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Packaging as a Link to the Environmental Issues. Tools and Languages for the Communication of Sustainability

El packaging como enlace a los asuntos ambientales. Herramientas y lenguajes para la comunicación de la sustentabilidad

Abstract. *Sustainability* is one of the key words which is nowadays highly discussed in the field of packaging. Our contribution is located in the research area that concerns the communicative and informative functions of packaging in relation to the issue of environmental sustainability. The reflection evolves from a perspective that assigns packaging the role of *link*, an entrance that allows access to content and information aimed at making the consumers aware of their purchasing choices. The paper is articulated with the presentation of a case study developed within a European research project, through which we aim to provide a contribution to the disciplinary area from the methodological and practical perspective.
Keywords: Communication Design, Ethical Packaging Charter, PEF Label.

Resumen. *Sostenibilidad* es una de las palabras clave que hoy en día se discute mucho en el campo de los envases. Nuestro aporte se ubica en el área de investigación que concierne a las funciones comunicativas e informativas del envase en relación al tema de la sostenibilidad ambiental. La reflexión se desarrolla desde una perspectiva que asigna al *packaging* el papel de *enlace*, una entrada que permite el acceso a contenidos e información orientada a concienciar al consumidor sobre sus opciones de compra. El trabajo se articula con la presentación de un caso de estudio desarrollado dentro de un proyecto de investigación europeo, a través del cual pretendemos aportar una contribución al área disciplinar desde la perspectiva metodológica y práctica.
Palabras clave: Carta ética de *packaging*, Diseño de comunicación, etiqueta *PEF*.

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Introduction

The purpose of our contribution is to present the work developed within a research project focusing on the communicative elements conveyed by packaging – concerning the environmental sustainability of the product - that attest its functions as a *medium* (Bucchetti, 2007) and that designate it as a fundamental *link* for the communication system of the product within a media dimension. We believe that this work can offer a theoretical and practical contribution to the studies related to the field of Packaging Design.

The research operates within a disciplinary framework concerning:

- The concept of *Design of access* (Baule, 2001, 2017; Bucchetti & Ciravegna, 2007), the studies that analyze packaging as a threshold place, a key-device which makes concrete the possibility and the right to have access to a content, a barycentre where the essence of a communicative act is focused, but also the passageway that determines its outcome. *Design of access* recalls a dimension closely related to the ethics of communication. Both to the implicit ethics, i.e. functional ethics "connected to the usage model and facility of use, to access and readability, to the usability of individual devices, i.e. the guarantees of efficiency and effectiveness [...] [and] the evasive, not necessarily measurable and immediately verifiable retreat that has to do with the criteria of truthfulness and fairness and, therefore, with the 'what' of communication" (Baule, 2007, p. 57, author's translation).

- *The Ethical Packaging Charter*[1] (Baule & Bucchetti) edited in 2015, a ten-point programmatic document that traces the lines of development of this specific artifact, according to a vision which aims to review its functions and recall the ethical responsibilities of the entire supply chain.

- A perspective that perceives packaging as a device within an articulated communication system of the product. This specific point of view takes into account the *cross-media* and *transmedia* dimension (Montani, 2010) that characterizes contemporary communication systems, with which packaging functions are challenged to give rise to new communication formats.

Dealing with packaging and sustainability from the perspective of Communication Design implies taking into account packaging as a significant object that induces social behaviours in the users by orienting their choices of purchasing and consumption, but it also implies considering its potential function as a *link* to more articulated and in-depth contents. The analysis therefore focuses on the nature of packaging that "beyond its ability to define purchasing and consumption choices and behaviours, [...] is able to spread "other" communicative contents together with those related to the packaging itself or to what it protects, by exploiting its mass-medium potential" (Bucchetti, 2007, author's translation).

The contents and information may include both the qualities of the product and the packaging itself, as well as broader topics such as environmental sustainability and related issues. Topics that in the international context are becoming increasingly urgent and which, as

1. "The project for the Ethical Packaging Charter stems from a hypothesis that [...] has materialised in the encounter between the world of university-based research, trade publishing, sectorial associations representing business concerns; the result is an open document that urges the commitment of all stakeholders involved in the design, the production and the use of packaging" (Baule & Bucchetti, 2015, p.9). The Charter was drawn up in 2015 by Giovanni Baule e Valeria Bucchetti within a research project of the Department of Design, Politecnico di Milano and supported by Istituto Italiano Imballaggio.

