DIVERSITY: DESIGN / HUMANITIES

PROCEEDINGS OF FOURTH INTERNATIONAL FORUM OF DESIGN AS A PROCESS

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4th INTERNATIONAL FORUM OF DESIGN AS A PROCESS

SCIENTIFIC THEMATIC MEETING OF THE LATIN NETWORK
FOR THE DEVELOPMENT OF DESIGN PROCESSES

Humanities Design Lab
Politecnico di Milano
Dipartimento Indaco

bienal brasileira de design

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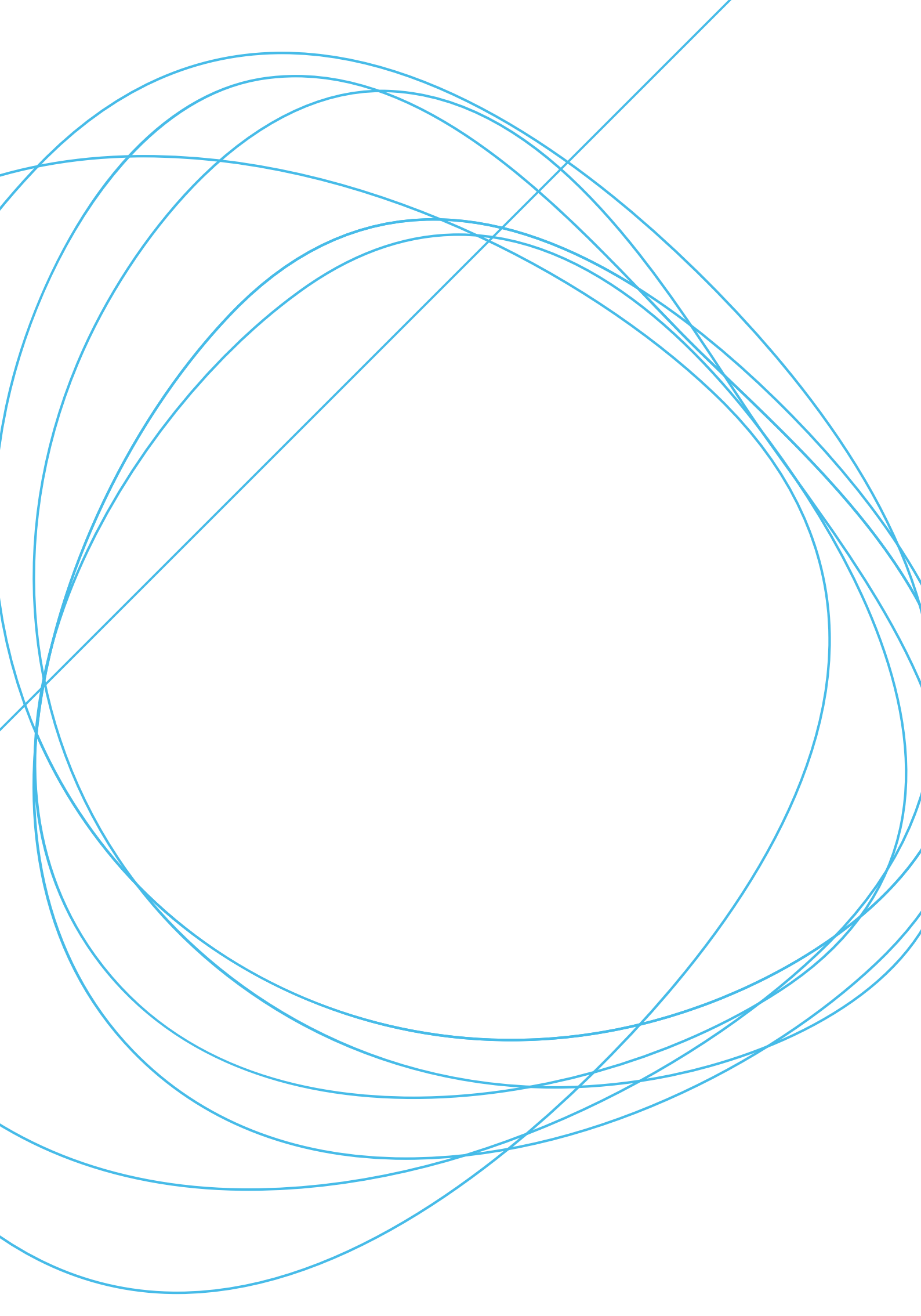

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PRESENTATION

DIVERSITY AS A CONSISTENTLY PROBLEMATIC AREA

The Scientific Community of Latin Network for the Development of Design Processes investigates systematically the theme of DIVERSITY in design from the on-going comparison between the mainstream tendency of Anglo-Saxon imprint and the "other traditions". The specific feature of this Community, and of its annual meeting, lies in placing design as a process, rather than as a product, at the centre of the debate.

The interplay between the demand for a common language and the insight to give importance to the many characteristic signals of the various traditions of design comes across another interplay between a few key words which dominate the international debate about the discipline and the need to focus on arising elements of the research, seen as having significant potential for innovation.

This is the general problematic area within, in 2012, the Latin Network intends to propose a reflection on DESIGN and HUMANITIES, integrating this beneficial relationship in the system of knowledge and opportunities known as the "THIRD KNOWLEDGE", working as a bridge between the exact sciences and traditional humanistic knowledge.

