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Representation is a Visual Language

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Representation is a Visual Language

ABSTRACT

It is a well-stablished opinion that representation can be meant as a potentially universal language, because it goes expressed through visual references, common background. This is true for to the whole spectrum of visual expression: photography, mixed techniques or drawing, computerized information; this is valid for all applicative fields, realistic drawing, technical drawing, relief, editorial and advertising graphics. Different representations, depending on the aims and different languages to express them; this means that the expressions of communication through images are transmitted by different ways, are based on different prerequisites and use different tools and methods. It does not only refer to drawing or relief or graphics, but also to the whole vast world of representation; not only traditional techniques, but the whole field of image redaction. The research about representation as visual language is conducted according to different trends: on the one hand, the investigation about the concept of awareness, participation and responsibility in the drafting of a visual message, while, on the other, the recognition of the components of the message itself.

Keywords: representation, language, communication, perception, drawing.

Introduction

First reflection: in the contemporary world it is evident that it is necessary to find a communication system that is as general and equivocal as possible, that "guides" the user in the space (for example, within a city or a welfare structure) and allows to make optimal use of the surrounding complex structured reality.

Second reflection: the current society, through continuous exchanges and relationships, leads to have a multiplicity of nucleos, which must cohabit and express themselves in such a way as to allow a relation, even expressive-linguistic.

Third reflection: today we are surrounded by iconic pseudo-languages, which should allow an immediate understanding of the message represented, but which, on the contrary, arouse uncertainties and misunderstandings.

And it is precisely starting from observing the reality that surrounds us, that the need for a study on the most effective iconic language was evident, since often we can find a pseudo visual language so defined because it requires, for the correct interpretation, the support of the word. So what is the image for?

The search for signs that express concepts and reality without the intervention of the word has, therefore, become the object of research for the formulation of specific iconic languages. The first step concerns the study of the brand or a "sign" that connotes a reality; but first we need to define a system of signs and relationships between text and image that contribute to making an image "readable".

Methodology

The main concept that we want to express here is therefore that of a reversal of the traditional perspective that has always considered - at least normally and with a non-expert public - the value of the text as a narrative and that of the image as representations of possible visions (of the concrete, of the imagined, of the impossible).

This logic means that the image is interpreted as an extreme synthesis of a story, which is always possible to reconstruct, if the image is designed and built in adherence and has no margins for different interpretations; on the contrary, the text is analyzed and appreciated for its image value.

In this sense, many contemporary writers have resumed a tradition that for centuries has proposed drawings, signs and graphic textual realizations (just think of the illuminated manuscripts and their initial decorated letters) and have inserted within their texts phrases or letters that mimic meanings visual or refer to concepts; the picture becomes more complicated, therefore, and adds potential to the visual language, which, according to a well-established opinion, sees in the representation a potentially universal language, expressed through visual references, of common interpretation.

This applies to the entire spectrum of visual expression: photography, mixed techniques or drawing, computerized information; and it is valid for all fields of

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application, from realistic design, to technical drawing, surveying, editorial and advertising graphics.

Different representations, depending on the purposes and the different languages to express them; this means that expressions of communication through images are transmitted differently, are based on different prerequisites and use different tools and methods.

We are not referring here, only to drawing or surveys or graphics, but also to the whole vast world of representation; not only to traditional techniques, but to the entire field of image editing.

The research on representation as a visual language takes place according to different trends: on the one hand the investigation on the concept of awareness, participation and responsibility in the drafting of a visual message, on the other the recognition of the components of the message itself.

Representation as Visual Communication

Representation is visual communication, potentially universal, to be used in the signals indicator panels and prescriptions. Big warning will be made in order that people looking at the sign, can understand and interprets it in the correct way.

Even common and apparently banal signs such as those deriving from the highway code, lend themselves to possible misinterpretations; what needs to be done is a textual reading of the image, which functions as a verification of correctness: in the example shown in Figure1 the sign indicates three people, on an elevator, with the sign of the overlapping prohibition. Literally: 3 people cannot go in the elevator. Here iconic images (people) are combined with symbols (the ban and arrows). Who did not know the code, could not understand, as happens for those who had not studied the code of the road.

