Exploring Tomás Maldonado

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Summary

7

Introductory Note

The idea for this book originated from the inter-doctoral course "The Legacy of Tomás Maldonado", promoted by the Doctorate in Design and the School of Design of Politecnico di Milano, with the support of the Feltrinelli Foundation. The course, curated by Luca Guerrini and Raimonda Riccini, involved approximately 60 doctoral students and 11 doctoral programmes.[1]

From February to April 2021, through the reading of texts and meetings with experts, the doctoral students were confronted with the thought and work of Tomás Maldonado on six themes: the training of designers, the role that artistic practice has in the design process, the

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1   The course involved the following PhD programmes: "Architecture and Design Cultures", University of Bologna Alma Mater Studiorum; "Architecture, Design, Planning", University of Camerino; "Environment, Design and Innovation", University of Campania Luigi Vanvitelli; "Architecture and Urban planning", University of Ferrara; "Sustainability and Innovation for the Design of Built Environment and System Product", University of Florence; "Architecture and Design" and "Scienze e Tecnologie del Mare", University of Genoa; "Design", Politecnico di Milano; "Architecture", University of Naples Federico II; "Planning, Design and Architecture Technology", Sapienza University of Rome; "Management, Production and Design", Politecnico di Torino; "Architecture, City and Design", Iuav University of Venice.

environmental issue, the attention to the body and to interaction, the relation between design and technology, the contribution that semiotics and the philosophy of language can make to design. Out of this comparison emerged the essays by the doctoral students that make up this volume.

Before these, the essays by Paola Bertola, Luca Guerrini, and Raimonda Riccini reflect respectively on the perspectives of research in design, the doctoral learning experience gained in this seminar, and the influence that - directly and indirectly - Maldonado has had on the history of teaching design in Italy.

The section of doctoral students' essays opens with an essay by Pierfrancesco Califano that reconstructs how the six themes discussed in the seminar developed in Tomás Maldonado's thought and activity.

An Experiment in PhD Online Teaching: The legacy of Tomás Maldonado

Luca Guerrini

"The legacy of Tomás Maldonado" is an unprecedented training experiment in Italian PhD programmes on Design. For the first time about 60 doctoral students throughout Italy attended a course designed entirely for online teaching, lasting 12 weeks, during which they collaborated not only sharing their own ideas but also bringing into the learning process the disciplinary culture, the methodology, and the research topics of each doctoral school, building a fertile terrain for exchange.[1]

From the very beginning, we planned to involve the largest possible audience of doctoral students. We are therefore grateful to the PhD programme and the School of Design of Politecnico di Milano for support, and to all the colleagues of the Italian PhD programmes linked to the discipline of design who have joined with enthusiasm, allowing us to put this experiment into place.

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1   See the *Introductory Note* in this book for the complete list of the PhD programmes involved.

This essay retraces the learning path leading to the final seminar of which this volume collects the outcomes. We outline the course structure, the pedagogy and the practices adopted, so that other colleagues might replicate this experience. Effective choices and weaknesses are critically revised, not only from the teachers' perspective, but also by commenting on the outcomes of a self-administered questionnaire we distributed at the end of the course.

Premises and Past Experience

From a methodological perspective, the course rests on a previous teaching experience conducted in the Design Doctorate of Milan, which Ezio Manzini and I entitled "Organising scientific seminars". That course – in fact – aimed to organise an annual public seminar identifying key concepts of the design debate that emerged from the research work of doctoral students. Therefore, it was a training course that finalized theoretical reflection to concrete action (Guerrini, 2020).

The course pedagogy adopted a revised version of *action learning*, a method developed by Reginald Revans around 1980, which is aimed at concrete action and based on teamwork and collaborative practice among peers (Revans, 1982; Revans, 2011). Revans's model was particularly suitable for a community of doctoral students, that is, young researchers who already possess specialist skills that were thus recognized. Furthermore, the model attributed to the teacher the task of bringing out the skills and knowledge from group work instead of transmitting them – Revans himself defines the teacher as a "coach" or an "accoucheur". It was, therefore, a sort of "flipped classroom", before Eric Mazur (1997).

