9. *Research Trajectories*

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9.1 Remediating history through archival fragments

Design Philology. Platform→

Research Trajectories. Narratives→

This chapter discusses some aspects emerging from one of the narrative paths in the digital platform Design Philology, Research Trajectories, dedicated to the historical roots of the PhD in Industrial Design at Politecnico di Milano. In line with the philosophy of the *Design Philology* project, the documentary approach went hand in hand with the idea of a plural memory made up of different stories and interpretations over time.

With this in mind, we will make visible what is not always overt in the documents, but can often be read between the lines: a history, or rather, complementary or even alternative histories, related to the foundation of the PhD. We intend to approach the analysis of the genesis of the PhD not through a historiographical or chronological lens anchored to a timeline, but through two main pillars: the first is the interpretation and interrogation of the sources and documents to highlight interstitial but significant elements; the second is the consideration of

the sources themselves as speaking objects to generate an imaginative narrative composed of visions, snapshots, and people.

The *ex-post* reading might lead us to a stance that, while not celebratory, can undoubtedly be asserted in relation to the established history of the period. Instead, a zoom-in/zoom-out approach, that critically reads between the lines of individual episodes, may lead to an expanded framework that renders a more varied narrative that is not subversive, but also not always as linear as it appears in the macro ex-post reconstruction, and that may be able to evoke more emotion and engagement.

Moreover, with their work of sorting, classifying (and now digitizing), archives often function as instruments of normalization of history: they are tools whose control sanctions who owns the knowledge, but above all the memory and thus the power (Foucault, 1969; Derrida, 1995). The archive is a device that creates a certain history by selecting certain materials and documents to preserve them. It becomes an orientation line of inventories and signatures, a static, almost monolithic repository. A palimpsest that, over time, silences a multitude of stories in favor of a single narrative to privilege the function of service and consultation. However, archives are always «imperfect» (Colombo, 1986), because in their obsession to collect (Deridda, 2005; Eco, 2019; Ferraris, 2009) they can never fully resolve the dilemma between memory and oblivion: Foucault (1969) reminds us that the archive can only be described through fragments. On the other hand, since the documents were selected at certain times and according to specific criteria, they can (and should) be read as views of reality that are often incomplete and ambiguous (Baldacci, 2016). We will therefore discuss the documents from the early years of the PhD as open and shifting traces in order to reframe the founding history of the PhD in a plural way and thus mediator of memory (Assmann, 2011).

When carefully interrogated, the archive is a place that offers the possibility of questioning hierarchical and temporally fixed narratives through an ex-post reinterpretation aimed at finding an assortment of non-explicit stories. A narrative that starts from the documents to search for other visions, meanings, and stories (about themes, people, events, etc.) in which records can become narratives, detaching themselves from their primary documentary function and becoming activators of memories and suggestions.

9.2 The beginnings

It was in November of the 1990/1991 academic year that the PhD in Industrial Design – Cycle V was established with the first successful candidates from the call for applications, but its genesis lies in the previous two years, in an intense period of discussion and debate.

The first formal document with a proposal for establishing the PhD program in Industrial Design dates back to June 1988 ⇘: it is a typed and hand-stamped document containing a programmatic proposal that is certainly the result of extensive academic and institutional concerted work. It is evident that the proposal's motivations aim to outline a scientific-technical and theoretical-applicable problem field within architectural culture, «as a first step in the necessary adaptation process» to the new realities that are also emerging in connection with the challenges of major innovations (microelectronics, information technology, telematics, robotics). There is a very conscious attitude towards the international scene and the contemporary nature of product design in relation to industry, but also a certain pressure towards the autonomy of a disciplinary field (industrial design) that was struggling to overcome an ancillary position in relation to architecture («a reading of industrial design that identifies it with the design of furniture objects») and to see its strategic importance recognized, as was the case abroad: the document explicitly reports that «in Italy, unlike other countries, there are no faculties or courses of study dedicated to industrial design», but only chairs or specialization courses. The repeated reference to the position within the Faculty of Architecture in Milan is perhaps also provided with an excessive justificatory emphasis but it is probably the result of an important institutional mediation in relation to a field of research that recognizes its paternity but also claims a certain independence.