Figure 1. *Literally: 3 People Cannot Go to the Elevator. Here Iconic Images (People) are combined with Symbols (the Prohibition and the Arrows). Those who did not know the Code could not understand (for Example, those who did not Study the Street Code).*

Source: Falcidieno, M. L., 2006. Paola - Disegno – Segno.

In the following images, next to the image appears a writing that says not to take the elevator in case of fire ... but the image does not speak of fire, only

forbidding to take the elevator in three! The simple addition of the flames would immediately make the cartel clear and unequivocal.

On the side, this text appears, saying that taking the elevator in case of fire is forbidden ... but the image does not speak of fire, just forbidding to take the elevator in three!

The mere addition of flames would immediately make the sign clear and unambiguous.

Figures 2 and 3. *On the Side, this Text Appears, Saying that Taking the Elevator in Case of Fire is forbidden but the Image does not Speak of Fire, just Forbidding to Take the Elevator in Three! The Mere Addition of Flames would Immediately Make the Sign Clear and Unambiguous*

Source: Falcidieno, M.L., 2006. Paola - Disegno – Segno.

Another example to understand the importance of making visual communications that takes into account fruitor's understanding is the image sent to space with the Pioneer 10 probe, which wanted to tell potential "alien" who we are and where we are. Hence, a man and a woman are drawn (in a realistic way) and the "spatial" references of earth and probe (in symbols). But for hypothetical other beings, who did not have our appearance, what is realistic would become incomprehensible and instead what is symbolic clear if it possesses our same technical scientific knowledge.

**Figure 4.** *Image Sent to Space with the Pioneer 10*
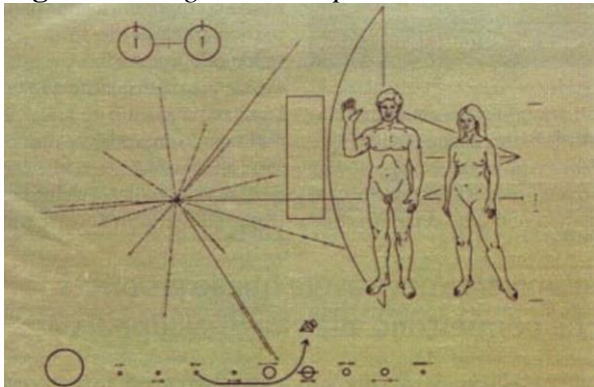
Source: Falcidieno, M.L., 2006. Paola - Disegno – Segno.

Interesting are then the experiments of communications made respectively without text and without image: in this case we refer to what was said at the beginning: the illustration is read as text and, on the contrary, the text becomes an image: exemplary the elaboration taken from the volume Little Prince, who proposes an ambiguous and at the same time imaginative design (with the famous

interpretation of the shape of a hat that is not a hat, but a snake that has eaten an elephant...) and the tail of the little mouse drawn by the progress of the letters , from Alice's adventures, beyond the mirror

If we look at the history of writing, we see how the communicative expression is not only initiated by the representation and therefore by a visual approach, but also by the signs of the systematization of the language; these signs have become increasingly distant from the visual reference, until they become abstract and codified elements, such as the letters of the alphabet. From that point, who does not know the code, does not understand the language.

Figures 5 and 6. *Communications without Text and without Image: in the First Case the Illustration should be Read as Text and in the Second the Text Becomes an Image*
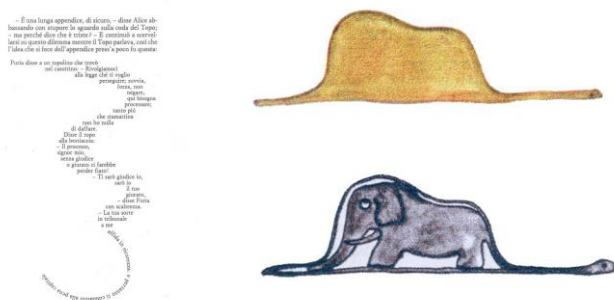

Source: The Little Prince (not a hat, but a snake who ate an elephant...) and from Alice's adventures, beyond the mirror.

