T.R., Perryman, M., Andrady, A., . . . Law, K.L. (2017). Plastic waste inputs from land into the ocean. *Science*, *3*(7). https://doi.org/10.1126/science.1260352

McDermott, C. (2001). *El gran libro del diseño de productos*. Ciudad de México, México: Mc Graw Hill.

McNeill, D. (2005). In Search of the Global Architect: the Case of Norman Foster (and Partners). *International Journal of Urban and Regional Research*, *29*(3), 501–515. https://doi.org/10.1111/j.1468-2427.2005.00602.x

Moreno Sánchez, E. (2017a). Lo ambiental del Nuevo Aeropuerto Internacional de la Ciudad de México, en Texcoco, Estado de México. Letras Verdes. *Revista Latinoamericana de Estudios Socioambientales*, (22), 248. https://doi.org/10.17141/letrasverdes.22.2017.2504

Moreno Sánchez, E. (2017b). Lo urbano y lo local del nuevo aeropuerto internacional de la ciudad de México, en Texcoco, Estado de México. *Espacio Abierto, Cuaderno Venezolano de Sociología*, *26*(3), 91–118. https://doi.org/10.17141/letrasverdes.22.2017.2504

O'Riordan, N., Antonio, C., Ciruela, F., & Kumar, S. (2017). The stiffness and strength of saltwater Lake Texcoco clays, Mexico City. In *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering*. Seoul.

OECD (Organisation for Economic Co-operation and Development). (2015). *Effective Delivery of Large Infrastructure Projects (Summary in English)*. Paris, France: OECD Public Governance Reviews. https://doi.org/10.1787/9f455c5b-en

Papanek, V. (2006). *Design for the Real World: Human Ecology and Social Change* (Second). London, England: Thames & Hudson.

Pilloton, E. (2009). *Design revolution: 100 products that empower people*. New York: Metropolis Books, c/o D.A.P.

Polak, P. (2008). *Out of Poverty: what works when traditional approaches fail* (First Edit). San Francisco, CA: Berrett-Koehler Publishers.

Reddacion. (2018, May 9). *El aeropuerto más grande del mundo costaría casi igual que el NAICM (Gráfico)*. La Silla Rota. Retrieved from https://lasillarota.com/aeropuerto-mas-grande-mundo-costar-igual-naicm/221583

Rendón, V. (2018, February 22). Detectan irregularidades en casi mil millones de pesos para el NAICM. *CC News*. Retrieved from https://news.culturacolectiva.com/noticias/asf-detecta-irregularidades-en-construccion-de-nuevo-aeropuerto/

Ritchie, H., & Roser, M. (2018). *Plastic Pollution*. Retrieved from https://ourworldindata.org/plastic-pollution#global-plastic-by-sector

Rodríguez Cortés, R. (2018, July 23). Pueblos originarios de la Cuenca del Valle de México firman manifiesto contra NAICM. *Periódico Supremo: El Poder de La Información*, pp. 1–2. Retrieved from http://periodicosupremo.com.mx/2018/07/23/pueblos-originarios-la-cuenca-del-valle-mexico-firman-manifiesto-naicm/

Rodríguez Morales, L. (2012). *El diseño y sus debates: Antologías*. Ciudad de México, México: Universidad Autónoma Metropolitana.

Salinas Cesáreo, J. (2018, March 19). Impacto ambiental por NAICM, mucho mayor al aprobado: Corte internacional. *Periódico La Jornada*, p.31.

Sklair, L. (2010). Iconic Architecture and Culture-ideology of Consumerism. *Theory, Culture & Society*, *27*(5), 135–159. https://doi.org/10.1177/0263276410374634

Smith, C.E. (2007). *Design for the other 90%*. New York: Cooper-Hewitt, National Design.

Sparke, P. (2013). *An introduction to design and culture 1900 to the present* (Second). Gloucestershire, Great Britain: Routledge, Taylor & Francis Group. https://doi.org/10.4324/9780203129999