Proposta di attivazione del Dottorato di ricerca in Disegno Industriale. Document→

Even such a detailed, even doctrinaire, presentation of the five curricula can be read, on the one hand, as a proposal for the topics within a broad and anticipatory vision of the discipline and, on the other, as a necessary delineation of interests and domains of competence that also serves as a statement of institutional positioning. The presence of so many complementary but also overlapping curricula (and numer-

ous subdivisions) shows between the lines the great cultural debate that must have prompted the drafting of this project, in an attempt to capture the diverse cultural and technical-scientific souls of emerging industrial design through explicit naming and detailing (though not exhaustively) in a synthesis that was not divisive but positioned it clearly internally and externally.

It is not difficult to imagine the conversations that must have animated this debate and to find a symbolic parallel in the Philology Project's *Design Convivio* exhibition, which stages an imaginary dialogue between eight polytechnic Masters about innovation, method, and teaching activities[1].

Within the framework of the project, the three-year training plan provides for a tripartite division of research training through theoretical courses in research methodology, training in specific research topics and areas, and original research work by the PhD student.

This approach initiates a particular tradition of the PhD program in industrial design that will later be institutionally anchored, as it will always be a hybrid path of PhD by courses + research[2] (although, as we will see later, with different balances).

The PhD coordinator is Raffaella Crespi, Full Professor of Industrial Design, and the faculty includes names of Full and Associate professors as well as researchers who have made fundamental contributions to the field (Anceschi, Castiglioni, Maldonado, Manzini, Marcolli, Trabucco, Zanuso, etc.): even the plurality of faculty members working in different scientific disciplinary sectors (besides industrial design, environmental design, architectural technology, furniture and interior architecture, tools and techniques of visual communication) leads to a convergence of transversal intentions.

On December 6th, 1989, the Council of the Faculty of Architecture meets and unanimously decides to activate the 5th and 6th cycle of existing (at that time national) PhDs and in particular those that have their administrative headquarters at the Politecnico di Milano, including Industrial Design ↘ (the others are Conservation of Architectural Heritage, Technology

Note 1.
The exhibition was curated by Giampiero Bosoni and Paola Bertola, dialogues curated by writer Gianni Biondillo and actress-director Paola Albini, inspired by original writings and quotations by Gio Ponti, Franco Albini, Carlo De Carli, Marco Zanuso, Achille Castiglioni, Vittoriano Viganò, Alberto Rosselli and Raffaella Crespi (all of whom graduated in architecture from the Politecnico and later became full professors at the same university). Exhibition design by Ico Migliore. The exhibition was on display in the Historical Library of the Leonardo Campus of the Politecnico di Milano from October 19th to December 22nd, 2023.

Note 2.
The key difference between a PhD by coursework and a PhD by research lies in the focus: the former typically involves a structured program of study, with a significant emphasis on completing a series of courses in addition to a research project or thesis; the latter places a primary emphasis on independent and original research.

PhD in Industrial Design (Fifth Cycle) competition.
Event→
Document→

of Architecture, Technical Innovation and Design in Architecture, Furniture and Interior Architecture).

The call for applications for the PhD program in Industrial Design was published in May of the same year, with two positions and one place reserved for foreigners.

The call described the admission exam, a written test and an interview (accessible only obtaining the minimum score in the written test), and regulated the passage of the year through the evaluation by the Teaching Committee of the activity carried out by the PhD candidate, which is presented in a *detailed report*.

In June 1990, the admission tests took place, and out of six candidates, three were successfully admitted. These numbers 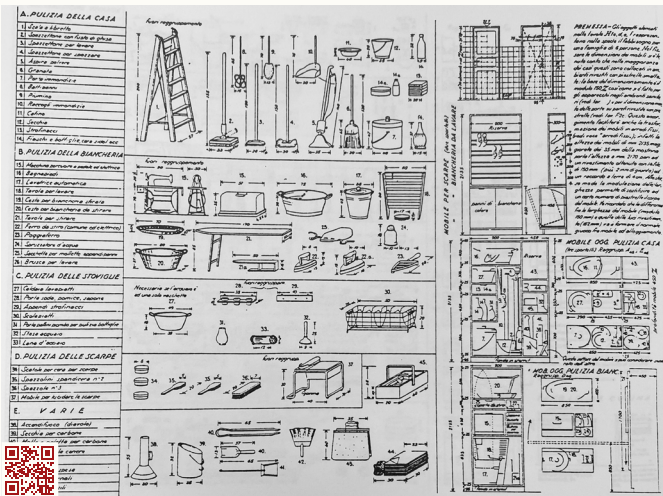tell us something about the examination methods, which were based on a small scale at the national level, and thus allowed a direct confrontation between the candidates and the examination committee to determine the candidates' suitability for scientific research.