Indeed, the class became a sort of cabinet where ideas, decisions and actions were debated and deliberated, amplifying the power of dialogic conversation. This strategy proved to be particularly effective both in overcoming the roughness usually arising in teamwork and in achieving a shared goal. Reflecting on collaborative practices, Richard Sennett underlines the strong link between dialogic conversation and

the empathic experience (Sennett, 2012). Empathy is the ability to recognize the other as such, on the basis of common humanity, allowing us to cooperate with the stranger and with the foreigner (Devecchi, Guerrini, 2019). This experience is increasingly common today, also among doctoral students.

If, on the one hand, Tomás Maldonado would certainly have appreciated a learning path based on conversation,[2] on the other he would have harshly criticised a course entitled to his "legacy" relying on the action of doing. Everyone knows, actually, how sceptical Maldonado was about the application of the pragmatist educational approach – popularized as "learning by doing" – especially in higher education. Reflecting upon Bauhaus pedagogy he stated: "We know now that theory must be impregnated with practice, practices with theory. It is impossible today to act without knowledge, or to know without doing" (Maldonado, 1993, p. 299). Therefore, from his perspective, any learning experience in higher education should focus on the development of critical thinking, even when conveyed by practice, since designing is primarily a moral commitment. "Conscience is, by its nature, restlessness, its task is to disturb, not to preserve quietness, namely, its task is to ask tirelessly questions, to advance doubts and to require for clarifications. Conscience, therefore, is always critical" (Maldonado, 2001, p. 195. Translated by the author).

However, we believe we have made it clear that the action we pursue – the *organization* of the seminar – is instrumental to critical elaboration. The whole process focuses on understanding and critically revising what ideas should be discussed in the seminar and how. In this respect, we may see a link to design pedagogy. The course as "a revised version of the design studio, aimed at handling an intellectual construct – the seminar – instead of a product. Similarly, we can con-

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2   Talking about Maldonado's teaching style, Giovanni Anceschi says: "An informal teacher, that is, a conversationalist who has made conversation, that is the ability to listen as well as to say, one of the liberal arts" (Translated by the author), Anceschi, 2001, p. 162.

sider the mapping of knowledge as content and the final seminar as form of the design process" (Guerrini, 2020, p. 165).

The Process of Adaptation

The first challenge we faced designing "The legacy of Tomás Maldonado" was to adapt the bottom-up approach of the model to the new content and goals. Although the exploration of the complex and multifaced scientific production of the master was the assignment, we rejected from the beginning any subjection or – worse – flattery. Doctoral students were young enough to cast fresh light on his intellectual endeavour. Most of them had never met him personally nor studied deeply on his books before. Therefore, they could interpret the term "legacy" in a personal, original and unbiased way.

Maldonadian corpus, however, is so vast, his scientific biography of theoretician, educator and professional so complex that we, as instructors, had to provide the students with a compass. Among many choices we finally selected six topics as potential fields for further investigation: the role of art practice, design pedagogy, environmental design, the relationship between design and technology, the body and the notion of interaction, the connection between design, linguistics, and semiotics. Each topic was introduced by a brief, carefully selected list of references that could help students quickly finding their favourite field of investigation. This strategy mediates between full freedom of choice and assigned task, allowing to form groups sharing common motivations and goals.

The second challenge we faced was indeed a tough one and consisted in rearranging the course in a remote modality. We were aware that the design and management of the course as well as teaching practices required adaptation to online teaching (Boling, et al., 2012). Distance learning gave us a unique opportunity "to include geographically dispersed audiences via online" (Keengwe, Kidd, 2010, p. 538), thus laying the foundation for further doctoral courses, even if the new medium seemed testing hard any pedagogical approach based on

dialogic conversation and empathy. The philosopher Carlo Sini delves into the distance learning experience from a phenomenological perspective distinguishing between competence and knowledge. We can successfully acquire the first via online, resting on the efficiency of tailored technological tools. Much harder – or even impossible according to Sini – is to achieve the second for it can only spring from the encounter with the other "in flesh and bones".[3]

This attitude towards distance learning was common thinking among many Italian academics before the pandemic. Unlike foreign universities, especially in the US, which massively tested the potential of both synchronous and asynchronous distance learning (Keengwe, Kidd, 2010; Baran, et al., 2013; Kebritchi, et al., 2017), limited experimentations had been put in place in previous years in the country. Therefore, this learning modality was regarded with vague suspicion, which only the pandemic emergency forced to reconsider.[4]

Compared to past foreign experiences, however, our model showed promising features. Our pedagogy is characterized by an active learning student-centred approach as many online learning environments (Browne, 2005). Collaborative components are fundamental for the development of learning practices (Olofsson, 2007). The teacher/learner interaction in our course share with successful online activities a strong dialogic approach (Baker, Watson, 2014). Finally, the teachers already act as tutors or facilitators (Anderson, et al., 2001; Baran, et al., 2011). The shift to distance learning was therefore reasonably feasible.