Even today, however, the setting up of a system of images with a textual value gives rise to "codified" and, therefore, partly symbolic languages, in a completely analogous way to what happens for languages based on ideograms; here we mention the case of Bliss's graphic language, which tried to devise a universal language, today used in the rehabilitation and rehabilitation of particular disabilities, but many languages with the same function support understanding in the presence of certain deficits: the language signs and Braille are vehicles for communication in the absence of hearing and speech and are widely disseminated and recognized by international communities.

The image as a story, therefore, as happens in the instructions for use and in the use of objects, where the only graphic signs guide and allow their correct use; in this sense, the applications are multiple and diversified, to such an extent that they cannot be grouped under a few types. Perhaps, the differentiation can be made in relation to the purpose and in the examples in the figure we chose to mention a banal indication of correct loading of the salt in the dishwasher, as it directly compares the text with its correct visual translation and interactive City of Children in Genoa, where the operation is entrusted only to images and not to text with the consequent possibility of a "virtual" tutor always active, even in the absence of personnel.

Figures 7 and 8. *The Image as a Story (Instructions for Use and Interactive Site at Città dei Bambini in Genoa)*
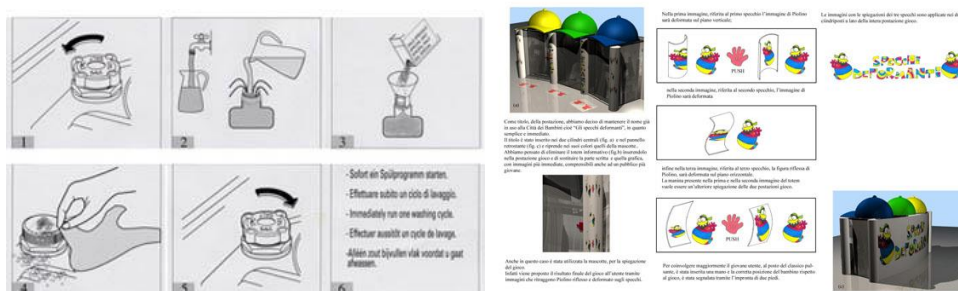
Source: Falcidieno, M.L., 2006. Paola - Disegno – Segno.

The Components of Visual Language

At this point, it is necessary to enter into merit and try to define the components of the visual language, which are basically three: word, image, graphic sign, all critically read according to their visual value.

Visual language components are fundamentally 3: word, image, graphic sign, all with vision values, also the text

The WORD: depending on the typeface used or the composition of the text, you can already have information about the content of the publication, as well as the target audience and the publishing scope; another important area for the visual interpretation of the word is that of the logo/brand, understood as an acronym, abbreviation, extended name and in this sense, even the logos "tell" contents, areas and stories.

The IMAGES: they can be drawings, photographic elaborations, digitals; in any case, these are visual representations and in this sense an important area of project intervention is given by icons and pictograms, which characterize signs, signs, maps.

A separate discussion deserves the discussion of the accessory GRAPHIC SIGN, as less intuitive and more linked to the activities of experts working in the graphics sector: the accessory graphic sign suggests and guides the reading and understanding of the works, as happens with balloons, kinetic lines and onomatopoeia in the comic book composes iconic signs with symbols, as in the road signs form pictograms. Perhaps the clearest example is that given by the position that the page number assumes within the layout of a publication: it is precisely its being in the same place that allows the reader to immediately orientate himself and not create disturbance, as it would instead if every time you were to look for it. Thus, the accessory graphic sign, here, is not the number, but its location in the space-page.

Figure 9. *The Logos "Tell" Content, Areas and Stories*

Source: Falcidieno, M. L., 2006. Paola - Disegno – Segno

From the Graphic Sign to the Word through Drawing: The Case of the Brand

Since visual communication is based on representation, it is useful to analyse the fundamental components of communication through the drawing itself.