The first two PhDs in Industrial design were awarded in 1994: Raimonda Riccini with *Gli elettrodomestici nella storia degli artefatti* ↘ [Household appliances in the history of artifacts], and Silvia Pizzocaro with Evolutionary approaches to technical products and systems.

Gli elettrodomestici nella storia degli artefatti.
Document→

Evolutionary Approaches to the Analysis of Products and Technical Systems.
Event→

These are two research theses that, photographing the historical phase of the establishment of the design research school at the Politecnico di Milano, on the one hand, appear as foundational, and on the other prove to be precursors in directing the development of specific themes such as theories of innovation and socio-technical systems, where many theses of the following decade will be inscribed. Nevertheless, one can recognize in these two works a position of critical inquiry that reflects the need to implicitly define the

boundaries of design research through themes related to innovation in different ways: the first through a non-chronological typological study of artifacts, the second through an evolutionary metaphor of technological change and technical objects borrowed from the world of the natural sciences.

It is interesting to note, as Pizzocaro herself remarks in retrospect (Pizzocaro, 2010), that there was not yet a unifying factor of a methodological nature in those researches, but rather a tacit research dimension in design, which is therefore also partial in relation to the topics of investigation. Through an analogous heuristic and cognitive process, Silvia Pizzocaro's thesis promotes a shift from the dichotomies organic/inorganic, natural/artificial to the concept of the technical object as a naturalized object and systematizes different taxonomies and hierarchies of change; Raimonda Riccini's thesis, which does not refer to a periodization but to different typologies that can be traced back to a specific environment and a common matrix, is characterized by a highly historical-critical approach and proposes an analysis based on the profound analogy between industrial design and material culture, also in relation to the development of technologies.

The counterintuitive reading of these two theses, against the general expectation of legitimacy of an initial artifacts debate, brings to light precise incisions that cannot necessarily be combined into a foundational and guiding framework for further research.

9.3 The coordinators

Crucial to the history of the PhD program were the personalities of the coordinators, who shaped the development of the program both institutionally and culturally: they acted as bridges between the academic and professional communities by establishing collaborations with external institutions, organizing conferences and seminars, and promoting the exchange of knowledge and ideas. Tomás Maldonado became coordinator in 1990, with the establishment of the 5th cycle, and remained in office until 1997. His multifaceted figure as an intellectual, artist, theorist, and designer also places the systemic concept of environmental design at the center of his doctoral training and research.

For Maldonado, education was an ideal place where different aspects of his personality came together. It was an opportunity to exert his influence on young people and to receive from them the most stimulating solicitations to continue thinking about the problems and utopias of the contemporary world. (Riccini, 2022, p. 63)

It is no coincidence, then, that Maldonado was the first coordinator of a program that anticipated other experiences at the national and international level and contributed to the legitimization of design as a research discipline capable of expressing a specific cognitive attitude, a unique way of «knowing the world» and producing new knowledge. (Bertola, 2002, p. 12)

For Maldonado, the problem of design education from the beginning was the lack of ideas, and therefore his work constantly aims to develop new ideas (Riccini, 2022, p. 71). The activation of the PhD program before the bachelor's degree was not only an academic and political decision, but the intuition of a clearly defined project in which research could become a «permanent reference for design» (Maldonado, 2001), which should also be considered fundamental for professional activity.

The proposal for the PhD institution ↘ states that «a PhD program dealing with the various aspects of industrial design» is an «important, albeit still incomplete, step towards making up for lost time and catching up with developed countries, as part of a more general strategy for the renewal of educational and research institutions». Maldonado seems to be aware of the importance of research as a fundamental educational tool, based on a variety of knowledge, both humanistic and scientific-technical, reflecting his conception of the designer as an intellettuale tecnico, «technical intellectual» (Riccini, 2022, p. 70).