DESIGN AND HUMANITIES AT THE CENTER OF THE DEBATE

The fourth edition of the FORUM intends to focus on the "cultural" level of the design processes, identifying in the specific relationship between DESIGN and HUMANITIES (i.e. art, anthropology, aesthetics, neuroscience, semiotics, sociology, history, cognitive and perceptive psychology) a promising hypothesis to be explored as an innovative dimension of the processes themselves, in terms of the project's contents and of their cognitive and operational tools and devices. Humanities and social sciences, in the crossed relationship they have with design and diversity, may be understood as:

- drivers and enablers of original design processes, created in the confluence between different disciplines in terms of didactics, research and the project itself;;
- bearers of approaches, cognitive models and analytical tools within project themes with strong social and cultural contents (the so-called "Social Sciences and Humanities centered challenges": education, intercultural dialogue, social innovation, certainty, type, identity...).

OPEN QUESTIONS

The interplay between these three key words becomes the territory for our debate, which will take place at the Universidade do Estado de Minas Gerais (UEMG), in Brazil, within the programme of the 4th Bienal Brasileira de Design. For the event, given the thematic affinity, the Latin Network will

also be assisted by the scientific contribution of the Humanities Design Lab (Politecnico di Milano, INDACO Department). The FORUM intends to focus on some key issues of the debate:

- What is the epistemological framework within which the relationship between design and humanities proves to be a current problematic area and a field of opportunities?
- Through which variations can the concept of diversity be interpreted in the relationship between design and humanities?
- Is there a multiplicity, in the specific relationship between design and humanities, that uses the processes of globalization, rather than opposing itself to them, and that may be diversified in a beneficial way?
- What are the research fields and the knowledge and research models about human complexity which design may connect with?
- What aspects of the design process may become the object of research in various fields of humanities and social sciences?
- Through which experiences have design and humanities shown the ability to collaborate effectively producing significant results?
- What is the state of the art of the theoretical debate? through which promotion, research and diffusion frameworks (journals, associations, laboratories, etc.) is it being addressed? ■

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CHAPTER 12

The evaluation of contemporary design:

Systemic observations and consequences

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Abstract
The growing diffusion of design procedures based on competition between designers, increasing use of bureaucratic forms of assignment of contracts for design through public competitions, the development of systems and processes facilitating the professional encounter between supply of and demand for design, show the backwardness of the debate on the problems of quantitative and qualitative evaluation of design, both in terms of methodologies and methods. This contribution intends to examine the subject of *evaluation*, opening some reflection and operating lines on the creation of potential f he first part of the article, using a multidisciplinary approach[3], frames the topic "evaluation of design" from a theoretical, historical-critical point of view and bearing in mind the evolutionary dynamics in the design field. The second part contains a field study, which analyzes and compares the evaluation processes adopted in international design awards and competitions. This work has two aims: to highlight the approaches and the most interesting elements in the evaluation of design, and to demonstrate the scarce presence of shared processes that systematize knowledge of methods and tools that measure and compare the qualitative aspects of design and the designer. The third section formulates specific reflections on some aspects related to the evaluation of design: the attention focused by the evaluators on the designer, the traceability of the design process intentionally practiced, the explication of the factors that identify the designer and the quality of the designs, the use of evaluation as an opportunity for learning, and lastly, evaluation as a specific competence.

Keywords
design; process; evaluation; assessment;

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3 In particular, means to guide the debate with respect to the contribution that humanistic disciplines, including economy and therefore the estimate, can offer in the advancement of knowledge and the development of more efficient practices of design evaluation.

The *production of design projects* and s*cientific research on design* represent a growing sector with strategic relevance in major post-industrial economies. The development of this sector has generated the need to consider design as a commodity or service (or rather, a *product-service system*) buyable and salable, tradable, measurable, and therefore subject to evaluation. When design is part of an advanced circuit of economic exchanges, it requires standards and tools that allow a proper evaluation of its performance, its role and its impact. This does not always occur, or not yet, despite the fact that contemporary design is "hungry" for thoughts and study of evaluation processes for many reasons relating to the economic situation:

- *The pervasiveness of design:* design "populates" a growing number of fields and sectors. With the evolution from *product design* to *product-service system design* (then to the design of experience) the nature of the expected outputs from design processes is becoming increasingly complex and diverse. Today design practices apply to public services, territories, and systems of goods and services that are far from easy to classify.
- *The bureaucratization of design*: the purchase of design services by the public administration is becoming more and more frequent, also increasing the use of tools and processes to select the contractor for the project and evaluate actions and results;
- *The competitiveness of design*: competitiveness requires design quality and, more and more frequently, ordering institutions consider the use of competitions (calls for design) to identify and select the most innovative designs, using bases of relations and contacts that are much broader than merely traditional ad *personam* contract.
- *The democratization of design*. The development of practices and design tools based on *crowdsourcing* and *open sourcing*, transforms design into an open and collective process. The global production of goods and services increases the physical distance between designers and clients by changing the way in which designs and designers are evaluated (evaluation becomes indirect and impersonal).