2. Goal 12. Ensure sustainable consumption and production patterns; Goal 13. Take urgent action to combat climate change and its impacts. (United Nations, 2015, p. 27-28).

reported in the *United Nations Agenda 2030 for Sustainable Development*[2] (2015), are opportunities to broaden the concept of sustainability to include aspects that affect the quality of life of human beings in its various forms, which *The Ethical Packaging Charter* (Baule & Bucchetti, 2015) also provides.

More specifically, in order to provide a better picture of the working perspective adopted, we will mention some of the terms which constitute the fundamentals of the Charter: *responsible, accessible, transparent,* and *informative*. These are the paradigmatic points at the basis of the research reported here as a case study.

Responsible, accessible, trasparent, informative

Responsible (1st point of the Charter)

Responsible packaging is the bearer of quality, that combines environmental protection with respect for the needs of all users. For the very reason that it affects an entire community, we also talk about the social responsibility of packaging. All of us, to varying degrees and in different ways, are part of as well as feel that we are part of this common responsibility (every action has an impact on the subjects that comprise our society).

"This is reflected in the principle of ethical responsibility that affects the choices made by designers who must place the user and his or her needs and requirements at the centre of their Design work. Designing packaging involves the analysis of its instrumental functions, that are closely related to the communicative ones of medium and interface with the user" (Baule & Bucchetti, 2015, p.16-17).

Accessible (4th point of the Charter)

"Packaging is accessible when it is simple and easy to use, and thus considers the right of any consumer to be able to approach, understand and use a product. Packaging is accessible when it is easy to understand even beyond the user's experience, knowledge or know-how or their level of attention, outside of the set conditions and context. When it guarantees a flexible use, even if the consumer is left or right handed; when it also effectively communicates with physically or mentally impaired users. [...] accessible in all its aspects: due to the graphic design of the wording that guarantees its legibility; because the overall design and the layout ensure that the information is easy to find; accessible because the contents are expressed through a vocabulary that does not raise barriers and that uses a language that is easily comprehensible; accessible because it offers an immediate interaction that enables its use" (Baule & Bucchetti, 2015, p.23).

Transparent (5th point of the Charter)

"Where packaging builds an immediate relationship with its recipient. Packaging is transparent when it is sincere, when it tells the truth in full respect of legal standards and it does so plainly. Via the quality of transparency it manages to build up a relationship of trust with the recipient. Packaging must speak of its contents without any alteration, and communicate directly, immediately, comprehensibly and unequivocally. It should in no way produce a communication that might deceive or appear ambiguous, this even within the principle of error tolerance [...]" (Baule & Bucchetti, 2015, p.25).

Informative (6th point of the Charter)
"Where packaging guarantees the best information, both useful and necessary. Informative packaging respects legal standards, bears all information useful to know about the contents and its packaging, their use and disposal. Packaging becomes our information interface because it allows us to relate with the product. It allows us to gain knowledge on the contents and its container. It informs us on the composition of the product, the origin of the materials, on the methods of preservation, on the nutritional value and on the food chain: from the information for the preparation and administration of the contents to those of an environmental nature, indicating how to dispose of it and attesting to its sustainability. It should inform in a forthright manner, with the awareness that product information is a right and priority of the discerning consumer. The information must be proposed in order to facilitate the perception of its importance, i.e. through a clear organization of the contents and clearly showing the information needed to respect the environment [...]. Similarly, maximum legibility of the essential information must be ensured, to allow the recipient to gain a good knowledge and understanding of the product" (Baule & Bucchetti, 2015, p.27).

Communication design model for packaging system design case study
This is the framework and point of view from which the project was developed, a case study through which we aim to contribute to the disciplinary area from the methodological and practical perspective.

The research project's main objective was to translate and transfer to the recipients the Product Environmental Footprint (PEF) index, the environmental qualities, and the environmental performance obtained, from the above mentioned point of view, that sees packaging as a *medium* considering it transversally as a device, an essential component of the cross-media communication system of the product. The ultimate purpose of the project is to create a virtuous circle; to increase the awareness and the responsability of consumers during their choice of buying and using the product to improve positive behavior (Allard & Dionne, 2017), by assuming the role of packaging as a link, a place that facilitates and guides the access to information.