The early years of his activities are dedicated to strengthening the disciplinary core of design, exploring the relationship between technology and artifact, and investigating the nature of design-driven innovation: topics considered central to the disciplinary debate of the time (Guerrini, 2010). For Maldonado, the strong emphasis on research is an essential step in developing the subsequent educational project. The seven years under his coordination saw environmental

and technological design as the macro-themes in which active research was embedded.

Coordinator from 1997 to 2009, Ezio Manzini initiated a substantial renewal process of the PhD program, shifting from a tacit design research dimension to an explicit education in design research, in continuity with his predecessor (Pizzocaro, 2010). In the years of his coordination, there has been a remarkable development of methodological and theoretical aspects in the field of design (Guerrini, 2010), reflecting a growing commitment to research and deepening the conceptual foundations of this evolving discipline. In parallel, the research topics reflected in current dissertations are experiencing a gradual expansion, encompassing new areas of investigation and application. We saw an increasing interest in issues such as environmental sustainability, ergonomics, service design, social innovation, strategic design, and interface design.

Tomás Maldonado is Coordinator of the PhD in Industrial Design. Event→

The evolution of the PhD program is not limited to conceptual and thematic aspects, but also provides for quantitative growth in enrollment: the program is expanding to accommodate an increasing number of students, reaching fifteen students per year (Guerrini, 2010). This increase in the number of participants reflects the interest in the program, but also its rising international recognition. The program is gaining visibility and reputation worldwide and attracting students' attention from different regions of the world.

In particular, foreign students from regions such as South America, the Middle East and the Far East are increasing significantly. They find the program a welcoming and stimulating environment to continue their studies and contribute to the international academic community.

9.4 Active thesis

In relation to the topics of the early research theses, it is macroscopically evident that the two lines in which most of the theses are located are environmental design and socio-technical systems: however, this overview is readable because we consider the theses within a larger framework that historicizes them and relates them back to acquired thematic directions. Looking at the individual documents, the theses are very much focused on definitional and methodological aspects (Mangiarotti, 1995, and Morelli, 1995, in relation to innovation and environmental issues; Penati, 1996, on technological change) or on the delimitation of specific and original niches such as packaging (Bucchetti, 1995), light design (Murano, 1995), etc. What looks like an oriented path was in reality a much more fragmented, disjointed, sometimes even bumpy path: in the search for relationships and sequentiality between the different cycles, we can now connect the first reflections on perceptions and sensoriality in the new media (Ceppi, 1995), on communicative artifacts (Montefusco, 1996), on digital technical objects (Maffei, 1997) and on synesthesia (Riccò, 1997) as the prelude of a line of research that transfers the innovation processes of socio-technical systems into the sphere of new forms of communication; the abstracts and indexes of the theses, however, do not always reflect the awareness or the visionary nature of this framework, but remain focused on the urgency of the emerging relationship between ICT and design.

Similarly, the development of research on environmental design (Mangiarotti, 1995; Morelli, 1995) and sustainability (Costa, 1998), for example, is not so linear. Today we recognize these established research trajectories and directions thanks to the awareness of the disciplinary expansion of design: in the complexity of the theses active in this early phase, we can see the emergence of a disciplinary pluralism represented by what Julier (2000) will define as «design cultures» (in homage to Italian *cultura del progetto*). In the early years of the PhD program, these paths were neither programmatic nor systematic, and history was still written in episodes. For this reason, the dissertations in the online narrative path ↘ are visualized through a mosaic structure.

Research Trajectories.
Narratives→

This multiverse tendency in doctoral research is also reflected in the openness to the international world evident in early dissertations dealing with other contexts (Ponzo Dutra, 1995; Cerejio Roibas, 1996).