These general trends are accompanied by more specific ones concerning the relationship between design and evaluation:

1. *The type of "design" activities and projects that are subject to evaluation increases*. From the industrial to the public service sector, in academic (scientific training), professional and business fields, today an increasing variety and quantity of theoretical and applied research projects, educational activities, design projects participating in public or private competitions, prizes and awards, and (periodically) a wide range of activities and scientific design products[4] (such as books, articles in magazines, conference proceedings and recently also manufactured goods, patents and spin-off projects developed by academic research) are evaluated.
2. *Decrease of the differences between the processes and design projects developed in academic, professional and productive fields*. The increase of the interaction and collaboration between universities, public services, designers and productive world tends to hybridize programs and design projects, even if substantial differences and lack of homogeneity in the evaluation processes and tools adopted still remain (each individual tends to adopt his own

4 In Europe it has been recorded in the last five years the increase of credit lines for specific design researches (programs on eco design, design management, product-service system design).

to achieve his goal without developing common ones).

3. Growth of the influence of technology in evaluation activities. The need to evaluate a growing number of projects characterized by a high level of complexity and global dynamics (e.g. services) requires comparison with the technological variable. Many evaluation processes also become more fluid, continuous in time and inclusive, opening up to the participation of new individual actors or communities. The development of digital technology increases the potential for interaction between evaluators and the subjects evaluated, providing the ability to handle more data and information and making the processes adopted more transparent and traceable.

4. The evaluation of design is not the specific subject of study in design training programs. There are no specific university courses that aim to provide designers with the necessary skills to make them independent and capable in the use of evaluation tools and processes of design, either from a personal or professional point of view.

Design and evaluation. A first theoretical framework

Over the past two decades, the issue of evaluation has become increasingly important for academics, government organizations and enterprises, so much so as to lead to the birth of entirely dedicated scientific magazines[5] . By analyzing the presence of design in a multi-disciplinary magazine such as *Evaluation Journal*[6] , many articles about *evaluation design* (where evaluation is subject to design) emerge, but none talking about *design evaluation* (where design is subject to evaluation). Therefore many disciplines deal in a structured manner with the evaluation of design, but not design. There are no explicit and significant traces of scientific initiatives generated by the *designers of evaluation.*

The situation is different for design evaluation, especially when design is intended as a specific part of the more complex and vast phenomenon of the "project". Here the scientific debate is more historicized, both in and around the discipline. The problem of evaluation has already been mentioned in the models studied in the 60s (Alexander, Susani, Gregory, etc.), describing it as an action that took place both during and at the end of the project (*in itinere, ex post*), following the assessment of the quantitative achievement of prefigured results, mentioned ahead of the project (amount of time used, resources used, results achievable with the use of the project, etc.).

Herbert Simon in his book *The Sciences of the Artificial* (1969) has addressed the issue of evaluation within his theory based on the concept of "design as a science", whereas it is essential the development of strict evaluation methods.

Evaluation brings knowledge and practices from other disciplines, usually with an economic footprint, to design. There is a disciplinary practice known as "economic evaluation of projects" that tends to consider a project as a set of activities, starting from a volume of resources involved and a given time, that transforms and manipulates the production factors for the achievement of a prefigured result.

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5 Politics, economics and public administration, psychology, sociology and anthropology, education, health and law, information science and information, technology, education, science and technology policy, criminal justice, healthcare and social services, vocational training, regional development.

6 http://www.uk.sagepub.com/journals/Journal200757

Later, according to the definition borrowed from the management disciplines, which studied the processes of "project scientification" in the 90s (De Maio, 1997), the project was considered as dividable into the following stages:

- Observation of the reality of the phenomenon within which to design;
- Implementation of a simplified model of the observed reality;
- Manipulation and visualization of the potential effects of the project on the simplified model;
- Evaluation of the potentially achievable outcome;
- Decision whether to proceed with the transformation of the modified model into reality through the development of the project.

More recently (during the 90s) in the debate on "design as science" in IT systems, March and Smith shifted the issue of evaluation from the simple measurement of the performance of a product to the evaluation of the research process that generated it[7] . Also on this topic, Hevner, working in the early '00s on the development of a methodology for design research in the field of IT systems, stated "... The importance of using strict evaluation methods for the design. Specifically, "The utility, quality, and efficacy of a design artifact must be rigorously demonstrated via well-executed evaluation methods" (Hevner, et al. 2004, p. 85).

Finally, a research path not yet fully developed concerns the relationship between the design and the methods and approaches to evaluation. Evaluation is a common activity, "popular" in different areas of design but often supported by *tacit* knowledge, then codified and confined to bureaucratic or bureaucratising practices that are limited to an instrumental development. The growing importance attributed to the evaluation of design is not matched by the structured trace of a scientific comparison on *design evaluation and assessment* that studies the use of methods and approaches to evaluation, that confronts with *universalistic* positions (superiority attributed to the quantitative factors) or *contingent* (superiority attributed to qualitative and situational factors) or debating about the role of evaluation within the *design organizations.*

Hypothesis: the evaluation of the process and of those involved in the designing as a possibility

In particular, in *engineering design* and *graphic design* there are consolidated decades of experience in the evaluation of project outputs. These are branches of design that, more than others, had industry as an organized client and the maturation of the most organized companies in dealing in a systematic and contractually liable way with the satisfaction of the needs of the client, and they have developed interlocutors both in technical and administrative offices capable of dealing with the issue of evaluation of the project in advance, during and, especially, after.