The work is part of a wider European research project, LIFE The Tough Get Going[3], which involved several disciplinary sectors and aimed at providing a response to European policies concerning sustainability, specifically the application of new methodologies to measure the environmental footprint of the product throughout its life cycle.

The basis consists of the requests from the European Commission "to develop a harmonised method for the calculation of the life cycle environmental performance of products. In 2013 the European Commission adopted the Communication *Building the Single Market for Green Products* (COM/2013/0196 final). The Commission Recommendation 179/2013 (OJ L 124, 4.5.2013, p. 1–210) was also adopted establishing and recommending the use of the PEF and OEF methods to calculate the environmental performance of products (PEF) and organizations (OEF)" (Lupiáñez-

3. The project *LIFE The Tough Get Going* (LIFE TTGG), 2017 - 2021, "arises from the synergy between universities, start-ups, manufacturing companies, Italian and French training, and research organizations, with the aim of improving the production processes efficiency in Europe, reducing environmental impact and thus achieving more sustainable production and consumption" (http://www.lifettgg.eu/en/introduction/).

Villanueva, Tornese, Veltri & Gaskell, 2018, p.13). In this context, as a research group within the Department of Design, Politecnico di Milano, we dealt with the issues concerning the Design of modalities, tools and languages for the B2C communication of PEF.

The first stages of the research project were aimed at documenting and understanding the current state of the art: on one hand the quality and quantity of the signs affixed on food product packaging as index of environmental sustainability, certificates, eco labels; on the other hand, the modalities in which, starting from the packaging, the user is guided to other devices which are part of the product communication system and vehicles for more in-depth content oriented towards raising consumer awareness. This represented a key step in defining the context —in terms of communicative languages— to which we were called for intervention.

The following work was based on some fundamental points defined on the basis of the European policies and the project objectives, which constituted some pillars within which to move, placing the communication for PEF within a wider system of responsibility that concerns all the actors involved along the production chain, right down to the consumer: (a) PEF communication as an opportunity to inform the consumer about the environmental performance of products, with a focus on transparency; (b) an opportunity to provide the consumer with rigorous and reliable information, stimulating a process of loyalty building; (c) PEF communication can be put at the service of broader actions aimed at raising consumers awareness and encouraging them to make re-sponsible purchasing choices. In broader terms, PEF's communication system can serve as a link to broader issues related to environmental sustainability (De Giorgi, 2008).

Packaging as entrance for a cross-media system

The considerations developed around the communicative-informative functions of the packaging constituted a first milestone from which a *cross-media* communication system was articulated in response to the stated objectives. In this phase two of the key points of the above mentioned Charter had a determining value: *accessible* and *transparent*.

Packaging begins to fulfil its communicative function when the product is placed on the supermarket shelf addressing a heterogeneous group of consumers, made up of individuals who are dissimilar not only in terms of age but also in terms of cultural background, education, knowledge, and sensitivity to environmental issues.

Starting from these assumptions, the focus turned to the languages for the PEF, with a *translation Design* approach that involves the reformulation of the contents both on the basis of their scientific density and in relation to the languages used to convey them —from the hypersimplified to the technical-scientific language— where the term *accessible* is understood as accessibility of the contents by all the users.

A communication system able to provide different levels of information was therefore hypothesized, in which the user has the possibility to choose the

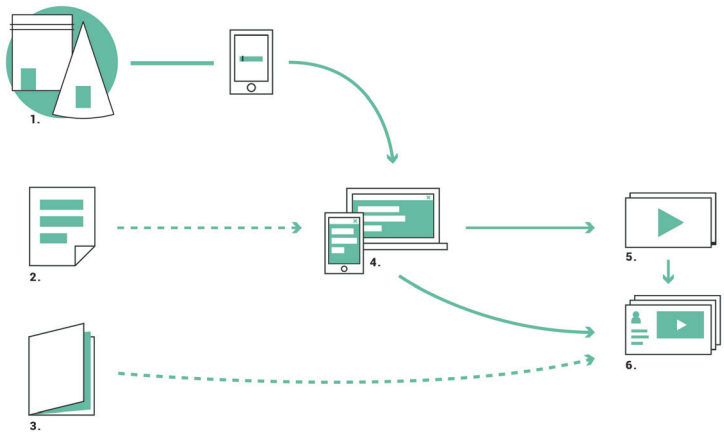

Figure 1 . Structure of the PEF Communication System.
Notes: (1) Packaging as an entry point to the communication system (B2C communication). (2,3) B2B communication tools. The system includes tools for local companies' communication (2) and a PEF report (3). (4,5,6) packaging as a link to more in-depth artifacts: website, information videos, producers' sheets.
Source: authors' elaboration.

