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NARRATIVE OBJECTIFICATION: PROCESSES AND METHODOLOGY OF VALUE CREATION THROUGH NARRATIVES

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ABSTRACT

Design innovation first belongs to the symbolic and cognitive dimension, rather than to the material dimension. Its outcomes are cultural objects even before being tangible and technological objects. Therefore, the design activities - even those that precede the creative phase - are never solely acts of understanding, but also of interpretation, encoding, and translation. This happens through a real intervention of re-writing that orients the system of detected signs towards the design intention. Within these systems of signs, processes of abstraction take place and lead to visualize the design problem. These are processes of objectification that make contents which are typically transmitted by verbal/visual narration, as in the case of reconstruction of cultural contexts. The descriptions of intangible facts - such as lifestyles, visual and expressive languages or artifacts - should be regarded as scenarios in which there are new values, attitudes, consumptions use, and thus orient the design practice.

In design thinking, the convergence of many different disciplines, most of which come from the area of humanities, has always fueled a great interest in the transfer dynamics of content, practices, methods, tools and in the related processes of appropriation, assimilation and adaptation which renew design practices as well as the theoretical debate around them.

Considering this successful relationship the paper will focus on recent theoretical interests that animate the debate within the disciplines of design of the nature, and on some conceptual tools that the design sphere borrowed from the humanistic disciplines.

Keywords: design & humanities, open artworks, singularization, Narrative Objectification, Story-Telling

1 CULTURAL OBJECTS AS TOTAL SOCIAL FACTS

Design innovation first belongs to the symbolic and cognitive dimension, rather than to the material dimension. Its outcomes are cultural objects or, as Mauss states (2002), *total social facts*, (a term introduced by Marcel Mauss and later rephrased by Claude Levi-Strauss, to define those facts "impregnated" with sociality, both effect and cause of the social dynamics of a different nature: economic, technological, religious, magical, mythical, sexual practices, metaphorical etc.), even before being tangible and technological objects.

As cultural mediators, objects are imbued with representations, theories and visions of the world, and with culturally-shared meanings. Around objects, there exists a sophisticated and complex system of communication which feeds images and, with them, gives sense to objects through a process of metaphorical transcription which employs symbolic forms of expression capable of taking us to the land of imagery (Dorfles, 2003). Their symbolic contents are the result of social systems that speak of, write on and are told through objects,

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thus producing discourses by feeding the imagery of which objects become emblematic concretions.

In this sense, the designed objects - as explained by Giovanni Baule (2013: 34) - of whatever kind they may be [...], are an "intersection of narratives - or rather like a real - narrative tangle where what prevails is precisely the non-linearity of the tracks and their inexhaustible intersection, opening to limitless exploration".

What makes the process of signification endless is also the fact that an object not only mirrors a society, embodies all the myths, demons, and ghosts of a culture, but also lives of the intimate dimension established with those who possess it, to the point of reflecting their identity. To the point of becoming their extension, not only physical but also mental and emotional. The objects we surround ourselves with speak of us, are constitutive of our identity and, with it, they change meaning or disappear to make way for new items and new stories (Starace, 2013).

This closer relationship between things and people certainly highlights that "things - even when caught in their ordinary functions - are charged with multiple layers of meaning, a meaning that is lost when we reduce them to mere use and exchange values" (Pizzocaro 2013: 30), and makes tangible the process for which the intentionality of the observer becomes an attribute of the object.

Removed from the world of pure materiality, objects lead us to reconsider the design activity not under the simple category of technical gestures but instead through the most complex processes of interpretation, encoding, and translation. This happens through a real intervention of re-writing that orients the system of detected signs towards the design intention.

A fundamental contribution to this shift were the considerations of many humanistic disciplines in which the old division - a true dichotomy - between technology and culture finds, right in the world of objects, an important place of welding. We are not able to identify the leading discipline in this change since many point of views are tightly intertwined.

The point of view of *ethnographic studies and social and cultural anthropology* provided a focus on the systems of beliefs, traditions, customs, rituals, myths, behaviours and habits, mediated by objects and strictly dependent on the cultural contexts in which the symbolic and functional needs of objects are built. *Semiotics* introduced a special attention to the problems related to the sense and meaning of objects and their varying depending on the context and the user. The *sociology* of cultural process has brought the world of design closer to the concept of "community of practices" by introducing the contextual perspective that reads design - and the very subject of design - as a "placed act".