Moreover, both the doctoral students and the teachers were already skilled to handle the tools. The course was designed between November 2020 and January 2021 after everyone experienced the dramatic move into the web of the whole education system in spring 2020

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3   Carlo Sini, *Education and telematic tools* [in Italian], https://www.youtube.com/watch?v=kA9pxBvXud0. See also Edmund Husserl, *Phenomenological Psychology. Lectures, Summer Semester*, 1925, edited and translated by John Scanlon, Martinus Nijhoff, The Hague 1977, p. 11.

4   The debate involving Carlo Olmo, Ferruccio Resta, Gabriele Pasqui and Francesca Tosi on *Il giornale dell'Architettura* immediately after the beginning of the pandemic is particularly meaningful in this respect, https://inchieste.ilgiornaledellarchitettura.com/a-distanza-da-chi-2/.

(Crawford, et al., 2020). That trial and – sometimes – error process we went through was crucial for shaping the course appropriately, and – especially for the teachers – for reconsidering their role in the learning process at large.[5] Since we had never practiced distance education before the pandemic, our effort was to translate the experience we gained from emergency remote teaching into a better formalized online learning proposal (Hodges, et al., 2020).

Designing the Course

Both in past experience and in the new course, doctoral students were meant to play a central constructive role. Elaborating on "The legacy of Tomás Maldonado" they could rely on robust critical, methodological and technical tools they acquired before joining the class. They knew how to analyse and critically review texts, how to find further references and map them, how to extrapolate meaningful questions from the outcomes of their research. Therefore, they could focus on the chosen topic mastering most of the tasks required.

Teachers instead had to carefully adjust their posture to fit the virtual learning environment. The online teacher roles identified in the literature, likewise in the traditional face-to-face context, "comprise pedagogical, facilitator, instructional designer, social, managerial, and technical roles" (Baran, et al., 2011, p. 427). These roles, however, are differently prioritised (Bawane, Spector, 2009). Expert teachers in a face-to-face contest can always adapt the learning path in real time according to the reaction of the students. In online teaching the quick real time response may be ineffective. Therefore, instructional design, that is planning, organizing, and structuring the course components became crucial (Anderson, et al., 2001, p. 4-6; Hodges, et al., 2020, p. 4).

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5   Affective factors, which apparently have no room in virtual classrooms (Keengwe, Kidd, 2010; Baran, et al., 2013; Kebritchi, et al., 2017) were crucial in this respect: "The negative connotations of risk-taking and making mistakes while learning to teach online seem to have been mitigated by a combination of affective factors such as humility, empathy, and even optimism" (Maile Cutri, et al., 2020, p. 523). See also Stafford, 2020.

Between November 2020 and January 2021, we carefully evaluated available teaching tools, drafted the programme, collected instructional materials such as texts, videos, introductory lessons, planned the course activities, shared basic information with the colleagues in charge of the doctoral programmes, arranged the communication material,[6] and finally chose the appropriate technology to deliver our course.

To promote collaborative practice and to stimulate conversation among the students as well as between the students and the teachers the course approach mostly relied on synchronous online teaching. The medium adopted was web videoconferencing for it provided us with the most classroom-like virtual environment,[7] as we experienced and tested during the pandemic emergency. Therefore, we not only organised a common virtual room open to the whole class according to the course schedule, but also set six smaller rooms by topic where groups could meet at any time.[8]

The effectiveness of web videoconferencing in education was placed under scrutiny by Maldonado in his extensive effort to understand the upcoming digital world (Maldonado, 1992; 1997; 2005). His investigation led him to claim – not surprisingly – that this practice would play a crucial role in future education even though videoconferencing was in its infancy at the time of his studies (Maldonado, 1997, pp. 82-83, pp. 127-135). In this respect, especially in recent years, we made considerable steps forward.

