Sign Systems for touristic information: From sign to the system

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ABSTRACT
The highest affluence of people to certain places such as airports, commercial areas, events, public services, tourism installations, etc., led to the need to guide these persons in unknown places and to communicate basic messages with a language understandable by everyone. This mobility brought road development associated with a growing flux of people that have to move from one side to another for different reasons. That movement has developed the need to learn new rules, which ones will be formalized through signs that make the access or the circulation to certain places easier.

This project addresses Touristic Information and aims to give a contribution to a more legible, understandable, inclusive and ergonomic approach in the research area, through the validation of the existing signage, mainly at Iberian Peninsula level, the design of new methodologies applied to the conception of symbols and to conceive a valuable tool for the conception of specific sign systems for tourism information.

Keywords: Sign Systems, Pictograms, Ergonomics, Touristic information, Wayfinding

1. INTRODUCTION
Signage is constituted by a multiplicity of signs that require a deep and systematic study in which, because of the quantity and diversity of symbols, their characteristics aren’t always understood, sometimes causing disrespect and transference for signage. Vertical signage is constituted by several signs, classified in different categories according to their characteristics, meaning that they are constituted by signs or panels of signage transmitting a visual message, thanks to their localization, their form, color and type, and also through symbols and alphanumeric characters (Diário da República, 1998). Regardless of the spoken or written language, the need for a universal visual communication language is underlined as fundamental. Symbols’ usage to represent touristic attractions is a decisive step in that direction.

The level of demand in information transmission through pictograms compels to conceive concise signs, simple, rapidly understandable; to achieve this we have to search for elementary graphic structures, to be easily perceived. Generally, conceptual models (having in mind the conception of pictograms) must present information in a simple and clear way, limiting possible ambiguities.

It happens that signage systems developed for information (in the tourism area or in traffic), are often empirically conceived and, most of the times, disrespecting the rules already contemplated by law, originating multiple, incoherent and illegible systems, thus making difficult their decoding.

For the present research project a concrete problem was identified: the sign systems for tourism information in Europe, and in the entire world, are totally different from one another, having no graphic relationship, being incoherent from the graphic point of view; there isn’t a normalized system.
Strategically, there is a concrete answer in the communication design, to obtain research methodologies applied to the conception of symbols for tourism information. So, design harnesses innovation and differentiation, creating concrete answers to an identified problem. Design projects different objects or means of communication for human use, being a discipline or activity that is intimately related with the conception, planning and production of signage equipment.

The main aim of this research is to contribute for the reflection and knowledge in the signage design area (as a discipline of the communication design), trying to conceive a valuable tool for the conception of specific sign systems for tourism information, designing uniform sign systems which may help to evolve not only designers but multidisciplinary teams, communicating clear and unequivocal messages for the user.

2. USER, MOBILITY AND TERRITORY

The development of the railway networks, the advent of the automobile industry and the growth of the aerial fluxes, allied to a growing world scaled globalization, brought a greater individual social mobility coming from different regions and continents. Commerce, industry, leisure and other activities caused the abolition of borders, whether they are physical, linguistic or even cultural, in order to make the circulation of people and goods easier.

“Social mobility assumes the fluxes of individual groups, from different geographical proveniences and different socio-cultural characteristics, moving from one point to another based on very distinguished reasons. This social dynamic implicates the circumstantial basics, which means that the passage through determined places is sporadic as a result of a naturally itinerant activity. Therefore, it generates new situations, morphological and organizational unawareness of these places, and consequentially, it presumes a high level of intelligibility or indetermination, which raises dilemmas in the individuals' actuation necessities and even risks" (Costa, 1989).

Social mobility supposes a displacement from a place to other places in a certain territory. If accessibility is considered the access conditions destined to mobile handicapped and special educational needed people, on the other side, accessibility is understood as the easiness in accessing or displacing between two points. Although both notions of accessibility are related, especially in the way reduced mobility or special educational needs are a conditioning aspect in accessing or displacing in a pre-determined space, it is considered in the present study that accessibility in the access or displacement on a territory may or may not be known or pre-determined.