2 OBJECTS AS OPEN ARTWORKS

The density of sense to which the object gives shape is the result of a slow process of accumulation that lasts the entire life of the object and traces its biography. The starting point of this process - the birth - coincides with an act of reification - the design - capable of making abstract meanings and values

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tangible. The shape of the object is then also content, a place of mediation and translation into materic sign of technical, functional, linguistic, economic but above all cultural needs. Yet, it is the complex set of narratives - which accompany and surround the object once it leaves the creation laboratory - that builds its "reputation." These are the neurotic narrations of function rituals of which the object becomes a fetish; the nostalgic narrations of which the object materializes the memory; the narrative sequences of the liturgical acts of which the object embodies symbols and on which it imposes gestures; the narrations of the brand of which the object becomes sign surface; the narrations of group identification of which the object becomes an element of inclusion/exclusion.

The object is in other words polysemic by its nature, subject to multiple interpretations beyond the control of the designer and even beyond its own function. Every relationship between subject and object produces an appropriation that is attribution of sense, reduction - which is then expansion - to singularity. The theme of the object individually and all forms of *singularization* (Vacca, 2013) are somehow a novelty that may have, for the world of design, operational impacts (definition of new design tools) and cognitive impacts (new reflections on the nature of the design activity).

This does not imply the retake of forms of design (design forms for systems and components, forms of shelf innovation, forms of carry-over, etc.) developed to respond to the needs of mass customization, intervening directly on the body of the object: to each his own. On the contrary, this implies the incorporation into the design process of the user's (users') view - of the users - and with it the "scene" (scenes) in which the relationship between object/user/context will be produced. Within this shift, the context comes into play with a decisive role since its variation, and that of the objectives and perceptions it induces, modifies symbolic function of the objects. It directs and focuses the attention of the user triggering new processes of signification. Each new context, in other words, defines a new "frame of sense" within which each user "makes" the same object "his own" (Penati, 2013).

It seems appropriate to borrow the idea of *relational object* from art criticism (Bourriaud, 2010), i.e. the idea that the form - in the ontological sense of the word - is defined through the gaze of others. "*No forms exist in nature [...] it is our gaze that creates them, cutting them into the thickness of the visible*" and also "*the form of an artwork is born from negotiation of the intelligible we have inherited*" (Bourriaud, 2010: 21-26). In the contemporary making of art, starting with the work of Duchamp - poetic manifesto of this philosophy - "*viewers make the artworks*" (Duchamp, 1954) and the change of context gives new sense to the objects which, removed from the sphere of functionality and encoded modes of use, even become - through a series of manipulations - works of art. (Goodman, 2008).

Umberto Eco was the first to discuss and fully examine this point of view. While introducing us to the artistic work as an "*open artwork*" (Eco, 1962). The author completely defines this concept, in the semiotic sphere, starting from some premises previously discussed by Roland Barthes. For both authors, the text and the work of art, as well as - for the authors of this essay - the object, lend themselves to multiple interpretations depending on the users rather than the author. And indeed, each user can change his own interpretation of the same object over time, according to the different contexts in which it is inserted and to the different purpose / intent of use etc.), based on the relation between the

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"*completeness*" of the object according to an intention and the "*openness*" to the plurality of experiences and interpretations of different users, Eco defines form as a "*field of possibilities*" (Eco 1962: 158), as a set of possible meanings. This definition brings us closer to that design process that we call meta-design. It is a conceptual place of construction of "open artworks", of meaning systems that lend themselves to being inflected; it is the narration of possibilities which opens to all the possible narrations that follow.

3 **OBJECTIFICATION: DESIGNING THE SINGULARITY OF THE OBJECT**

The complex relationship with objects reflects in a certain way not only the bond they can build with the end consumer, but also the relationship that can be traced with those who have first designed and then produced them. If the object can be read as "*an open artwork*" (Eco, 1962), which carries a plurality of meanings that are attributed by a consumer to assert his identity (Starace, 2013), it can be argued that many of these narrations are intrinsic to the object itself and are the explicitation of a *meta-design* process capable of processing sense contexts and value systems which allow the object to relate to an audience that understands its value and singularity.