However, we can say that these practices have gradually consolidated around an evaluative judgment concerning the product of design through the clarification of certain contractual stages that, at various levels of precision and definition of the project, allow the parties to discuss and assess the state of progress of the project through an evaluation of: concept, final project, prototype,

7 S.T. March, G.F. Smith (1995) "Design and natural science research on information technology", Decision Support Systems, Vol. 15

alpha version and beta version. The ability of interlocutors (designer and client) to give importance to the brief and the re-brief as particularly useful initial moments of confrontation has also matured considerably. Yet little attention is paid to systemic evaluation in the field of design, in particular in the definition of the characteristics or the skills of the designers (prequalification) and the characteristics of the design driven innovation process. The ultimate goal of this evaluation is to check and ensure that the design will achieve a result in accordance with the needs of the client, with the possibility of making comparative evaluations of different design solutions.

Substantially there are no ratings for designers, let alone shared systems for the description of the design processes in order to help the customer to choose the best options to achieve a desired result.

In this research, we try to explore some areas where the experience in terms of evaluation of the process is more mature and interesting and which can be the references that we could take to start an area of interest and international comparison around the processes for evaluating the design of processes through a systemic practice.

An "in the field" study. The evaluation of design awards and competitions

Design awards and competitions are historically based on the identification and selection of projects enhancing the quality of design and researching - in a pragmatic way – innovative/original ideas on specific topics. There is a substantial difference between design prizes/awards and competitions: awards[8] are generally set up by public bodies or institutions to identify, select and award goods and services that bear witness to the designing and manufacturing skills of a nation, while competitions are organized by companies, associations or institutions, with the specific aim of selecting a design to produce or to obtain a "capital design" (ideas and concepts) in order to generate product, service or system innovation.

Many *design competitions*, in order to perform their task, have developed different evaluation procedures over time to meet specific needs. In this regard, seven of them have been analyzed[9] with the dual aim of identifying the elements that support the hypothesis of the paper and bringing out diverging elements on which to ponder.

8 The Compasso d'Oro ADI, the oldest design award, was established in 1954

9 The survey method used for the mapping of awards and competitions is the desk analysis. For each of the analyzed contest it has been prepared a summary sheet that contains information about the organizers (type), the topic and categories, objectives, and more specifically the evaluation information (jury, participation restrictions, participation procedures, mechanism for project selection and evaluation criteria used).

The chosen awards[10] are:

- Premio Compasso d'Oro ADI (Italy)
- Observeur du Design Award (France)
- Premios Nacionaes de Diseño (Spain)
- INDEX Awards (Denmark)

The chosen competitions[11] are:

- Red Dot Award (Germany - International)
- Edma – European Design Management Awards (European Union)
- Lunetiers du Jura Competition (France - International)

Design Prizes

	Premio Compasso d'Oro ADI	observeurdesign	premios NACIONALES de diseño	INDEX: DESIGN TO IMPROVE LIFE
Organizers	*ADI - Association for Industrial Design*	*Agency for the Promotion of Industrial Creation* *National Agency for the Promotion of Research* *Agency for Environment and Energy Management* *National Institute for Industrial Property* *Ile De France Region* *Ministry of Culture and Communication* *French Ministry of Economy, Finance, and Industry*	*Spanish Ministry of Science and Innovation* *BCD - Barcelona Centro de Diseño*	*HRH The Crown Prince of Denmark* *INDEX non-profit organization*
Selection process	*1st Selection Phase (annual)* Made by Permanent Design Observatory *Final Selection Phase (three-year)* Made by the jury	*Final Selection Phase (annual)* Made by the jury	*Final Selection Phase (annual)* Made by the jury	*1st Selection Phase (annual)* Made by the jury *Final Selection Phase (annual)* Made by the jury
Documentation	*1st Selection Phase (annual)* Technical reports made by designers *Final Selection Phase (three-year)* ADI Design Index Phisical objects	Technical reports made by designers (online submission)	Technical reports made by designers (online submission)	*1st Selection Phase (annual)* Technical reports made by designers (online submission) *Final Selection Phase (annual)* Dossier Prototype/Phisical object
Criteria	Product performance, innovativeness of design, enviromental impact, use of technology,	Innovativeness, functionality, cost reduction, environmental protection, anticipation of emerging needs, easy accessibility, and formal research	Quality of the project, design process, and design management	Quality of the project, and improved life for humans
Jury	*(International)* - design experts	*(International)* - design professionals - design experts - members of public institutions	*(International)* - design experts - communication professional - expert in financial management - expert in economics	*(International)* - design experts - not experts in design

Fig. 1
Analyzed design prizes

10 www.adi-design.org/homepage.html; http://www.apci.asso.fr/?cat=7; www.españaescultura.es/es/premios/premio_nacional_de_diseno.html; www.designtoimprovelife.dk/index.php?option=com_content&view=article&id=31&Itemid=9. A full text (in Italian and English) which describes these design prizes is published online at www.flavianocelaschi.net

11 en.red-dot.org/; www.designmanagementeurope.com/site/index.php?page=13; www.design-jura.com/. A full text (in Italian and English) which describes these design awards is published online at www.flavianocelaschi.net