The greater affluence of people to such places as airports, commercial areas, events, public services, etc., has defused the necessity of giving those people an orientation in an unknown place and to communicate basic messages through an understandable language. On another hand, that mobility brought along traffic developments associated to a growing flux of individuals that displace themselves from a point to another. That displacement often performed in unknown spaces, defused the need to learn new rules, which become normalized through signs that facilitate the access/circulation to/in determined places.

Signage and signaletics are constituted by multiple signs which require a profound and systematic study of a code in which, by the quantity not always are their characteristics apprehended, sometimes causing disrespect and alienation regarding the delivered message. Signage and signaletics are constituted by multiple levels, categorized in different categories regarding their characteristics, constituted by signs or panels which transmit a visual message, thanks to their location, shape, color, type and even through symbols and characters.
3. TOURISTIC INFORMATION AND SIGNS

The need for universal communication, regardless of language, is preserved as a fundamental principle of the Manila Declaration on World Tourism. The use of symbols to represent tourist attractions is a decisive step in that direction.

It happens that signage systems developed for information, are often empirically conceived and, most of the times, disrespecting the rules already contemplated by law, originating multiple, incoherent and illegible systems, thus making difficult their decoding.

The proliferation of information signs in Portugal is very clear and illustrated by the use of 293 symbols for tourist information applied to signal tourism resources and 112 symbols used on indicating signs applied to road signs (traffic), making a total of 405 information symbols, lacking of course this area of standardization and normalization.

Even the Tourism Institute of Portugal recognizes the need for critical reflection coming from the various areas of knowledge and also the role of design (or research design) as a key factor in identifying solutions for tourist signs.

For the present research project a concrete problem was identified: the sign systems for tourism information in Portugal, Europe and in the entire world, are totally different from one another, having no graphic relationship, being incoherent from the graphic point of view: there isn't a normalized system.

Strategically, there is a concrete answer in the communication design, to obtain research methodologies applied to the conception of symbols for tourism information. So, design harnesses innovation and differentiation, creating concrete answers to an identified problem. Design projects different objects or means of communication for human use, being a discipline or activity that is intimately related with the conception, planning and production of signage equipment.

The sign is composed by its physical form and a mental concept associated with it, and this concept is, actually, an apprehension of external reality. The sign only relates to reality through concepts and people who use it.

In relation to the study of signs and taking into account the two main streams ('semiology' starred by the linguist Ferdinand de Saussure and the 'semiotics' of the philosopher C.S. Peirce), to this study the development evidences the three major areas of study covered in semiotics:

1. The sign itself. It is the study of different varieties of signs, the different ways in which these convey meaning, and the ways they relate to the people who use them.
2. Codes or systems in which signs are organized in. This study covers shapes developed by a variety of codes to meet the needs of a society or culture, or to explore the communication channels available for their transmission.
3. The culture within which these codes and signs are organized and, in turn, depends on the use of these codes and signs in relation to their existence and shape. It appears crucial for this research, which aims to obtain a detailed study of sign systems for tourist information, a careful analysis of all aspects related with the three areas mentioned above: Sign and its meaning; The system or how the signs are organized; Culture or users to whom the signs are made for, and at this level the ergonomics is very important, in terms of achieving a total social inclusion.

4. SIGN SYSTEMS

A system can be seen as a set of interrelated, interacting or independent elements forming, or considered to form, a collective entity (Heskett, 2005). The purpose of a system is to provide clear information on the consequences of choosing a route or a particular direction, but letting users decide exactly where to go.

In design areas, the collective quality manifests itself in several ways. Different elements can combine in functionally as in transport systems. A system requires principles, rules and procedures to ensure a smooth and orderly interaction in the interrelationship of ideas with shapes. This means having systematic thought qualities which infer in the methodical, logical and determined procedures.

Each signal offers very specific information, coded in a way that may be simultaneously linked with all the others. The growing importance of systems design, in contrast with the design focused on shapes, can be attributed to a globalization that affects the collective activity. Being the signal a physical object, with a self-image and to which was assigned a meaning, then we are before a sign.