If, for more than one hundred years, design was inspired by the proverbial rule, "*form ever follows function*" decreed by Louis Sullivan, it has now undergone a major paradigm shift that interprets the design and manufacture of artefacts no longer in a functional/formal key, but through a way of working that is confronted with complex and multi-cultural systems able to configure design scenarios that best adapt to the changing contexts of contemporaneity.

The consumer is not passive but a cultural individual/actor (Fabris, 2003) who deeply knows the market and is no longer satisfied by a standardized product, but requires a character of exclusivity, authenticity and particularism (Castells, 2004) to achieve his identity through consumption. The object then becomes a narrative mediator that incorporates a set of values and meanings which construct the context and experience of design itself.

Yet, "*an object is never narration itself*" (Pinardi, 2010: 172). It is rather the expression of a design story, the representation of a process, of an experience and of a life that can communicate with the emotional side of a hypothetical interlocutor. As demonstrated by the psychologists Fritz Heider and Marianne Simmel in their essay *An Experimental Study of Apparent Behavior* (1944), if the human mind is hit by a set of random narrative stimuli, it will fail to avoid weaving a story that links them (Haven, 2007), imposing a narrative structure to a succession of meaningless information (Gottschall, 2012). The attitude of the narration is then intrinsic to human nature and becomes a design tool of great impact for designers as it allows to provoke an immediate emotional response. An artefact can then be inherently narrative if conceived and designed as a "completed narrative object" (Pinardi, 2010), that is if it presents those textual, evocative and metaphorical attributes which make it text and communication vector. The act of design is then understood as a process of expanding the identity of a cognitive artefact and is separated from the purely functional dimension in favour of the affirmation of an individual socially and culturally shared value, thus contributing to making the object *singular*.

Therefore, the *singularization* is a design-narrative approach aimed at the construction of sense contexts in which to inscribe the objects bearers of intrinsic narratives.

As told by anthropologist Igor Kopytoff (1986; 2005), certain categories of objects have now undergone a process of de-commodification that allows them to acquire an individual value that makes them *singular*. These are narrative objects, able to tell their own cultural biography, to show their individuality, strengthening the relational bond they establish with the subjects they confront. Their *singularity* lies in the testimony of a design approach that can assign an autonomous and personal sign function. These are objects that refer to history and to culture and represent the explicitation of the meta-design experience. They implicitly hold a story waiting to be read, understood and lived. Their value lies in the ability to establish relational systems with the context, the territory and the consumer. A value as sign that, in the set of emotional, evocative and experiential relationships, constructs the meaning and sense of a new design, becoming a communication vector of great relevance. In the process of designing the *singularity* of the object, the emotional component is fundamental because "*emotions change the way in which the human mind solves problems – and because – the emotional system changes the operational modes of the cognitive system*" (Norman, 2004:16). In fact, the object is not solely seen as a tangible and pragmatic response to a given need but also read in an abstract and symbolic key, expressing a multiplicity of cultural meanings that generate a logic of affection with the consumer evoking cultural contexts and implicit meanings (Norman, 2004; Turkle, 2007). The *singularization* process is therefore a design/narrative approach that, if understood as a prefiguration tool, is capable of building value-worlds within which the complex nature of cultural artefacts may find its own cognitive dimension. The *singularity* acting then allows us to unequivocally describe an object highlighting the individual stories which, imprinted on the surface, help to produce and transfer its meaning.

4 **NARRATIVE OBJECTIFICATION. PROCESSES AND METHODOLOGY OF VALUE CREATION THROUGH NARRATIVES.**

If the theme of *singular objects* necessarily leads to the revaluation of the operational and cognitive tools, underlying the design activity and employed in order to also include the "view" of the user in the design process (cf. Penati), in the same way it is essential to question the data of the context of which an object is a part. The context takes on the role of phenomenal space, which simultaneously contains the object and the subject of interpretation. The context of the installed space where the object is located is represented by a display set. Its representation is produced by the interaction, simultaneous and complex, of different systems of meaning: the language of the object, or objects, the logic of their arrangement within the space and the very structure of this space. In addition, other systems often operate at the same time, such as the language of the word, in various forms of written text, the language of graphics and those related to sensory and perceptive phenomena. Through customs, conventions and peculiarities, but most eminently negotiations (Eco, 1997), the context becomes a *scenic context*; narrated, interpreted and shared. The narration enables man to give meaning and sense to his experiencing and outlines interpretation and prefiguration coordinates of events, actions, situations, and