9.5 The PhD as an activator of research lines

Since its introduction, the PhD program has acted as a catalyst and incubator for the activation and development of innovative lines of research. Some have taken quickly recognizable trajectories through increasingly specialized dissertations, while others have evolved over time. It is interesting to recognize some of the theses that have marked turning points and influenced thinking and practices in the field of research at theoretical, exploratory, methodological, and design levels: theses that have transferred concepts from established domains of knowledge into the still unexplored space of design (e.g. services, food), theses that have exposed themselves to new systems of definition (e.g. strategic design), theses that have opened the design horizons to innovative and forward-looking contexts (e.g. aerospace). From an ex-post perspective, the decision to enhance these theses in the context of doctoral development is related to the fact that they can - today - be categorized in established strands. This does not mean, however, that a greater visionary or anticipatory capacity is attributed to these works, since the consequence and the series of connections can only be clearly read today, nor does it give some themes an alleged superiority over others. If anything, one should ask why it has been possible to develop a research line for some themes, broadening the picture to include the events and conditions of the time: contextual contingencies (funding, relationships, privileged position of speakers, etc.) or macro-political-cultural events, even on an international scale.

It remains evident how these contributions have created a solid basis for developing specific topics in the design field, but also for internationalization processes and the establishment of research groups.

Elena Pacenti's 1998 thesis, *Il progetto dell'interazione dei servizi: un contributo al tema della progettazione dei servizi* [The Design of

Service Interaction: a Contribution to the Theme of Service Design], focuses on *service* as a «defining phenomenon of mature industrial societies» in the context of design (Pacenti, 1998). Pacenti points out the apparent disciplinary lack of design culture dedicated to services, even though they play a growing role as a characteristic phenomenon of society. Service interaction design, which appeared in this thesis as «an unexplored area of application in the field of service design, a novel approach alien to the prevailing culture» (Pacenti, 1998), now emerges as a well-established disciplinary field that has led over time to the publication of several other theses (Sangiorgi, 2004; Cipolla, 2006) and to a structured course of study (PSSD).

Another focus is strategic design, from the dissertation by Francesco Zurlo, the current Dean of the School of Design. The context of

A Framework for Strategic Design: The Interplay of Design and Strategy in Modern Enterprises. Event→

change described in A Framework for Strategic Design (Zurlo, 1999) consists of people and active participation, consolidated within a «scientific community that has matured its own understanding of the phenomenon» but is still in search of a common definition. A glance at the table of contents shows that the first part of the work is dedicated to the definition of strategic design and its relationship with the academic community of the Politecnico di Milano, pointing out that it is the result of previous reflections, such as those of Anceschi, 1992; Montefusco, 1995; Pacenti, 1998. It can be understood that this work is the fruit of hypotheses and themes already planted in previous years, which are now undergoing an organic structuring that opens them up to the future. Further theses on this topic will be published later, increasingly oriented to specific business models, such as Mortati's (2011).

Designed Food: A New Disciplinary Field for Industrial Design. Event→

Anna Meroni's thesis (2000) ↘ introduces food to the wide world of design but first asks whether industrial design can «fill a design gap» with the «desire to discover new connections of meaning between products and behaviors». A research that starts from action research to transform food, previously considered a purely industrial component, into more articulated reading models suitable for the «complex world of food design, understood in the totality of food + packaging». On this topic, activating a recognizable line of research is not immediate, but research in this area will be carried out in the coming years (Thudichum Vasconcelos, 2008; Simeone, 2009).

Design research is also the subject of Annalisa Dominoni's 2000 dissertation ↘, which deals with aerospace research, one of the most complex and innovative fields on the international scene, «dense with potential and design opportunities that make it extremely interesting for the scientific community of industrial design». As mentioned in the introduction, research is in a phase of intense transition, characterized *by* «major changes and transformations due to the need to redefine and deepen the role and specificities of the PhD in industrial design» (Dominoni, 2000), a period in which the interdisciplinary orientation is vital, as is the desire to open up to the industrial world. A thesis, therefore, that focuses on the aerospace context, but proposes a broader reflection on design universities that cannot limit themselves to the world of education, but must build a bridge to technical knowledge, the real context and customers.

Copertina della tesi di dottorato di Annalisa Dominoni.
Document→

The theses selected here do not offer an exhaustive overview of the research lines opened up in the first years of the PhD program, but reading them *ex-post* can provide the basis for awareness of the roots of research in design. On the other hand, there are also theses that can be considered punctiform, i.e. specific topics that are limited in scope but have nevertheless made significant contributions (De Paolis, 1997; Gabbatore, 2006; Donoso Cisternas, 2007).