content on the basis of his knowledge and skills. The system is articulated in different steps responding to specific purposes, according to a logic of guiding the user from the information available on the packaging –place of entrance– to communication devices denser in content, which offer the opportunity to explore the issues related both to PEF and to environmental sustainability.

The starting point is therefore the packaging of the product as communication device. In this perspective it was necessary to first deal with the wide range of products that could use the PEF methodology and then with the different typologies of packaging on which to place the information related to the PEF index. This, together with a consideration about the needs of flexibility and accessibility of producers and packagers —from multinationals to small/medium enterprises— has led to the identification of a PEF label as a communication tool that can be applied directly on the packaging without having to intervene the package's graphic layout.

The PEF label fulfils the primary function of index: it indicates that the product has been submitted to the environmental footprint measurement and acts as a link to the other communication devices, an entry point for the overall PEF communication system. The system is structured (Figure 1) through a web page that explains the PEF and a series of digital artifacts aimed, on one hand, at informing the user about PEF –what it is, to which products it is applied and with what results– and, on the other hand, at carrying out an awareness function. Individual companies using the calculation methodology will have dedicated fact sheets providing the consumer with the possibility to explore updated PEF indices and parameters, in the form of micro sustainability reports.

Communication languages for the PEF

The development of visual codes for the identification of PEF was a further fundamental step, opening up a reflection focused on transitional models. The objective was to develop a system of signs capable of translating the key concepts underlying the PEF methodology into a visual identity that is effective both applied to the communication system as a whole and to the label device, characterized by the constraint of the reduced format and placed on a packaging already rich with visual elements, and by the visual

Figure 2. Overview of the multiplicity of the sustainability labels collected during the first steps of the research work.
Source: authors' elaboration.

identity of the reference brand and the high density of organized information related to the product. This step of the project was based on two main issues: the first concerns the very nature of packaging as a communicative device, the second refers to the PEF methodology and its peculiarities.

Designing in an environment saturated with information
Recognisability, Reliability, Immediacy

The Design of new visual codes in the field of sustainability has to deal straight away with the environment in which they will be perceived, which is characterised by the density of information and a kind of communication that is often *shouted*. The reflection is articulated in three key points.

A. The organized setting of supermarkets is dominated by a large amount of information and visual codes. The user moves within a space in which "objects are arranged according to a generalized form of offer, in someway natural, and each product is available in the counter in its visible form, as it is, in its packaging [...]" (Bucchetti & Ciravegna, 2007, author's translation). The ways in which the user makes his purchase choices are also driven by a routine that led to the automation of gestures, as well as by a relationship of trust created over time with some products.

B. The packaging itself, as a communicative device, is dense with information concerning the product. Brand logos, quality attributes, images, ingredients, nutritional values, expiry date, information of origin, indications on recycling, eventual sustainability certificates, all organized according to hierarchies that suggest the reading order to the user. In this context, the Design of an additional sign must take into account the aspects concerning its immediacy and the conciseness of the information that will be positioned on a support already loaded with content and visual codes.

C. The third point concerns the amount and recognizability of the visual codes used to denote certificates, sustainability marks, labels, indexes or

merely signs used to suggest qualities relating to the sustainability of the product, as highlighted in Figure 2, which groups some of the sustainability labels collected during the first stages of the research. If we only take into account the sustainability labels which are institutionally recognised, we refer, according to the ecolabelindex.com catalogue, to "approximately 432 labelling schemes available in 246 countries, of which 147 include standards for food/beverage. A survey by the European Commission identified 129 public and private sustainability-related food information schemes available at the EU or national levels. [...] Labels overload and gaps in the understanding of both the general concept of sustainability and of the specific sustainability labels may result in consumer confusion and limit the use of such labels" (Grunert, Hieke & Wills, 2013, p. 177). Consumers also have to face a range of incomplete or unclear and ambiguous information about the reliability of the source. According to a study carried out about sustainability labels "Many EU citizens think that existing product labels are unclear and do not provide enough information. The current policy context is characterized by the lack of provision of consistent, reliable and clear environmental information, despite evident interest by consumers and stakeholders" (Lupiáñez-Villanueva, Tornese, Veltri and Gaskell, 2018, p. 13). It is therefore necessary to work with a specific focus on the key concepts of *clarity, simplicity,* and *transparency.*