![Image of pedestrian crossing signs](image.png)

**Figure 2** – The physical object, the sign, significant and signified

Each one of us, in various situations, have encountered difficulties in accessing certain physical space, either by the ineffective signaletics, or by its improper use or even due to the illegibility of the graphism. Signaletics contribute effectively in the orientation of people and goods in a given territory. It is a discipline of the visual communication science who studies the functional relationships between signs of orientation in space and behavior of individuals (Costa, 1989). At the same time, it is the technique that organizes and regulates these relationships.

Each signal contributes to form the system, which means, signals have characteristics that differentiate them, forming the whole system which, nevertheless, requires the seizure of its own signification rules. The signal is an artifact with different meanings and unique features which makes it, different from the others and at the same time, related to the system.

Design as a project activity that involves creativity, proposes the adaptation of means to ends. Design projects create various media for human use, therefore being a subject or activity that is closely related to the conception, planning and production of equipment such as traffic signs. The graphism of signs, as the preferred means of information transmission needs other disciplines to contribute to the attainment of its objectives: to convey clear and unequivocal messages to the user, contributing to the improvement of accessibilities.

Sign systems for tourist information have developed slowly, looking to solve specific problems in each moment and relying mostly on international agreements and protocols. Despite the impossibility to adopt a universal unified sign system, there were moments
where the ratified protocols were without a doubt an important impetus for example in the standardization of traffic signaling.

The advent of the car became a lever that triggered the evolution of sign systems, creating greater social mobility and generating the apprehension of new rules through signs of orientation in space, which communicate and transmit information constituting a sign system - signaletics. The increased traffic movement has brought along the problem of the international regulation of signals, which began to be examined at European level since 1908. The global standardization of traffic signs was attempted in a United Nations conference in 1968, achieving only a partial match of the European and North American systems.

Traffic signaling systems (which include several times signs for tourist information) are not uniformed worldwide, existing different systems of signs which, by their distribution, lead us to consider now two fundamental systems with different shapes, colors and graphics. One of them is the European system, based on pictograms and ratified by several countries through the 1949 'Geneva Convention', implemented in most European countries, much of Africa (according to colonizing countries) and almost the whole of Asia. The other is the American system, based primarily on the use of spelling applied to squares or rectangles and based on the "Manual on Uniform Traffic Control Devices for Streets and Highways" of the United States of America, published on 1948. This system is currently used in Anglo-Saxon countries (territories of the Commonwealth) in the American continent, Australia and other countries of Oceania, fundamentally.

![Figure 3 – The European and American traffic signaling systems](image)

Signage consists of several signs, classified into different categories according to their characteristics, which means that, it is constituted by signals or panels that convey a visual message, thanks to its location, its shape, its color and its type and still through symbols. Signals are composed by several elements that contribute to the final appearance of the artifact.

Signage can be defined as a system composed of independent elements (which transmit certain information or an obligation to act) that are interrelated with the function of communicating messages. Therefore, signage is a system composed by interrelated elements (signs), simultaneously independent (by their classification) forming a collective entity - a sign system. Each artifact unit (sign) contributes to form a whole (the system), which means, the signals (objects built by man) are not individually designed, but having in mind the collective entity that unites them. The sign (the unit that belongs to a whole) is therefore a physical object with different meanings and unique characteristics which
makes it different from the others, and at the same time related to the system. Being the signal a physical object, with a self-image and to which was assigned a meaning, then we are before a sign.

Iconicity includes several degrees of analogy and fidelity to the model, varying from hyperrealism to schematics or extreme abstraction. For signage as for signaletics, the maximum iconicity corresponds to pictograms (representing objects and people), and the minimum iconicity to what it is called "ideograms or non-figurative symbols" (Costa, 1989). To convey messages, sign systems use pictograms, which are not more than simplified figurative signs that represent forms and objects in the environment. Pictographic system is a term introduced in this paper to define elements of an inter-related system, making use of figurative signs which represent things and objects of the environment (pictograms). Pictographic system is then a set of descriptive signaletic elements that interrelate to form a whole, involving the use of pictograms.