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on these foundations builds forms of knowledge that orient him in his acts. The scenic space is, therefore, "landscape" (Socco, 1996), as the scene of our existence, inseparable part of the reconstruction of the memory of our lives. An existence in balance between *internal space* and *external space* that develops within a complex twine of meanings and beliefs in which the subject lives his experiences, enriching more and more his encyclopaedic heritage (Eco, 1979, 1994) with sense. The reading of the space as *scenic context* leads to what Eco (1975) has called "scripts" of encyclopaedia, where the concept of the encyclopaedia is the reference point for regulating the interpretation activity. The entities related by a communication process activate encyclopaedic portions, select contexts, choose or exclude semantic properties. The same contexts are characterized by customs, conventions and peculiarities that govern the communication relations of the subjects who move within them and the encyclopaedia records these conventions in the form of rules, codes, sub-codes and scripts.

The linear, canonical landscape carries a specific semantic contribution and its meaning is closely related to the scenes found in the encyclopaedia of the observer, the "unusual", unexpected, non-linear landscape "plays" through a series of experiments on the pair "text-scene" to reach a potential for innovation within the encyclopaedic atlas. If we consider the *decontextualisation* where "scene" meanings are not yet registered in the encyclopaedia, for example, with the use of metaphor, creating a sense of alienation in the observer, it is especially the art world that gives us interesting experiments, since when "Duchamp knew that an object, once removed from its usual context, is perceived with a new and unsuspected force by the viewer" (Menna, 1965). In this way, the context in which the new "singular product" (cf. Vacca) moves necessarily introduces new connections and is therefore driven by the need to make further experiments on the relation text-scene.

In the relation between text-context, verbal language and analogic language confront and measure each other; the individual product is, at once, both material product, i.e. set of attributes related to technical, practical, design and production knowledge, and intangible/symbolic product, that is an object reconstructed from knowledge, and therefore provided with value. No product is purely its self, but represents itself as a constituent part of the system of material and immaterial supply; the interpretation and reading guide overlaps the pure perception. The problem that is presented to the designer is the definition of the logic of this representation, both narrative and descriptive but, however, an integrated and focused action. The product is not indifferent to the visual angle and the distance from which the view is permitted; to allow physical contact with the object, or to lock it up behind a glass cabinet, involves different situations and judgments. The representation is inevitably a construction of limitations, and to highlight some properties of an object means to put others in the background: exhibiting an object therefore implies a selection of conceptual, physical and semantic points of view. The installed context also stimulates certain forms of attention, of learning and of assessment: it cannot be neutral towards the exhibited materials. The autonomy of the object is determined, in part, by the logic of the context: in a space, however defined, displaying one or more objects implies building contexts, an exhibitiv set.

The oriented configuration of systems brings to the surface both the relations between the objects and the relations between the characteristics attributed to them, as well as the relationships they establish with the observer. In this

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configuration objects, characteristics and the public reinforce each other, highlighting the similarities as well as the differences. The design-narrative approach underlying the *singular product* complexifies the contemporary design landscape and increasingly tends to build installed scenes in which the structure of space is more and more a place of co-participation with the user. Alongside this process of recognition of the value of narrative design, as a system in which *linguistic and semiotic* interest are intertwined, there certainly runs a second process: that of the need of developing a theory of *figurative-symbolic* argument and of recognising the innovation underlying the *pragmatic-design* thinking. The ability of the argument to represent the *space of narration* is emphasized by the *meta-design* process, connected both on a linguistic level and on that of production of *scenarios*. It is the space that comes out of its physical perimeter to interact with the virtual, with the emotional space or, even, which holds relational and experiential functions.

