

## INHABITABILITY: A CORRELATIONAL CONCEPT FOR PRODUCT DESIGN DEVELOPMENT. FINDINGS AND SUGGESTIONS

Viviana Polo

Faculty of Architecture  
Art Design and Department of Costume Design  
University of Sanbuenaventura of Cali, Colombia

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### ABSTRACT

The possibilities for the permanence of a human being in a certain place depend on what tangible and intangible variables surround him and on the availability of "resources". Thus, it is historical conditions that dictate how our needs are projected and focused. Depending on channeled and suitable resources to serve our purposes, we implicitly make them ours. What is important here is not just how we use and exploit these resources but also how we emphasize our unconditional reason for their enduring presence and incidence in complementing man's vital cycles. Hence, material resources, created and adapted by man, create the spaces and time we live in. Therefore, these limitations let us know what is appropriate, which is represented in our dependence on objects.

History shows man's capabilities for survival and points out his possibilities to create links between the tangible and the intangible, between his physical and his spiritual world. The essence of creativity focuses on meeting man's needs, some of which may pose certain life or survival risks. What distinguishes man's conditions the most is what makes him evoke his first habitats for his physical body and his spirit. If we are open to reasoning and understanding, we can conclude that the true essence of inhabitability lies in the understanding of the relationships we establish with our environment. Therefore, inhabitability as a concept in product design takes us to the triad adaptation/viability/feasibility, a basic conceptual framework for product design that can guarantee a higher synergy and safety for humanity's future well-being.

**KEYWORDS:** Inhabitability, design, inclusion, future well-being, product

### INTRODUCTION

If we look at man as a living being, as a protagonist in a natural scenario, the composition of the scenes he develops become evident. The stories of the creation of the world show the beginning of the earth as a space to be inhabited, followed by the complexities of the natural kingdoms and then the appearance of man as the administrator of all these resources. Alvin and Heidi Toffler [1] define the process of man's life on earth as encompassing three stages: The first one, appearing with the agricultural revolution, where man had total control over the land (a possession translated into richness); and which lasted until the emergence of the industrial revolution, where the land starts to lose its "treasure" character. These two revolutions would be followed by the digital revolution. Thus, man progressively abandons the land and his political power over it and moves to the cities, the axes of commerce. But he is not prepared to live amidst this densely populated habitat, where the quality and quantity of vital space offer a smaller area for each person and his activities. Physical space

has gradually shrunk thus altering people's lifestyle and accelerating their daily processes. This space reduction would suggest the reduction of people's dimensions as well. Hence, an object takes a space and at the same time it generates such a space. Likewise, an object exhibits features and potentialities which make it part of an ideal solution. Therefore, it is necessary to widen the meaning and power of the object, so that as part of a systemic complexity, it can synergically respond to the reality of consumption and to the population's present and future needs.

Inhabitability is an inherent human condition that seeks to appropriate space and time and adapt to it by dominating objects, in a quest for development and need satisfaction. Therefore, habitability is thought of as the result of the variables affecting human beings and their intrinsic determinants (needs, wishes, abilities). In general, it is the so-called inhabitancy [2], which together with external factors influences the human being and the conditions determining his development (geographic, natural and artificial resources, and political and cultural factors). But it is not just these physiological factors and their corresponding natural dynamics which affect man's behaviors, but also- and to a great extent- the flexibility resources (natural and artificial): events, and people and their behaviors influence objects and people's capacity to adapt by means of knowledge and representation. This dynamic factors act as a filter in every person's life in as much as his voice and identity remain as a means and culture.

The concept inhabitability defines the true capability objects have. Therefore, it alludes to the human being, in search of self-development and that of his environment. For the human being to be able to behave as a vital element, the organic environment components should provide him with energy and vitality and become "fractals" of him and of his biological, physiological, social, and psychological actions/acts. Based on its structure, this leads to a series of transformations which turns life into an effect-producing natural cycle, thus altering people's natural behavior and playing a role in the transformation of their physical traits and their behavioral adaptation. From the standpoint of the Universal Human Needs, Max-Neef [3] puts into a flexible matrix the nodes having, being, doing, and interacting are hierarchically organized from man's acts and objects. This is the ultimate basis of inhabitability.

In connection with all the above aforementioned, the designer, as the professional in charge of product creation, holds himself socially responsible for what these objects may bring, and so he must have a thorough and explicit understanding of the conceptual bases of space, time, human being, through his search for an efficient dynamics of product design. The role of design should involve and understand what distinguishes inhabitability as a concept. This inherent understanding is crucial in dealing with the domain of human senses and the human characteristics, synthesized in the world and consequently in the classification knowledge, and the correlation among objects and the different uses given to them. In the logic of future well being, a lifestyle based on inhabitability as a design concept will allow for adaptation, viability and feasibility, following Senn's [4] idea of State of Fundamental Well being: "reaching a long- term goal through meeting short-term needs."