Sign, image and word are composed and integrated to give rise to a visual message. It is, however, rather complex to draw a precise boundary between the three fundamental components of the visual language: the images, in fact, are composed of signs but also the typographic characters are drawn and therefore composed of a set of signs. Even a sign can sometimes be traced back to a very simple and schematic drawing.

A significant example is represented by the Brand. A logotype (composed exclusively of a typographical font, i.e. the word) immediately assumes the value of ´imagine`, to the point that the visualization of the image prevails over the reading of the word. You can also change some letters of that logo, but if you keep the same visual image, the brand still remains recognizable.

If we write the word "Nike" using any typeface, the association with the Nike brand of the famous sportswear multinational would not be unambiguous. If, instead, we write, for example, the word "Niki", using the institutional font adopted by the company and now recognizable, although the word in question is different, it would be immediate to associate that term with the famous multinational.

This is a strength for companies, but at the same time it can become a point in favor of smaller competitors who, while adopting different names, use fonts, images and colors that, instinctively, are associated with more renowned and famous brands. Of course, the issue is very complex and involves the legal aspects related to copyright of the brands themselves for their protection.

Figure 10. *Niki as Nike: a Logo Type (Consisting of a Typographic Font) Immediately Assumes the "Image" Value, so that the Image Value Prevails on the Reading of the Word*

Continuing to analyze the brands, it can happen that the word does not assume the value of image, but it is the image itself that deforms according to the needs of the written word.

Figure 11. *Sometimes the Word does not assume the Value of the Image, but the Same Image Deforms itself according to the Needs of the Written Word (Brand of an Italian Car, Fiat Grande Punto)*

This happens, for example, in the brand of an Italian car presented in 2005, the "Grande Punto". In it, the stylized image of a driving man replaces the initial letter "P" of the word Point. The head of the man is represented by a "point" that, evidently, takes up in visual terms the concept expressed by the name of the car. In this case the image becomes a letter of the typographical character and it is interesting to hypothesize the probable evolution that the image has undergone to become a word.

Similarly, some brands stylize the shape of the textual component to such an extent that it can be considered as signs without a figurative value.

This happens, for example in the logo "Toyota", generated by three ellipses tangents. Following the instructions of the company's image manual, the focuses of the main ellipse represent the products and the customer respectively, while the two smaller ellipses (perpendicular to each other) identify Toyota's letter "T". This reading is not immediate and the T loses its traditional form.

Following what Luigi Varzi (an expert in the web sector) suggests, other readings can also be developed: for example, if the form generated by the two

internal ellipses is broken down in different ways, all the letters that make up the name "Toyota" can be identified separately.

Figure 12. *All the Brands Integrate the Textual Part with the Graphic one. Sometimes it seems that Signs and Words play in a Secret Manner*
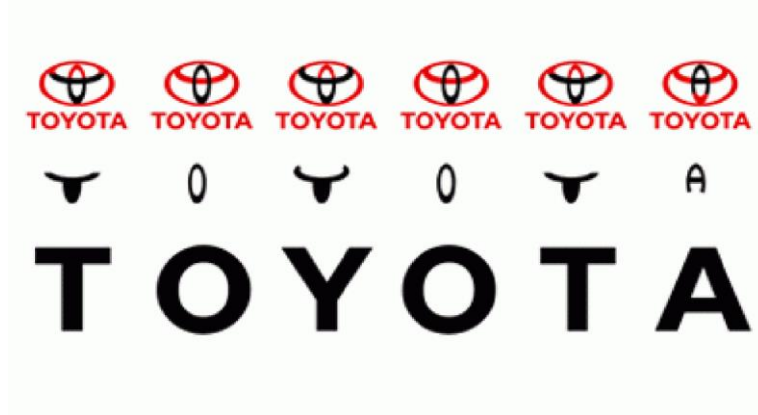
Source: www.viraltribalmarketing.wordpress.com.