The design of visual codes for PEF - *flexibility* and *dynamism*

The second issue which we intend to highlight concerns the peculiarities of PEF and the needs suggested by European policies on one hand, to have a single recognizable and reliable sign; on the other hand suggested by the heterogeneity of the companies potentially involved in the application of the PEF method, needs of flexibility, dynamism and adaptability. The parameters that define the PEF index are in fact periodically updated by the company itself, which enters its own data into the system using a tool —now in the prototyping phase— capable of calculating, through an automated process, the values of the PEF index based on sixteen impact categories.

The communication needs placed as a cornerstone from which to develop the visual identity of PEF can be summarized in some value categories — *environmental responsibility, scientific rigor, reliability of the source*— and unavoidable critieria, identified with *flexibility, variability, adaptability.* These points formed the basis of the translation act which is peculiar to the visual communication project

Translational models for the PEF

Starting from the issues identified as project needs, we focused on the translation models for PEF, working on the translation from scientific/ technical data to immediate and accessible information.

Working on the previously expressed principles of *flexibility* and *adaptability*, three hypotheses of dynamic identity based on a simplification of the sixteen impact categories of the PEF have been developed. From the sixteen categories, four were defined in cooperation with partners of technical expertise –*climate change, water scarcity, land use,* and *energy carrier*– which represented the pre-established variable elements (Hughes, Drunen & Nes, 2012) on the basis of which the dynamic self-generative identities were

Figure 3. Criptographic sign, examples of the sign generated inserting different values.
Source: authors' elaboration.

Figure 4. Phytomorphic Diagram.
Source: authors' elaboration.

developed. The reduction to four categories was driven by the need to produce a synthetic and immediate sign that would not be an obstacle to the user within an environment already saturated with information and that would simplify the information decoding process.

Thinking in terms of dynamic identity allows to enhance the value of the individual producers –each company is thus characterized by a customized PEF sign based on its own index– while maintaining the uniformity and recognizability of the PEF calculation methodology promoted by the European Community. Therefore, three hypotheses were developed that are coherent for purposes but that use communicative languages able to emphasize different elements. The translation act from data to infographics represents the basis of the three concepts.

Criptographic sign

The first scenario emphasizes the concept of packaging as a place of threshold, a link that allows access to the devices that form the overall communication system. The reflection was oriented to the functional visual elements that allow, through the use of everyday devices (e.g. smartphones and tablets), to access more in-depth content. Specifically, the Qrcode tool has been taken into consideration, due to its easily recognizability and usability by any typology of user (it does not require the use of paid apps).

Using the composition of the Qrcode as a basic visual element, an infographic translation operation was carried out, introducing four colours to identify the four variables. In the mechanism of autogeneration of the Qrcode the chromatic components of the sign therefore vary as the four parameters vary. This allows us to optimize a technical-functional element by translating it into infographic for PEF identification.

Phytomorphic diagram

In this case, the focus was on those issues mainly concerning environmental sustainability, recalling the key concepts of lightness and nature. The designed sign consists of four graphic elements whose shape recalls

Figure 5. Evocative abstraction of texture.
Source: authors' elaboration.

phytmorphic elements such as leaves, petals or wings. Each element identifies one of the four variables, which defines its size.

The four elements are characterized by colors that vary from green with a blue component to acid green, where the yellow component prevails, and converge in a common point in a play of transparencies and overlapping that in turn evokes natural elements, leveraging the idea of lightness, sustainability, transparency and, implicitly, responsibility and respect for the environment.