From the perspective of inhabitability, the use summarizes the action and acting, the ways human feelings are reflected, and how this being and acting are shown. In the categorization of using, what belongs to the collective domain lies in the basic uses expressed by social rituals: what everyone does and how everyone acts. It is the meaning of the interplay between external and behavioral entities, as part of a system. The following is a categorization of uses from the perspective of inhabitability.

## 2. CONTEXTUALIZATION OF USE: INHABITABILITY - DESIGN - PRODUCT [5]

The classification of use, in terms of its interpretations, is open and diverse. In terms of inhabitability, use is the condition that activates the notion need/activity, a duality serving as reference for the validation of daily human satisfaction. Then use, understood as the action of utilizing or employing something, interprets an action in terms of its results.

For Heller [6], use is directly linked to human capabilities, on which the meaning of an object is based and which trigger continuous human interactions and relationships for and with the object through the use given to it. Thus, use is the axis of material relationships, from the discernment of an action. It is use that makes it possible to dictate the options and characteristics of the man/object relationship, turning it into an undisputable variable of daily life and making it appear as reference for needs satisfaction, the ultimate goal of product design. How an object behaves depends on the use made of it, one which is affected by cultural and ideological constraints and in turn explains-from different perspectives-man's behaviors. Therefore, if a certain culture endures, this is perceived in the meaning it gives things (objects) and itself, through the being and acting of the object. No matter how complex the characterization of needs and of what satisfies them; no matter if needs are satisfied by natural or created means, needs will always be part of the human environment.

The human being has inherent needs. As being and subject capable of creating categories of environments and objects, he also possesses an individuality that drives him to

complement himself. In addition, he seeks the validation of other "things", which is expressed by the cultural interpretations (subject) or by the meaning of his biological survival (being). Consequently, and from the perspective of the inhabitable, use is thought of as the point at which the meaning of the relational variables of life converge. Hence, it is appropriate to think of inhabitable as pertaining or being associated to the notion of design.

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### 2.1 Uses: Basic, Private, Conditional, and Personal.

**2.1.1 Basic use:** It shows the power of what is needed and the balance with what is not. It gives insight into the moral standards (what to do, how and where), according to the social function. The human being, as far as living in the area of basic uses, exerts control over the events taking place within the space-time sphere, in harmony with a group, but does not dictate anything about their particularity and individuality. Generally speaking, it is through social attitudes that collective values, moral standards, and ethics are expressed.

#### 2.1.2 Private Use:

It is a complex system of relationships that affect the personality and, consequently, the actions within a given medium, between one stage and another (understood as personal learning and back- ground) where variations are made evident in the personality and neighboring groups. The private use is evolutionary in nature due to the interaction of the stages, which tends to be institutionalized.

#### 2.1.3 Conditional Use:

This is made up segments of emphasis of the personality in connection with the basic use. Here, variations between institutionalized uses and new uses take place.

#### 2.1.4 Personal Use:

These are the direct personality traits, rhythm and vision of life, and the modal classification of space and time. As far as they concern an individual, the structures of personal uses are unique; no two people are alike, which explains the main reasons for individual behavior.

In the perspective of inhabitability, the designation and delimitation of uses is given by the meaning of each of the inhabitability phases, below.

## 2.2 Phases of inhabitability as a concept for product development and its relationship with use

### 2.2.1 Habitat and use

In inhabitability, as a design concept, habitat is defined as its first station, where space, man, time and object, as the basic relational variables of design, are present and have a static meaning. Being passive reflects wishes for the activation of the uses and synthesizes the qualities of the objects as they first appear to be, making them vulnerable to what humans want to do with them. In the habitat, humans are manipulated by the inductive nature of the object. These relationships refer to passive and active time and assets in connection with real and virtual spaces. The use habitat is the condition of a passive and potential use that addresses the qualities of the object in the basic sense of need regulation.

### 2.2.2 Inhabit and use

In inhabitability, the concept inhabit is defined as the level of movement par excellence. The variables space, object, human being, and time are flexible and interacting, allowing for a hierarchy, where some of them are dominant and others dependent. At this level, man has built a draft of his operating map and routes it to the main echelon within the system. His potential for movement is shown at the next level. The appropriation of the stage will determine the behavior of the variables; the relationships become stronger and the actor turns into a dominant one.

The use inhabit is thought of as the reason for the action transformation and the hierarchy which specifies the production of uses and generates an attitude dependence. It shows a new generation of uses encoded from the generation of basic uses. Finally, this involves transformation from the perspective of conception, observation and creation of differences among human beings and how these differences are expressed in time and space.