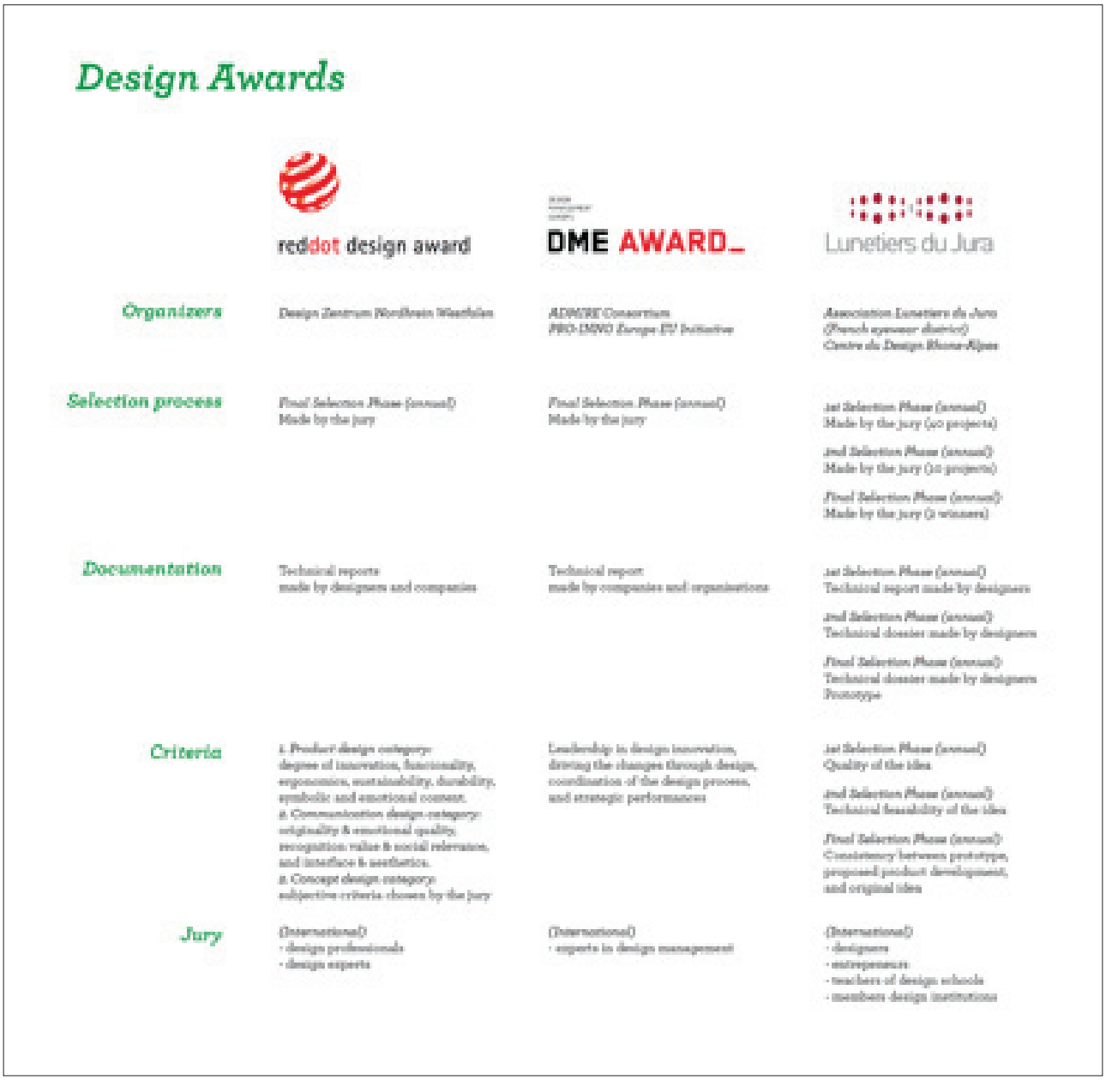

Fig. 2
Analyzed design awards

The analysis (Fig.1 and Fig.2) showed the following elements that define the evaluation of design:

- The design process can be evaluated (see INDEX award), even if the subjects most involved in the evaluation of the design process are often possessors of other skills (see the subjects involved in management as in the case of the DME Award) or the ministries of science, technology and innovation (see national awards in Spain and France);
- The process of evaluation pursued by designers tends to adopt subjective criteria (see Compasso d'Oro and Red Dot Award); on the other hand, the evaluation made by other entities tends to adopt objective criteria (see DME, INDEX, and Lunetiers du Jura awards);
- The process of evaluation of design is a *situational* activity. It can be *organized* collectively

and distributed on the territory between the different subjects involved in the same sector and having different skills (see ADI Design INDEX procedure for the Compasso d'Oro);

- The evaluation of design can be a procedural activity that is pursued through experimentation and testing in order to demonstrate the quality of the project and process (see the selection process of Lunetiers du Jura);
- The evaluation of design is not multidisciplinary, as it does not think about the adoption or combination of its own models and evaluation systems with those coming from different traditions such as those related to the evaluation of technology, auditing, economic investigations into added value or studies on the evaluation of quality.
- The evaluation and selection of projects doesn't have its own recognized standards yet, but helps to define quality standards in the field of design for an entire industry or a national production system (see Red Dot Award).