In web videoconferencing we share our digital self in a digital space. We interact with others striving to imitate the gestures and the rituals

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6   Thanks to the graphic designer Lorenzo Bigatti/www.lorenzobigatti.xyz.

7   In the early years of online teaching practice, the similarity between videoconferencing and classrooms was analysed (Bernard, et al., 2004). More recent studies confirm that web videoconferencing "appears to provide a more promising learning environment for students to freely collaborate and communicate effectively through different interaction channels" (Al-Samarraie, 2019, p. 132).

8   The effectiveness of the – so called – "breakout room" is underlined by Yanhong Wei and Huili Tang: "Online learning provides a proper framework for collaboration, allowing learners to be split into breakout rooms and assigned teamwork to make decisions and prepare for the virtual plenary presentation" (Wei, Tang, 2022, p. 4). See also Chandler, 2016.

of face-to-face social interaction. The effectiveness of this behavioural strategy seems supported by evidence accumulated in literature.[9] Much work, however, is still required to understand the overall rules of digital interpersonal communication.

Besides the main medium, we set up parallel communication tools, such as e-mail, instant messaging, and a storage system to provide doctoral students with a continuous flow of information and data. Compare to face-to-face, online teaching particularly requires this kind of facility, not only for smoothing the working process, but also for reinforcing the students' community building and the perception of the teachers' "presence" (Anderson, et al., 2001, p. 6; Martin, Bolliger, 2018, p. 218; Cundell, Sheepy, 2018, p. 98). Managing this information network increases teaching workload heavily. Therefore, it usually involves a dedicated instructor. This role is crucial for an effective course management, and requires scrutiny and sensitivity. The teacher doesn't merely share files and instructions, rather s/he acts as coach, facilitator and conflict manager.[10]

The introduction of an instructor mainly devoted to communication is not the only novelty in the teaching staff compared to our previous teaching model. The contributions of external experts in a distance modality only last the time of the webinar, no travel time or staying are required, therefore a talk to students fits much easier in a scholar's busy agenda. To broaden the perspective on Maldonado's work, we decided to act accordingly. Design critics and historians belonging to the younger generation could bring novel interpretations about the topics under scrutiny. University colleagues could discuss the effectiveness, the topicality – and even the legitimacy – of our investigation. Maldonado's pupils could testify to his talent as a teacher, his rigour as scholar, his multifaceted personality. Therefore, we got in touch with several scholars to check for their availability and finally

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9   See note 7.
10   We thank Pierfrancesco Califano who played this decisive role in the course.

scheduled a series of webinars in which they generously shared their ideas with our doctoral students.[11]

Throughout his life Maldonado delved into technology with vigilant attention carefully weighing both social opportunities and risks of any new development. Technology plays a crucial role in online teaching. In fact, the whole education process is filtered by digital tools, which scholars deeply analysed often achieving conflicting results. Commenting on this considerable scientific production needs more elaboration than this short essay allows. Especially because in the context we operated technology was a given. Therefore, we integrated the electronic tools we were provided with according to their function, performance, and potential, without any favour or suspect. The full list comprises the following items:

a) a videoconferencing application with which we implemented a virtual classroom for delivering introductory lessons, plenary sessions of the ongoing work of groups, meetings with guest experts and finally for giving the seminar. The same application was also used to set up "breakout rooms" open to doctoral students at any time for teamworking;

b) a digital repository to archive our library consisting of selected reading from Maldonado's scientific production, essays on Maldonado written by guest experts and other scholars, work instructions, shared working papers, video-recordings of collective discussions, in-course presentations and research material, as well as files about the course organisation and scheduling, and information about the participants;

c) email and instant messaging applications, the first for sharing structured information and communication, the latter for quick feedback and Q&A sessions out of the scheduled class days;

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11 For their participation in the course we sincerely thank: Giovanni Anceschi, Larry Busbea, Medardo Chiapponi, Federico Deambrosis, Stefano Maffei, Ezio Manzini, Emanuele Quinz.

d) collaborative whiteboards, especially used by the students for teamwork and for discussing with the teachers their elaboration on the chosen topic step by step;

e) presentation software for sharing intermediate developments, and final outcomes.