5. SIMPLIFIED FIGURATIVE SIGNS: PICTOGRAms

Pictograms are requested to transmit critical information to large numbers of people from a different language, having in common social and cultural traits, and to who are not supplied any teachings to decode these messages. This type of images (pictograms) are a good support in the orientation in public or private spaces and services. Although pictograms appear to be absolutely self-explanatory and universal, in fact, they possess cultural limitations. Joan Costa (1998) defines pictogram as a figurative simplified sign representing things and objects in the environment. The term pictogram absorbs other variants of the iconic sign: ideogram and badge, despite their fundamental differences, because if the pictogram is an analogical image, the ideogram is an outline of an idea, a concept or a non-visual phenomenon and the emblem a highly institutionalized conventional figure. Pictogram was the generalized noun to refer to all of them.

A pictogram represents an object in a simplified way, which may be more or less iconic (more or less the same as the real model), but what matters most of all is that it is visible to the largest possible number of users. It also required a comprehensive understanding of the system to develop, and then conceive pictograms individually, consistently and contributing to the overall uniformity.

Any image that contributes to form a pictogram tends to take on the characteristics and convey the sense of the total category of objects belonging to the object in question (Massironi, 1983). This means that an image to be represented by a pictogram tends to regulate the design of other pictograms that are contained in the same category. The requirements for an information transmission through pictograms undertakes to create concise, simple, quick to understand signs; to achieve this, one has to look for elementary graphic structures, to do justice to a certain type of perception (Aicher, 1995). In general, the conceptual model (taking into account the design of pictograms) should present information in a more simple, clear and unambiguous as possible (Mijksenaar, 2001).
6. CONTRIBUTION AND PRELIMINARY RESEARCH CONCLUSIONS

The current research aims to develop the contribution to knowledge in the area of design, specifically in signaletics (as a discipline of communication design), trying to be a valuable tool for designing specific sign systems for information. The proposal and aim for this research project is to design uniformed sign systems that involve not only the designer but also multi-disciplinary teams that communicate clear and unambiguous message to the user.

This study contributes to a broader understanding of sign systems and the interrelationship of its components. The research will also demonstrate the importance of other disciplines and studies for the development of signaletics as a system of information transmission and pictographics as a sign system that conveys messages, among which ergonomics and inclusive design.

Design, as an eminently creative activity, requires the design of artifacts that respond to expressed needs in a projectual logic with the purpose of an industrial production, taking into account social, cultural, economic and environmental aspects. In this sense, design enhances innovation and differentiation, creating added value. Design works on several levels, such as industrial design, equipment design, graphic design, among others, contributing decisively to the improvement of the signage system, looking for new solutions in terms of safety, shape, graphism and materials used.

From the deep study of several sign systems and their constituents, the conclusion is that much of the legislation or manuals that regulate the production of signs is sufficient for its proper performance, noting however that such rules and standards are not always respected by the entities in the process, from conception to placement in space.

Signaletic systems developed for information (whether in tourism or traffic) are often designed empirically, disregarding the majority of the rules contemplated by law, resulting in multiple inconsistent, illegible systems, making it difficult to decode.

Even though there are definite rules for sorting and organization of systems, ignoring the hierarchies and imposed rules is abundant, causing a detachment from the imposed rule, embarrassing users and sometimes causing danger. Also, it was verified that signs' dimensions is not always respected, even if significant improvements are experienced.

Regarding the use of colour, the legislation is largely followed and well applied. However, that legislation is yet to be standardized, because in the classification of signs and taking into account the same class of signs, different colours are applied, which implies a memory and understanding effort by the user which could be reduced.

The evolution of printing in signs denotes a quantum leap in terms of readability, although it is notoriously difficult to follow the legislation by those who design signs, not respecting sizes, the font in use, spacing, etc. The arrows used on signage and plaques are very different, which could and should be standardized in order to simplify their shape and improve their usefulness, verifying that in determined signage, reading and comprehension is deficient.

The applied pictograms lack of uniform criteria, both in terms of shape and colour, because not all pictograms are easily perceptible. The iconic level used in the design of pictograms is very uneven, with some being extremely simplified and easily perceptible and other requiring a higher level of decoding by the user, caused by the complexity of the sign.
In order to improve sign systems for public or tourist information, it would be important that all the involved agents understand the problem that the system is directly related to the security of society, which is why there should be more governmental action with all entities, regarding levels of awareness, training and even supervision of the same, in order to further the continuous improvement of sign systems in place and those which will be developed from now on.

**REFERENCES**