The "LG" logo also offers interesting food for thought. According to the company's official expression, the monogram indicates the slogan "Life's Good" through the capital letters L and G placed inside a circle. The logo symbolizes the world, the future, youth, humanity, technology and, at the same time, defines the stylized image of a human face.

If we investigate the geometry of the composition, interesting cues can emerge on the relationship between image and word: supposing to proceed backwards, the signs that represent the two stylized letters - the "L" and the "G" - can compose up to generate the shape of the famous protagonist of the Namco videogame, Pac-Man.

The current 'Mazda' logo also combines in a non-figurative drawing both the schematic representation of the letter 'M' and a schematic display of the wings expressing the concept of flight.

Figure 13. *In the LG Logo the Signs and Words could play in a Fun Way*

From Analogue to Digital Representation: The Effects of "Manipulation" of Images

With the advent of new technologies and the advent of digital drawing, it has been possible to treat all the components of communication that is signs, images and words, in the same way, through mathematical codes.

Digital drawing tools can modify both images and text, resulting in results that unfortunately alter the very nature of individual components. The practice of freely "manipulating" signs, images and texts to adapt them to specific formal requirements is increasingly widespread.

This possibility allows to quickly solve problems related to the composition and adaptation of figures and texts to the dimensions of different supports, but risks compromising the quality of the work itself and, above all, risks altering the design principles that generated them.

The alteration of the proportions of an image (through, for example, the deformation of a dimension) can be very useful in case specific results are to be obtained, but it should always be carried out with total awareness. Otherwise, there is a risk of providing wrong and misleading information.

In the specific case of images, the simple deformation of only one of the two dimensions generates a different image (more flattened or more enlarged) and compromises the geometry of the entire structure. For example, a square with a horizontal base appears as a rectangle developed in height or in width, depending on how the image is deformed. If the square were slightly inclined, then, the idea of orthogonality would also be lost, as not only the width and/or height, but also the angles formed by the sides would be deformed.

From this consideration we can deduce that the manipulation of images, even if minimal, is even more evident (and annoying in perceptive terms) the more it is applied to images and forms with easily recognizable geometries (square, circumference, rectangles with known proportions, etc.).

Similarly, the graphic manipulation of the text also alters the geometries that characterize the font itself. Each font is the result of complex graphic and design operations that start from geometric considerations and arrive up to perceptive evaluations. Each letter of a font is studied by the designer in every single stroke with the aim of making the form balanced in every part. The thickness of the horizontal rods, the thickness of the vertical rods, the ratio between the width of the letter and the thickness of the rod, the ratio between the width and the height of the letter itself, the width of the descending and ascending rods, the inclination of the italic variant, etc., derive from meticulous and careful evaluations that led to the creation of that precise font.

It is evident how the freedom to manipulate a font, intervening, for example, on the thickness of the rods, on the alteration of the main proportions, or other, involves the negation of these compositional principles and, therefore, the negation of the design choices that generated the font itself.

This is to draw attention to an unfortunately recurring attitude that arises from the improper use that is sometimes made of digital media and related software: it is necessary, in fact, to acquire a certain sensitivity to understand to what extent the manipulation of images and texts is feasible without denying the nature of the images or the fonts themselves.

Figure 14. *With the Advent of Digital Technologies, SIGNS, IMAGES and WORDS are treated in the Same Way through Mathematical Codes. In this Context, Digital Drawing Tools can modify both Images and Texts, with Results that Unfortunately Alter the very Nature of Individual Components*

The Role of Digital Technologies in Representation

The question then arises of the role to be played by new digital technologies in the field of representation.

If on the one hand the new design software allows a mathematical control of the single lines and the single graphic elements, on the other hand there is the risk that the conscience and awareness that has always characterized the designer is lost. In addition to this, there is the risk of losing the autograph character of the drawing itself, since in digital drawing the tool risks prevailing over the personality of the author, initiating a process of "standardization" of the images and, even more worryingly, of the projects.