Uniqueness and identity as tools for the evaluation of the design process

Design is a process through which an author (designer) is able to determine a solution that is different from what might be proposed by anyone else because it includes a substantial conditioning tied to the identity of the person who designed it (Celaschi, 2012). I call this factor "creativity" and I can reduce it, describing it as the gift that the designer brings to the project. The share of identity of the author, which remains intertwined with the proposed solution.

In design, the identity of the designer as a sole author does not only exist. This identity must communicate and intertwine with the identity of the client and his brand, with the identity of the material used, with the identity of the area that will produce the goods, with the identity of the country in which this process starts, etc. (Celaschi, 2010). A key feature of design is that it is frequently necessary to temper multiple identities, entrusting this intertwining the ability to save a distinctive quality (the main component of the design, as it was called by Achille Castiglioni in his lectures on design at the Politecnico di Milano in the 80s); and it's a responsibility of the designer to make a synthesis between these various identities, in addition to his own, to determine a unified and exemplary result, also suited to the demands and appropriate to the general constraints of sustainability and ethics that each designer has to tackle.

The identity of the designer is made explicit by certain tools in advance of obtaining the product:

- The curricular description of the designer that shows the projects he has already worked on, the extent of the works allocated, the nature of the brief resolved, the names of clients for whom he has worked, the continuity and productivity that he is capable of expressing, the multiskill or individual nature of his design team, the training he has received;
- The description of the process he intends to adopt in order to develop the matter in hand;
- The description of the design as if it was a product; therefore both the process and the documentsthat characterize the exchange of the same with the client, through the intermediate results of the various stages of the process and the description of the documents accompanying the final description of the obtained product;
- Time and costs necessary for obtaining the result.

As a result of the following statements we are aware of opening the debate to the criticism of those who consider "artistically" inexplicable the act of design as a personal creative process and unsuitable to be made explicit through measurable characters or descriptors. However, we believe that the solution to entrust to the two major descriptors reported (the curricular description of the author and his experiences, and the procedural traceability of the project) is best to summarize the potential qualities of the project using a language perfectly understandable even by non-professionals or users not involved in the scientific debate about the project, such as the addressee end user of the project whose participation in the evaluation must be preserved.

Moreover, in the world of art the curricular description of the author as well as interesting expressions through which the artist translates his creative thinking in a repeatable and transparent process has long been in use at international level, even making this description part of the artistic goal he wants to achieve.

Traceability as an evaluation tool

"Design is an organized process where the designer starts from a given condition and reaches a desired one" (Schön, 1969). In the evaluation process of a design a lot of attention is usually paid to the result - the product of the design - but often the design process and the professional history that generated it are not adequately considered. Given that the two aspects are inseparable, a failure in the balancing of the evaluation of both can have negative consequences not only on the choice of the project but also on its subsequent implementation.

Speaking of *traceability* within the evaluation of a design process means reconstructing the relationships between actions and documents produced by the designer during the different stages of development of the design, including the elements or the possibility of its implementation.

The traceability of the design process is critical for the selection of the design of a product or service because it allows the understanding and evaluation of the *supply chain* of the idea that generated it[12]. Knowing the supply chain of an idea is important for *controlling* the origin of the design and its subsequent transformation into a product, ensuring the validity of the idea and protecting the design from potential interventions that may alter values and aesthetic, functional and performance qualities.

The concept of *traceability of the design process* is closely linked to the *documentation of the design process* and therefore to the use of tools of narration and appropriate languages. Knowing the history of the design, or rather its DNA, it is useful to understand the logic that moved the designer, the problems that have arisen, the solutions he excluded or those he developed. The opportunity given to or required of the designer to rebuild the relations between the elements of the project with the specifications given in the initial brief, also to highlight possible errors in construction of the brief itself, is also important.

The aim of the design documentation is to "make known what has been done to be able to do" (Bisogno, 1995). *Documenting the validity* of a design process is not just a technical activity that

12 Supply chain of the idea means the system of activities, techniques, technologies, resources and organization that contributed to the definition of an idea, to the creation of a concept and then the development of one or more design solutions.

accompanies a project to its evaluation, but is an action that generates *design knowledge* (on the design process). This knowledge, properly coded, could allow a company or organization not only to evaluate the project in a more effective way, but also to obtain those elements of knowledge useful to correctly interpret and implement the project, also gaining an understanding of the subsequent potential and the development trajectories.

An open approach to evaluation, which contrasts with some logics of secrecy on processes in the field of industrial design, can be borrowed from the world of software design, where traceability is a qualitative aspect of a project, vital to evaluate the impact and changes generated in real life, and where the documentation of the process, often taken care of by the designer of the system himself, can be entrusted to new specialized professionals, the *documenters*.

Evaluation as design skills

Starting from considering evaluation as an activity that accompanies and acts on the design process and as "ability to prove that something is working or needed, or *improving* practice or a project" (Rogers and Smith, 2006) there are some aspects that can be borrowed from the theories of education and learning (Thomas and Seely Brown, 2011).