5 CONCLUSION

The world of objects thus shows us a panorama in which the data read by the retina are surpassed in favour of a more profound interpretation. The values that belong to the realm of technology and function have been increasingly juxtaposed by aesthetic and symbolic values, i.e. the values belonging to the world of cultural processes. The emphasis on the cultural dimension of the object leads the designer toward the need for a broader comparison with the dimension of meaning that products take along their lifecycle. It starts from the design phase in which the sense of the "culturally constructed world" becomes a part of the process of generating ideas as well as of the elaboration processes, coded or not, of which it is embedded in its becoming. Objects interact with the user based on the ability to express the cultural openness able to tell, even on the surface, the sense values that the object carries. This refers to the history and histories of objects, of workmanships, of territories, of material or experimental peculiarities. As a layering of "narrative experiences", the object is able to create contemporary cultural complexity. The "narrative experiences", in part an explicit result of design, are amplified in the relationship between subject and object, between product and user. In fact, in producing layers of meaning of the object, an intervening factor are the multiple stories of users in their private relationship with the object itself and the collective and social dimension which plunges the object in the images and in the social imaginary, thus reconnecting it to the "spirit of time".

Education certainly represents the most immediate of all the possible applications. Education, in this sense, is the place where to instil student with a complex vision of the object, to learn new languages and new tools for understanding and sharing of meaning, to be able to interpret and construct new codes, to perfect new modes of perception, to make the student / designer capable of handling not only the universe of meaning but also that of sense; to give a new focus to secondary functions instead of to primary ones.

6 AUTHORS' NOTES

The paper is the result of common research and findings, nevertheless, sections 1, 2 and 5 were edited by Antonella Penati, sections 3 was edited by Federica Vacca and section 4 was edited by Valeria Iannilli.

7 REFERENCE

- Castells, M., *Il potere delle identità*, Edizioni UBE, Milano 2004
- Baule, G., *Intersezioni. La pratica estesa delle scritture di progetto*, in A. Penati, *È il design una narrazione?* Mimesis, Milano 2013
- Bourriaud, N., *Estetica relazionale*, Postmedia Books, Milano 2010
- Dorfles, G., *Nuovi riti, nuovi miti*, Skira, Milano 2003
- Eco, U., *Lector in fabula*, Bompiani, Milano, 1979
- Eco, U., *Kant e l'ornitorinco*, Bompiani, Milano, 1997
- Eco, U., *Opera Aperta*, Bompiani, Milano 1962
- Eco, U., *Six Walks in the Fictional Woods*, Cambridge: Harvard U.P., 1994
- Eco, U., *Trattato di semiotica generale*, Milano: Bompiani, 1975
- Fabris, G., *Il nuovo consumatore: verso il postmoderno*, Franco Angeli, Milano 2003
- Goodman, N., *Vedere e costruire il mondo*, Editore Laterza, Roma-Bari, 2008
- Gottschall, J., *L'istinto di Narrare*, Bollati Boringhieri, Torino, 2012
- Haven, K., *Story Proof*, Libraries Unlimited, Westport, 2007
- Heider, F., Simmel, M., "An Experimental Study of Apparent Behaviour", in *American Journal of Psychology*, 57 (1994), pp. 143-259.
- Kopytoff, I., "La Biografia culturale degli oggetti: la mercificazione come processo" in E. Mora (a cura di), *Gli attrezzi per vivere*, Vita e Pensiero, Milano 2005
- Mauss, M., *Teoria generale della magia e altri saggi*, Einaudi, Torino 1965
- Menna, F., "Un trittico per Dada", *La botte e il violino. Repertorio illustrato di design e di disegno*, n. 4, II Annata, Castaldi, Roma, 1965
- Norman D., 2004. *Emotional Design*, Apogeo, Milano
- Penati, A., *Il design vive di oggetti-discorso*, Mimesis, Milano 2013
- Pinardi, D., *Narrare. Dall'Odisea al mondo Ikea*, Pagina Uno, Vedano al Lambro (MI), 2010
- Pizzocaro, S., *Narrare le cose*, in Antonella Penati, *Il design vive di oggetti-discorso*, Mimesis, Milano 2013

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Socco, C., "Lo spazio come paesaggio", Versus. Quaderni di studi semiotici, n° 73/74, gennaio-agosto, Bompiani, Milano 1996

Starace, G., *Gli oggetti e la vita*, Donzelli Editore, Roma 2013

Turkle S., 2007. *Evocative Objects: Things we think with*. MIT Press, Cambridge

Vacca, F., *Design sul filo della tradizione tradizione*, Pitagora editrice, Bologna 2013