Evocative abstraction of texture

The third approach represents a synthesis between the rigorous and scientific component, that are part of the PEF methodology, and the attention and responsibility towards the environment, evoking the agricultural and rural dimension. The term *texture* is representative of this dichotomy: interpreted in its multiple meanings including, in essence, the concept of texture as "Soil texture classification instrument used to determine soil classes based on their physical texture. Soil texture has agricultural applications such as determining crop suitability and to predict the response of the soil to environmental and management conditions such as drought or calcium (lime) requirements" (common definition from Wikipedia).

Also in this case it was a translation operation that gave rise to an abstract visual composition whose elements, when juxtaposed, evoke a rural dimension typical of cultivated landscapes and of the agricultural production. The rigour of the sign is determined by the visual elements, patterns of straight lines combined, which perceptively define four rectangles, whose height varies with the variation of the four categories –*climate change, water scarcity, land use,* and *energy carrier*. Each variable is identified by the inclination of the lines and by a color, also in this case varying from green/yellow to green/blue.

Each hypothesis is oriented towards a specific axis, giving a different weight to the aspects and needs at the basis of the project. The selection of the proposal to be developed and finalized was entrusted to a panel of experts and project partners, including engineers and agronomists working on the PEF tool project and a group of dairy companies.

PEF label – Communication languages for the PEF

In view of the perspective adopted and the centrality of the packaging, around which the communication system was structured, it was crucial to give space to the definition of the PEF label, work that brings with it the partially anticipated matter of the language in terms of *accessibility* and *immediacy*.

Figure 6. Versions A, B, C of the Label. Source: authors' elaboration.

By language we refer in this case to the verbal forms of expression displayed on the PEF label with an informative function. The translation act is aimed at the transposition of scientific content, which uses a technical language, into synthetic information through the use of immediate languages that are accessible to a large and heterogeneous group of consumers, in accordance with the guidelines of the European Commission: "The challenge for policy is to translate scientific knowledge into public knowledge, to continue to cultivate verbal support for PEFs/OEFs [...].

It is therefore essential that the text messages placed and organised hierarchically on the label medium respond to the following points: (a) immediacy and conciseness of the message; (b) accessibility to groups of consumers who do not have technical knowledge about PEF; (c) credibility of the source; (d) clarity of the message, which should leave no room for ambiguity or misunderstanding.

In order to identify the semantic areas within which to move and define the terminology and languages for the PEF, we developed a participatory activity that become a pillar within the research work. The activity was aimed to lay the linguistic and terminological foundations for the construction of a clear and effective communication, through some exercises that involved the project partners as experts in the field. At the basis of the activities the translation paradigm was placed, in a playful way aimed at *forcing* the participants to rewrite the definition of PEF (e.g. "write it as if it were a title", "write it as if it were a fairy tale", etc.) or explain it orally to people with no knowledge of the sector and with different ages and levels of education. This set the basis for the formulation of the message to be displayed on the label, by identifying the semantic areas within which to act and the problematic issues arising from the use of ambiguous terms that may suggest wrong information to the user —for example the use of the term eco-sustainable in the case of PEF is incorrect because the application of the methodology does not imply that a product has a sufficiently reduced impact on the environment. Similarly, the inclusion of numerical data relating to the categories that constitute the PEF index might not be understood by all and would require too much effort in decoding.

Starting from these assumptions, three versions of label have been defined that differ in the specificity of the verbal forms of expression displayed on them. The acronym PEF has, in any case, a hierarchically primary role, which is followed by the following messages: (a) "Our dedication for a sustainable

Figure 7. Mapping of the most memorized terms. Source: authors' elaboration.