9.6 Internationalization of the PhD

If the PhD begins with Maldonado, the «militant professor» and «tireless creator of educational projects» (Riccini, 2023), the *Design plus Research* conference, which took place at the Politecnico di Milano from May 18th to 20th, 2000, marks a moment of deep reflection and critical analysis, or rather self-criticism, ten years after its activation. The conference was organized as part of the PhD in Industrial Design activities and curated by Silvia Pizzocaro, who, in addition to publishing the conference proceedings, launched the D+R website[3], where abstracts and full papers can be freely downloaded. This online repository now gives us access to the

Note 3.
D+R website.
Link→

most important topics addressed by the approximately 150 scholars and researchers from 20 countries who are «committed to the common task of contributing to building the foundations of a research culture in the field of Industrial Design», «while promoting dialogue with the relevant international community»[3] ↘.

The three-day conference offers researchers with different interests and methods a space to present and discuss their findings. These are intensive days of study and discussion, in which the changes in the design field are thematized and, above all, in which research is reconsidered in its relationship to design. The plenary sessions focused on the overarching theme of research culture, while the parallel sessions were based on different perspectives of inquiry: the theory-oriented approach, the user-oriented approach, the curriculum-oriented approach, the innovation-oriented approach, and the context-oriented approach ↘.

A breaking contribution is that of Tomás Maldonado, who argues in his keynote speech that there are still many theoretical and practical issues in the relationship between design and research that are not being addressed with the necessary rigor. He wonders how it is possible to think design without research and to what extent this view can impact on the PhD itself. He questions the title of the conference:

> **The fact that the suggestive word plus has been inserted between Design and Research would seem to indicate that Research is considered something that can be added, from the outside, to Design. In short Research, in this perspective, is seen for the most part, if not exclusively, as a complementary factor of Design, an optional factor which, under different conditions, can be added (or not), as the case requires. (Maldonado, 2000)**

The theme of research in design, which is directly related to the doctoral path, is therefore one of the most highly regarded. Victor Margolin, emphasizes how «doctoral education is, of course, a very new phenomenon and we are yet to understand its relation to a wider research culture. But the way we structure such education will be extremely important as a means of providing new models of research» (Margolin,

2000), and picks up by claiming that crucial to the development of this culture is the ability to ask meaningful questions.

When reading the proceedings, it becomes clear how necessary it is to question established concepts, conventional approaches and implicit assumptions in relation to design from within the process. Only through critical reflection can previous boundaries be overcome and new perspectives opened up. However, a mature research community still seems to be lacking, and the associated opportunities for encounters and discussion are still too limited. The conference is also a moment of strong internationalization:

Design plus Research_001.
Document→

the conference made it possible to formalize and consolidate numerous contacts and agreements with different universities around the world and to increase the visibility of the PhD.

9.7 The redesign of the PhD

The new millennium began with numerous changes for the PhD program in Design at the Politecnico di Milano: in 2000, a process of radical revision of the PhD program began, motivated both by the institutional changes in the Italian university[4] and by the inadequacy of the program in answering the latest questions in design research, also in relation to the development of an international debate on doctoral research in design (Pizzocaro, 2010).

Note 4.
A PhD School is also established at Politecnico di Milano (2000).

The new program lays the groundwork for the PhD to take on an incubator role regarding potential skills to grasp the critical aspects of design research development and the interactions between technology and society (Pizzoccaro, 2010).

These changes are also embodied by the panel discussion *Dottorato, Ricerca e Mondo Produttivo* [PhD, Research and Productive World]

held on March 26th, 2001 to introduce the Reference Committee, composed of external actors from the economic, social and cultural spheres. It can be read in the brochure dedicated to the event ↘:

The aim of this PhD program is to train a research personality who will conduct research in both the academic and industrial fields. Two professional profiles are proposed: a figure launched to the planning of research, the production of research culture and the dissemination of research, and a figure who is able to work in the identification of problems, the selection of research objectives and the identification of solution strategies in the production context. (Dottorato, Ricerca e Mondo Produttivo, 2001)

In 2002, the 16th cycle, effectively a newly activated PhD program, took

on the name PhD program in Industrial Design and Multimedia Communication (DIeCM) ↘. The courses have been redesigned in their objectives, content and operating mechanisms to ensure efficiency and adaptation to the new trends in the field. Most importantly, the conceptual position of structured research training is strengthened by moving from more informal, supervisor-based training to formal teaching (basic training, i.e. research training, specialized and elective courses) in parallel with the development of the dissertation.