The first concerns the distinction between the *design evaluation* and that of *design practice*[13] (cited Roger and Smith, 2006). In the evaluation of the design we are dealing with formulating judgments on the effectiveness, efficiency and sustainability of the design and its various parts. Evaluation in this case is essentially a *design management* tool, while the evaluation of design practice is addressed to the enhancement of the work of the designer, individually or collectively, and tends to be an integral part of the design process.

An activity / evaluation process that takes into account these two forms can be *situational* because it establishes a relationship between the designer and the process with a specific *design situation or situation of action research*, and may be aimed - explicitly or implicitly - at promoting the learning of the designer, where this is oriented to the future design action.

Another possible interpretation of evaluation is relational (Lesley Sewell, 2006), taking into account a range of possible indicators that relate to *the subjects participating in the development of the design or to the relationships that qualify* it imagining that the relationship with groups of users and designers in the design process can be a useful tool for the evaluation of the design.

Conclusions

The disciplinary growth of design and the extension of its field of activity have witnessed a parallel growth of evaluation mechanisms and processes. The professional activity is increasingly evaluated through competition initiatives as well as the scientific research and educational activities in the field of design are subject to periodic evaluation developed among communities of equals using procedures that are standardized globally. However, there still seems to be no reflection or systematization of knowledge related to the various areas of evaluation in the disciplinary field of

13 The design process and those who practice it.

design (there are no books, articles o design conferences dealing specifically with this topic). This gap is symptomatic of a lack of a *culture of evaluation in the field of design* involving a disciplinary scientific debate on the importance of this activity for design, both in design practice and in terms of values and indicators used to measure quality and effectiveness.

At present there are obvious problems of measurement and qualitative comparability of designs. There is not a real market of design in which the parties show their qualitative characteristics and their explicit requirements in a transparent manner. Quality does not have sufficient shared measurement tools; neither the designer nor the client and, above all, the end user, in the case of designs for public contractors, are sufficiently protected by existing evaluation processes. Public bodies don't have the tools to explicitly deal with the design project and therefore rely on generic contractual tools borrowed from other sectors.

The root node of the proposed solution concerns the startup of a culture of - *self-evaluation* - of the designing subjects that allows the development of a searchable database and on which it is possible to proceed with the creation of rankings for different levels of experience, necessary for insurance companies to adequately protect the parties involved. This process may include an idea of accreditation which carries the roots of a progressive growth of the author of the design and his continuous professional development, which can also be seen in a transparent and educational way. This path developed *through evaluation* (see Figure 2) provides a cluster of tools achievable by a scientific or design practices community concerned both with solving the problem of evaluation and increasing the level of awareness within and outside the community.