This is not always true, but often the instrument takes precedence over the author's expression, with the consequent risk of standardizing the graphic language. The risk is to use digital drawing tools (modelling software in the field of architectural design and design and vector drawing software in the field of graphics) from the very first design approach. In this case the representation - and the project itself - is no longer an expression of the designer's personality, but the consequence of a parametric application carried out by the machine.

Since the authorship of drawing - and consequently of the work designed through drawing - must be preserved to ensure that each work is truly the expression of its author, it is necessary not to lose the free hand drawing, especially in the first steps of project. In fact, the immediacy of the designer's gesture ensures that the idea is quickly displayed even before it is filtered and influenced by the digital tool.

Drawing a freehand line means freely drawing a sign according to what the thought suggests at that moment. It means, that is, to visualize the idea quickly, leaving the field free for interpretation. Using a software for drawing means, instead, to put quantitative parameters before the gesture itself, with the consequence of excessively limiting the potential of the idea that is being born.

Figures 15 and 16. *Drawing a Freehand Line Means Drawing a Sign according to what the Thought Suggests at that Moment. It Means Visualizing the Idea Quickly, Leaving Room for Interpretation*
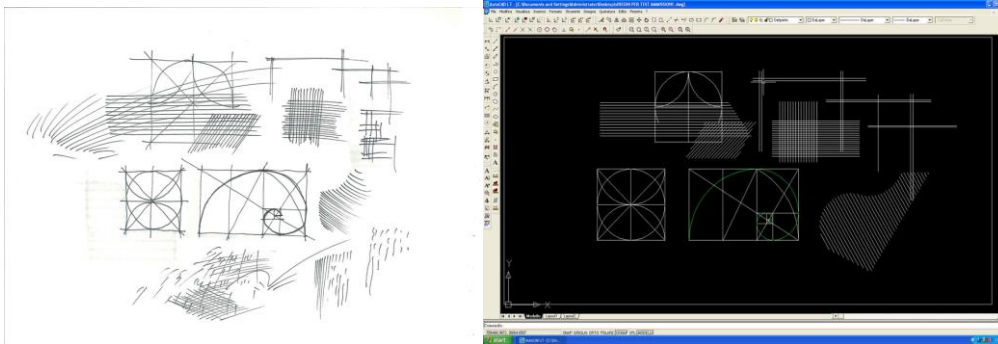
Using a software for drawing means, instead, to put quantitative parameters (inevitably still not identifiable) before the gesture itself... with the risk of excessively limiting the potential of the idea that is being born.

Naturally, the potential deriving from the use of digital means is enormous and allows the development and verification of forms and compositions that a few years ago were unthinkable. Or rather, they were conceivable, but they were not proposable because of the difficulties of management and development in the implementation phase.

In this sense, it can be said that the advent of digital tools for drawing has led to new paths not only for representation, but also for project, coming to experiment with new forms for architecture.

Figure 17. *The Advent of Digital Tools for Drawing has Allowed us to Develop New Paths not Only for Representation, but also for Design*

Source: Author's Elaboration (F. O. Gehry, Bilbao Museum and Le Corbusier, Ville Savoy).

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The current tools of design (first and foremost modelling software) are having a decisive influence on contemporary design trends and define an architectural language that is the exclusive consequence of the potentialities of digital tools themselves.

In recent years, in the architectural field, there has been talk of "parametric design" and this term is associated mainly with the use of advanced digital technologies in complex projects.

In reality, the concept of "parametric" would imply the whole of the relations that exist between the various "parameters" during the ideation-project process, but its applications in architecture, to date, are still poorly defined. For parametric architecture, in fact, we tend to define mainly that kind of architecture developed through the use of software that allow the creation of very complex forms.

It is thanks to the use of processes of elaboration applied to the design of buildings that take shape the deconstructivist architectures of Frank O. Gehry and many of the works of the major architects of the last decade, whose projects are generated by a system based on "parameters" and "relations".

Although digital tools have become the basis for the representation of architecture and for its conception and design, the traditional analogue approach to drawing continues to play a key role. Just as the complex surfaces designed by Gehry, before being developed by sophisticated modeling programs, are visualized through quick pen sketches and simple impromptu maquettes, so the first approach to each project must continue to be of the analog type through traditional drawing.