PhD students are required to participate in institutional research activities, reinforcing the hybrid model of PhD by courses + research that was envisaged when the PhD was founded. A model that will permanently characterize the PhD and which, in this restructuring, will reach a considerable amount of credits (60 cfu per year), but which will be gradually weakened and transformed in the current phase into formation more focused on research methods (45 cfu in total).

Comparing the past with the present of the PhD 30 years after its introduction, allows a reinterpretation that also offers us a future perspective, along an axis that, despite everything, shows continuity in terms of the patterns of design research: we can recognize the changes in terms of the structure of the PhD, teaching perspectives, courses, curricula and methods, but also a common trajectory of attentive

reading and adaptation to the demand for design, which is gradually gaining in importance. For example, in 2002 two courses of study were established: that of Industrial Design, which accompanies the transformations of industrial and productive culture; and that of Multimedia Communication, related to the resolution of complex problems of a communicative nature. This articulation responded to a contingent need to ascribe in the processes of change guided by design the emergence of information, multimedia and multisensory technologies. Today, there is no longer any reason for this separation, as the multifaceted nature of design research has normalized the close interrelationship with the most advanced digital technologies and post-industrial culture. So much so that in 2009, coinciding with the coordinator change, the PhD in DIeCM took on the name *PhD in Design*, which it still retains.

9.8 Conclusions

30 years after the activation of the PhD, it is essential to recognize the evolution and contribution of this program to design research. It is the first PhD program in this disciplinary field, whose evolution we can read from a linearity of data and dissertations. However, this view leads us to assume a single, organic past.

The critical approach to documentary analysis used in this essay enabled us to gain a more nuanced understanding of the issues addressed and their subsequent development, but also of the conceptual controversies. Most importantly, we could recognize the complexity and richness of the human experience through an empathetic narrative approach, even in an academic setting.

Ultimately, maintaining an open and generative approach to the history of the PhD program allows us to keep the intellectual and productive debate alive within the scholarly community, but also to consider archives as places of interpretation and catalysts for connections, personal and collective memories. This way, we can ensure that this educational program continues to drive innovation and progress in design and beyond.

References

Anceschi, G. (1992). *L'oggetto della raffigurazione*. EtasLibri.

Assmann, A. (2011). *Cultural Memory And Western Civilization. Arts of memory*. Cambridge University Press.

Baldacci C. (2016). Archivi impossibili. Un'ossessione dell'arte contemporanea. Johan & Levi.

Bertola, P. (2022). "Reading Tomás Maldonado: back to Design Research Future". In Califano, P. (edited by), *Exploring Tomás Maldonado*. Fondazione Giangiacomo Feltrinelli.

Bucchetti, V. (1995). *Packaging e identità di prodotto: come il prodotto comunica se stesso*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Ceppi, G. (1995). *I sensi differiti: design e nuovi modelli di percezione nella società massmediale*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Cereijo Roibas, A. (1996). *Artigianato industriale: Spagna-Italia: due approcci all'economia del design.* Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Cipolla, C. (2006). *Designing for interpersonal relational qualities in services: a model for service design theory and practice*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Colombo, F. (1986). *Gli archivi imperfetti*. Vita e Pensiero.

Costa, F. (1998). *Prodotto, sistema di produzione, ambiente: verso uno sviluppo sostenibile del settore industriale*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

De Paolis, R. (1997). *Morfogenesi e progetto*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Derrida, J. (2005). *Mal d'archivio. Un'impressione freudiana*. Filema.