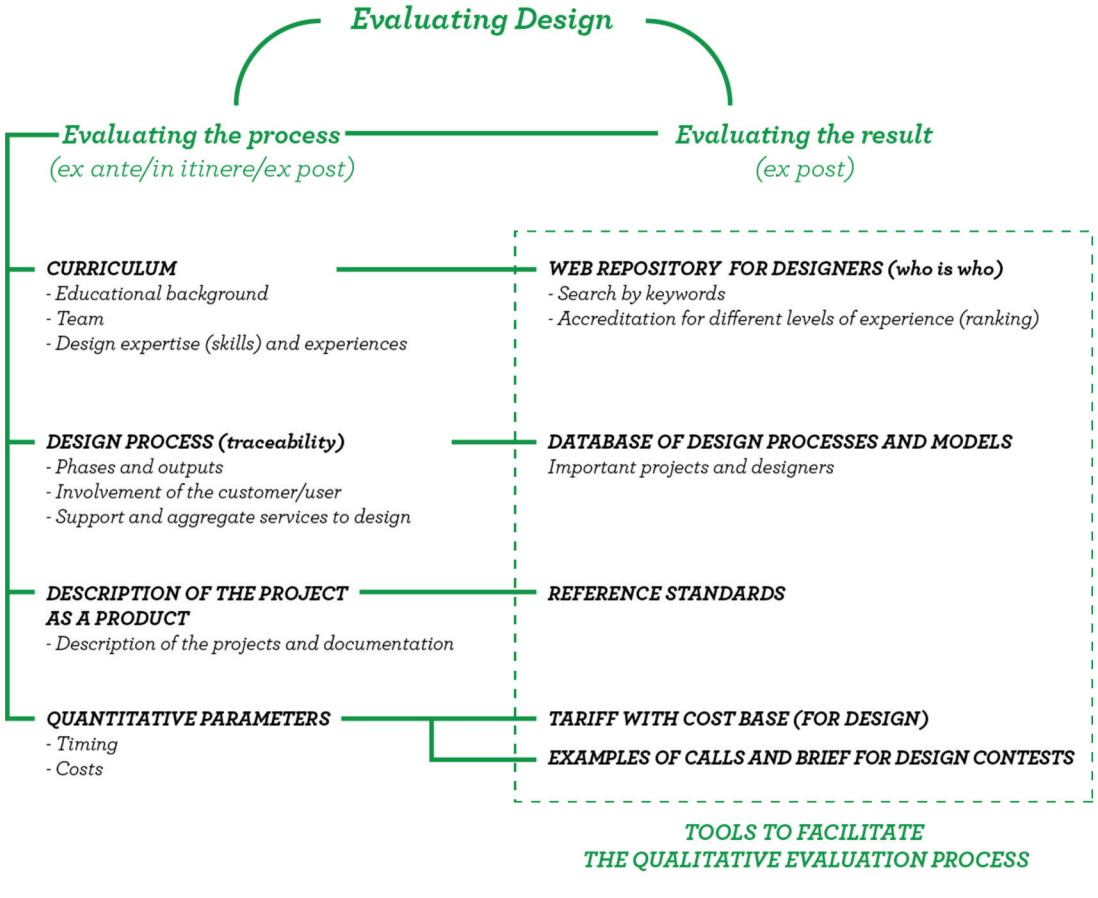

Fig. 3
Possible tools for the evaluation of design

Finally, we think it's very important to open an international debate around the idea that the evaluation of design is a humanistic aspect that cannot be separated from the quality of the designing subject and from his previous design experience; and that the relationship between quantity (parameterizable data) and descriptive quality aspects is the key to creating a platform for shared evaluation.

We believe that the interest of major organized clients, public entities, insurance companies and legal advisors in these evaluation processes may constitute a growth process of the importance of the debate on qualitative measurement of the project and its progressive fast establishment, driven by the importance that design is having in various aspects of public life of people in advanced societies.

Bibliography

AA.VV., (edited by M.Celi). 2010. Advanced design, McGraw Hill, Milan.

ALEXANDER, C. 1967. Note sulla sintesi della forma, Il saggiatore, Roma.

BIANCHINI M., MAFFEI, S. 2012. Could design leadership be personal? Forcasting new forms of indie capitalism in DMJ, Vol. 29, 2012.

BALCONI, E., ERBA, M. 2007. La creatività, Xenia Editions, Milan.

BAUDRILLARD, J. 1976. La società dei consumi, I Mulino, Bologna.

BONFANTINI, M.A. 1987. La seriosi e l'abduzione, Bompiani, Milan 1987

BRUSTAIN. M. 2007. L'arte come design, Einaudi, Turin.

CELASCHI, F., CAPPELLIERI, A., VASILE A. 2005. Lusso versus design, Franco Angeli Editor, Milan.

CELASCHI, F., DESERTI, A. 2007. Design e innovazione, Carocci, Rome.

CELASCHI, F. 2000. Il design della forma merce, Il sole 24 ore Editions, Milan, 2000

CELASCHI, F. 2008. Il design mediatore tra bisogni, in, Germak, C., (edited by), L'uomo al centro del progetto, Allemandi Editor, Turin.

CLARKE, A. 1999. Evaluation Research: An Introduction to Principles, Methods and Practice, London, Sage.

CROSS, N. 2006. Designerly Ways of Knowing, Springer.

DAVIDSON, D. 2003. Soggettivo, intersoggettivo, oggettivo, Raffaello Cortina Editor, Milan.

DE MASI, D. 1989. L'emozione e la regola, I gruppi creativi in Europa dal 1850 al 1950, Laterza, Rome-Bari.

DERMOT F. Murphy Developing a culture of evaluation School of English Language Education, Thames Valley University, London.

DORFLES, G. 2010. Design: percorsi e discorsi, Lupetti, Milan.

EVERITT, A. and HARDIKER, P. 1996. Evaluating for Good Practice, London: Macmillan

FERRARI, P. 1984. Achille Castiglioni, Electa, Milan.

FRANCALANCI, E. 2006. Estetica degli oggetti, Il Mulino, Bologna.

GARRONI, E. 2010. La creatività, Quodilbet Editor, Macerata.

GERDA, G., DE BONT, C. HEKKERT, P., FRIEDMAN, K. 2012. Quality perceptions of design journals: The design scholars' perspective, Design Studies, Volume 33, Issue 1, January 2012, Pages 4–23.

GIVONE, S. 1998. Estetica, La nuova Italia scientifica, Florence.

HEVNER, A.R., S.T. MARCH, J PARK, and S. RAM. 2004. Design science in information systems research. MIS Quarterly, 28, 75-105.

LEGRENZI, P. 2005. Creatività e innovazione, Il Mulino, Bologna.

LÉVI-STRAUSS, C. 1980. L'identità, Sellerio, Palermo.

MOLOTCH, H. 2005.Fenomenologia del tostapane, Raffaello Cortina Editor, Milan.

OSBORN, A.F. 1986. L'arte della creativity, Franco Angeli, Milan.

REMOTI, F. 1996. Contro l'identità, Laterza, Bari.

ROSSI, P. H., FREEMAN, H. and LIPSEY, M. W. 2004. Evaluation. A systematic approach, Newbury Park, Ca.: Sage.

RUBINI, V. 1980. La creatività, Giunti.

SCLAVI, M. 2000. Arte di ascoltare e mondi possibili, Le vespe, Pescara-Milan.

SUDJIC, D. 2009. Il linguaggio delle cose, Laterza editor, Rome-Bari.

TAYLOR, D. and BALLOCH S. (eds). 2005. The Politics of Evaluation, Bristol, The Policy Press.

VAN DEN BERG, Rob D. 2011. Evaluation in the context of global public goods, Evaluation, October 2011, 17.

WRIGHT, P., MONK, A. F. 1989. Evaluation for design, People and computers, 1989, V, A Sutcliffe & L Macaulay (eds.), Cambridge University Press, pp.345-358, proceedings of the HCT'89.