In any case, both in the autograph drawing and in the digital elaboration, it is necessary to make the most of the potentialities offered by the tools used (from the pencils and watercolours to the software for modelling or for augmented reality) without losing the recognition of the individual contribution as an expression of the author's personality.

Since representation is a visual communication, potentially universal, it is necessary that, although responding to universally accepted codes, it is always possible to trace the character of the author. This is possible only if we maintain the personal sensitivity that the designer has always had and that, sometimes, risks cancelling out in the face of the prevalence of automatisms and techniques.

The digital age provides us with valuable tools that have modified and expanded the codes of communication and representation, but the expressive power of the author (and therefore his personality) must always be traceable in every elaborate graphic.

Figure 18. *The Digital Era Provides us with Precious Tools that have Changed and Expanded the Codes of Communication and Representation, but the Expressive Power of the Author (and Therefore his Personality) must always be Traceable in Every Graph*

Source: Author's Elaboration (F.O.Gehry's sketch, over picture of Bilbao Museum).

Conclusions

Representation is at the base of a language, the visual one, that could be universal, that is decodable in every part of the terrestrial globe. As long as the representation is used to represent the existing or anyway figurative elements, it can be considered universal, but when through the use of graphic signs concepts, sounds or thoughts are expressed it is necessary that there is a code to be able to translate them.

Egyptian hieroglyphics represent human figures, animals, objects; sometimes they express concepts and are also associated with sounds, but until the "Rosetta's Stele" was found it was not possible to decipher them, because we were not aware of that code.

Each figurative element has the potential to be universally recognized and, for this reason, it is able to communicate exactly what it represents. It can be objects, animals, actions and it can also describe entire narratives (as it happens in the editing instructions, in the comic strip and, in general, in the storyboard). When realistic representation (or at least representation that can easily be traced back to real images) is associated with the word, knowledge of the code is required for its translation.

First of all, you need to know that particular idiom and, of course, the typographical characters, through which, it is transposed graphically. It loses its universal character and becomes a written text no longer accessible to everyone (not accessible to those who do not know that language, nor to those who are not literate or to children who are still in pre-school age).

The representation has, then, an enormous potential that in the contemporary era has been further increased by the use of digital means and the diffusion of new media, but it is necessary that it is used in a conscious way in relation to what is intended to be communicated.

References

AA. VV. Verso l'era post-digitale. Disegnare il progetto, tra design e architettura – Giornata di studio [Towards the post-digital era. Designing the project, between design and architecture - Study day], 23 Novembre 2012. Politecnico di Milano, UdRD Design Representation, Dipartimento Indaco, Facoltà del Design. Milano, Maggiolli editore, 2013. ISBN: 978 88 387 6192 2.

Baculo, A., (a cura di). 2000. *Architettura e informatica* [Architecture and information technology]. Electa, Napoli.

Bistagnino, E. 2010. *Disegno-Design. Introduzione alla cultura della rappresentazione* [Design-Design. Introduction to the culture of representation]. Franco Angeli, Milano.

Diller+Scofidio, Pongratz, C., Perbellini, M. R. 2000. *Nati con il computer. Giovani architetti americani.* [Born with the computer. Young American architects]. Testo&immagine, Torino.

Falcidieno, M. L. 2006. *Parola - Disegno – Segno.Comunicare per immagini. Segno, significato, metodo* [Word - Drawing - Sign. Communicate by images. Sign, meaning, method]. Alinea, Firenze.

Falcidieno, M. L. 2007. *Il ruolo del Disegno nella Comunicazione* [The role of Drawing in Communication]. Alinea, Firenze.

Falcidieno, M. L. 2009. *Comunicazione, rappresentazione* [Communication, representation]. Alinea, Firenze.

Malagugini, M. 2018. *L'architettura e la sua immagine. Il disegno fra indagine e progetto* [Architecture and its image. The drawing between survey and project]. Genova University press, Genova.