Dominoni, A. (2000). *Disegno industriale per la progettazione spaziale*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Donoso Cisternas, S. F. (2007). *Etnografia virtuale per il Design. Criteri per lo sviluppo di un osservatorio multiculturale in rete, come strumento per la ricerca meta progettuale*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Eco, U. (2019). *Vertigine della lista*. Bompiani.

Ferraris, M. (2009). *Documentalità. Perché è necessario lasciar tracce*. Laterza.

Foucault, M (1969). *L'archeologia del sapere*. Rizzoli (2006).

Gabbatore, R. (2006). *La rappresentazione dello "spazio della complessità" del progetto contemporaneo. Nuovi strumenti di rappresentazione, conformazione e comunicazione*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Guerrini, L. (edited by) (2010). *Notes on doctoral research in design: contributions from the Politecnico di Milano*. FrancoAngeli.

Maffei, S. (1997). *Oggetti tecnici digitali: la vita dei nuovi artefatti tra sistema socio-tecnico e linguaggio*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Maldonado, T. (2001). Opening Lecture. In *Atti del Convegno Internazionale "Design Plus Research" (maggio 2000)*. Politecnico di Milano.

Mangiarotti, R. (1995). *Gestione strategica della qualità ambientale nei prodotti: teoria e prassi. Analisi del caso Sony Europe GmbH*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Margolin, V. (2000). Building a design research community. In De Moraes, D., Arruda, A., Pizzocaro, S. (edited by). *Design plus Research: proceedings of the Politecnico di Milano Conference*. Politecnico di Milano.

Meroni, A. (2000). *Il cibo disegnato: un nuovo ambito disciplinare per il disegno industriale*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Morelli, N. (1995). *Innovazione e ambiente: meccanismi innovativi e trasformazioni del prodotto e del sistema di produzione in seguito all'emergere delle problematiche ambientali*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Montefusco, P. (1996). *Multimedialità digitale ed evoluzione del panorama dei media. Artefatti comunicativi e strumenti progettuali*. Doctoral Dissertation in Industrial Design. Politecnico di Milano

Mortati, M. (2010). *Progettare Reti Collaborative d'Impresa. Linee guida e competenze del design strategico*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Murano, F. (1995). *Le figure della luce*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Pacenti, E. (1998). *Il progetto dell'interazione dei servizi: un contributo al tema della progettazione dei servizi*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Penati, A. (1996). *Il cammino dell'innovazione. Una lettura sistemica dei processi di cambiamento tecnologico*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Pizzocaro, S. (2011). The in-progress status of doctoral research in design. Reflections from two decades of local doctoral research. In Guerrini, L. (edited by). *Notes on doctoral research in design: contributions from the Politecnico di Milano*. FrancoAngeli.

Ponzo Dutra, H. (1995). *Implicazioni relative ai processi di trasferimento e diffusione tecnologica nei paesi periferici: evoluzione e sviluppo della tecnologia della produzione del freddo in Brasile*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Riccini, R. (2022). L'educazione tra sfida teorica e militanza democratica. Innovare la formazione. In AA.VV., *Tomás Maldonado e la sfida della trasversalità*. Fondazione Giangiacomo Feltrinelli.

Riccini, R. (2023). *Nuovi approcci all'educazione: Tomas Maldonado, professore militante*. Fondazione Giangiacomo Feltrinelli. Retrieved from: https://fondazionefeltrinelli.it/scopri/nuovi-approcci-alleducazione-tomas-maldonado-professore-militante/ (ultima visita 20/02/2024).

Riccò, D. (1997). *Il suono dei new media: un approccio sinestesico ai fenomeni d'interazione sensoriale nei software multimediali*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Sangiorgi, D. (2004). *Design dei servizi come design dei sistemi di attività : la teoria dell'attività applicata alla progettazione dei servizi*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Simeone, G. (2009). *Cibo per la città. L'agricoltura peri-urbana come motore di sviluppo sostenibile del territorio attraverso un approccio di Design dei Servizi*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Thudichum Vasconcelos, A. (2007). *Il cibo del futuro. Verso un modello di alimentazione sostenibile*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.

Zurlo, F. (1999). *Un modello di lettura per il design strategico: la relazione tra design e strategia nell'impresa contemporanea*. Doctoral Dissertation in Industrial Design. Politecnico di Milano.