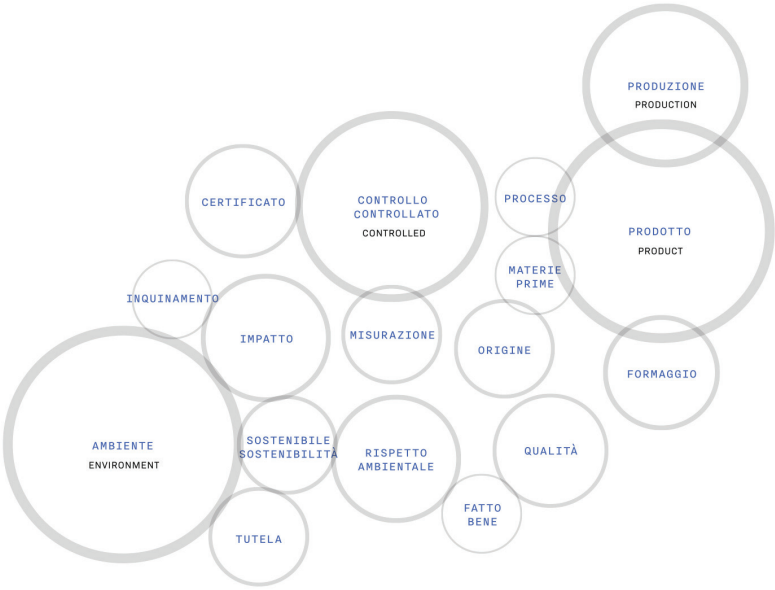

Figure 8. Example of terms analysis and mapping. Source: authors' elaboration.

future. PEF Product Evironmental Footprint"; (b) "100% responsible production chain. PEF Product Evironmental Footprint"; (c) "Submitted to environmental footprint measurment".

A testing activity to collect feedback from users

The three versions of the PEF label were subsequently tested to verify and collect feedback on the visual identity applied, *evocative abstraction of texture*, and on the forms of verbal expression, enabling a comparison of how the three labels are interpreted by users.

Three surveys were therefore drafted, addressed to a heterogeneous group of potential consumers, paying particular attention to the modalities that characterize the act and the place of purchasing by simulating the duration of fruition and the user's level of attention. The labels were shown first for few seconds, followed by a series of open-ended questions aimed at collecting feedback on what was memorized by the participant. In one step, for example, one version of label was shown for about four seconds and then participants were asked to reconstruct the label text (Figure 7), in order to verify its readability and effectiveness of the hierarchical organization, and to identify any *critical* word. Some other questions referred to the consumer's interpretation

of the message, which made it possible to check whether there was a gap between the original communication purposes and the resulting message.

On the methodological front, open-ended questions were given ample space to allow the participant to express his or her thoughts without constraints. The answers were analyzed and the most recurrent terms extrapolated and clustered by semantic areas (Figure 8), in order to identify eventual gaps between the communicative intentions and the user's interpretation.

The surveys involved a group of 229 participants reflecting the heterogeneity of the individuals characteristics[4] of potential consumers. The experimentation led to a confirmation of the communication objectives, bringing attention to the useful tools and methods in the field of Communication Design. Although the results did not reveal any major criticisms, a crucial issue was once again highlighted linked to the confusion caused by the lack of clarity and the overabundance of information related to the sustainability of products. Despite the fact that the three labels were designed to minimize the ambiguity of the message, the results show that at the time of interpretation the consumer tends to mix the concepts of responsibility and sustainability with those related, for example, to organic or biological production, recalling other product qualities which do not imply, and in turn are not implied by, the use of the PEF methodology.

Conclusions

The research project represented an opportunity to pursue a reflection already started and systematized by the *The Ethical Packaging Charter* (Baule & Bucchetti, 2015), shifting the axis to the communicative functions of the packaging through a perspective that identifies it as a place of entrance that allows access to more in-depth content, aimed at raising consumer awareness of environmental issues and of the criteria of personal purchasing decisions.

On a theoretical level, our contribution set itself in continuity with the research area that attributes to packaging the role of a communication device within the complex system of product communication, vertically focusing on the specific aspect that concerns the methodologies to assess the product's environmental sustainability. From this point of view, the communicative function of packaging emerges as an input to address issues whose urgency is reaffirmed by the *United Nations 2030 Agenda for Sustainable Development*, stimulating a debate around visual but also verbal communicative languages.

The work represents a response to European policies that highlight the need to reduce and standardize the visual languages identifying sustainability marks, certificates, guarantees, etc. that increasingly crowd the packaging of food and non-food products, creating entropy and encouraging incorrect interpretative models. At a practical level the work is a specific case that can take on a paradigmatic dimension, assuming that "in an ideal world citizens and business would be presented with reliable and harmonized product environmental performance labels from trusted sources; have the competence to understand the communication vehicles and have the incentives and available alternatives to convert good intentions to changes in behaviour" (Grunert, Hieke & Wills, 2013).

4. Participants are equally distributed between fifteen and 75 years of age, and have educational qualifications ranging from middle school to PhD. Only five of 229 participants said they already knew PEF before taking the survey.

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