### 2.2.2 Inhabitable and use

The concept inhabitable suggests that in the action developed and supported by objects, these have been both designated (given a value or a name) and dominated by man. He, as a living variable of system of objects, organizes his environment and meets his needs as he uses such objects. Those spaces which were vaguely denominated are now identified through the use given to objects along man's activities. Thus, and from a hologram standpoint, the space among objects becomes stronger and their transformations more complex as man's needs are satisfied.

The use inhabitable appears as domination dynamics and deals with the rhythm and frequency of man's actions. Hence, it sets an individual apart from others. This use stands as the axis of the relational variables (human being, space, object, time). Therefore, inhabitable, as a convergence point, also sets the conditions for divergent relationships in the apprehension of objects and the satisfaction of man's needs. Consequently, inhabitability, as a human inherent trait, and use, as action of object validation, constitute a proportional relationship in human development and culture.

## 2.3 Inhabitability and Design and Product for Future Well-being

The interplay of the phases of inhabitability and use make for and reinforce the understanding of the world as a multi-dimensional structure, considered from different approaches that allow for an overall development. This is what Weis [7] called Design for social well-being, which involves human, social, economic, environmental, and political development. The link between the concept of inhabitability as a basis for product development, Max-Neef's scheme of basic human needs and Weis' approach reinforces the general provisions for product development, which from the perspective of design set into motion environmental, operational, technological, usable, symbolic, cultural, aesthetic and social variables [8]. Complex as they are, these variables constitute the basis for global product design and, in accordance with theoretical frameworks, the input for product development globally and in accordance with the above conceptual frameworks cause a product to emerge from the genesis of an object that has been transformed by inhabitability.

## 3. EVERYDAY-LIFE METHODOLOGY: THE TEACHING OF INHABITABILITY IN THE DESIGN CLASSROOM

From a theoretical and practical understanding of the language of form, as the essence and basis of the language of design, we propose to raise awareness of spatial thinking and search for multi-dimension and its basic creation, based on observation, exploration and basic forms-in intrinsic and relational ways-through the application of the basic principles of design and composition. The language of design focuses on building the foundations required for the implementation of the concept of inhabitability as A basis for the training of the designer-to-be who develops his ideas and arguments by using information provided by his environment (both natural and artificial).

All the above indicates that from a theoretical perspective, environmental information permeates the conceptual, visual, relational, practical, and compositional elements which together make up the core of form creation. In conjunction with the traditional theoretical basis a parallel is made between a mechanical apprehension of the environment whose particular applications (pliability, collapsibility, flexibility, and portability) are inherent determiners of conceptual design constructions and the basis for building up concepts like bi- dimensional , tri-dimensional, and human. Thus, when explicitly considered, these aspects will provide the student with a series of ready tools for future design tasks.

### 3.1 Skills to be developed from the inclusion of inhabitability as a concept for product development

- i. Ability to deconstruct the readings of the environment, recognizing that every created entity encompasses some form of design.
- ii. Ability to synthesize, which involves being able to gather information, transform this into an idea which will later become a proposal.
- iii. Ability to assign values multifunctional values to the formal codes surrounding him and which make up his language as a designer.

- iv. Ability to install in his field configuration elements that will enhance future design results and processes.

### 3.1.1 Relevance of a conscious teaching of inhabitability in design education

Raising awareness about the role of inhabitability in how the student positions himself within and from the language of form (as the genesis of product development) is both relevant and necessary. This awareness makes it possible for the student to recognize his environment (pragmatics), transform it, and value the morphological, syntactical, and semantic possibilities that may support his design and development proposals. Therefore, it is expected that the conceptual aspects shaping dimensional and three-dimensional product development, as well as the dynamics of this process be instrumental in design students' attaining the following objectives:

- i. Recognize and apply the basic language of form to develop skills and abilities to generate creative ideas.
- ii. Propose from the code of form compositions that exhibit multi-functionality, spatial relationships, and possibilities for adaptation of every-day life elements to different contexts.
- iii. Recognize and use of basic mechanics concepts and their role in learning and environmental dynamics (inhabitability).

## CONCLUSIONS

Incorporating the notion of inhabitability to the teaching of design concepts-both in basic and specialized education will allow for level analysis in product coding and space, time, and human activity control. These codes signal the emergence of form. Their conscious apprehension will accelerate processes, so that resources, including technological ones, can be provided for the appropriation and appreciation of environmental factors, in order to guarantee that new products are flexible and exhibit conceptual, aesthetic, and cultural characteristics, in connection with the product's form, function, life cycle, and people's future well-being.

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