The Course Scheduling

Relying on these premises the course scheduling outlined a path in four steps: a preliminary phase anticipating the course start; a research development phase which constitutes the core-activity of the course; a third phase aiming at organising the seminar, and finally the presentation and the discussion of the research outcomes within the seminar itself.

The preliminary phase represents the main novelty with respect to previous experiences. A call for participants was sent to colleagues in charge of the doctoral programmes on November 2nd, 2020. 59 students enrolled from 12 programmes of 11 universities. The class, therefore, showed promising numbers right from the start. On the one hand, considering that the staff consisted of 3 teachers, the student-instructor ratio was 20 to 1, which is rated more than optimal in literature (Means, et al., 2014), on the other the average number of students per programme was close to the one of the envisioned topics, so that the development of almost all the topics could involve representatives of each programme.

Transforming promising numbers into cohesive working teams, however, proved to be a tough task, since most of the students had never worked together before. The mediating role of the instructor was crucial in this respect. In mid-January 2021 we began sharing information with the students about the course programme, the methodology, the scheduling and the expected outcomes. Especially we focused on the six lines of research on which the doctoral students were expected to work, asking them to indicate preferences that could help us setting up the teams. Working on the preferred topic, in fact, would

have certainly stimulated an active and fruitful collaboration among the participants in each team.

To introduce Maldonado to the doctoral students we suggested them to read *Arte e artefatti*, which summarises his work in the form of an interview-balance, and is also his last published book. Furthermore, we gradually uploaded texts by and about Maldonado to the online repository. This material had the dual purpose of guiding doctoral students in choosing their topic, and forming a solid basis for the subsequent research work. At the end of the preliminary phase 6 research teams fairly representing the doctoral programmes and the students' expectations were ready to start.

On February 19th 2021, the course began. The three teachers gave introductory lessons, which outlined Maldonado's profile, his early years as militant artist in Argentina, and the overall course programme and aims.[12] Maldonado himself actually contributed to the opening session. We were lucky enough as to discover an unpublished video-interview of 2012 in the Politecnico di Milano archive, which was projected at the end of the first day.[13]

The course, then, took place on a weekly basis. The meetings involved the class alternatively in checking research development and in debating with guest experts. Most of the research work consisted in reading and critically understanding the chosen topic as it emerged from Maldonado's bibliography and from his commenters. Students had to find out key issues that might cross their own doctoral research, thus providing a personal interpretation of the legacy of Maldonado. In this process they acquired valuable knowledge for the setting and development of their research, especially they familiarised with Maldonado's distinctive approach to critical thinking, which is one of his fundamental legacies.

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12 These lessons were given by Raimonda Riccini, Pierfrancesco Califano and myself respectively.

13 The video-interview consists of one hour of rough material recorded by ImagisLab of Politecnico di Milano under the direction of Marisa Galbiati and Elisa Bertolotti. We thank the authors for sharing.

Meetings were usually organised by topic, especially because after a few weeks the overall group of 10-12 students had split into 2-3 smaller teams each one delving into a defined sub-topic. Teams elaborated on the chosen sub-topic independently, and brought the outcomes of their work to the attention of the teachers, usually sharing their whiteboard on the screen, which plastically displayed the ongoing process or adopting more formal Power Point presentations. The teachers basically focused on listening and understanding the issues at stake facilitating discourse and encouraging students to probe their assumptions (Anderson, et al., 2001, p. 6; Baran, et al., 2011, p. 426). The teachers could also recommend meaningful examples, additional resources, and effective research tools. They rarely questioned the whole process, rather, they intervened mainly to clarify the meaning of sources and to prevent misunderstanding.

Plenary sessions addressed class issues such as methodological and organisational ones and also served to verify the effective development of the elaboration process. In the distance learning mode these sessions played a crucial role for community building. Therefore, their scheduling concentrated in the initial and final part of the course and included intermediate monthly meetings as well. In fact, most of the final seminar organisation was set up in plenary sessions. For the rest of the course, they hosted meetings with guest experts.

As we anticipated, to stimulate and enrich the debate, we made use of the contribution of several guests who generously shared their ideas on the work and legacy of Tomás Maldonado. Their considerations affected, explicitly or implicitly, the proceeding and final outcomes of the course. To link effectively the talks of guests to the work of students, we asked each speaker to reflect on a given keyword which addressed the disciplinary debate in general and Maldonado's studies in particular.[14] Moreover, we accurately set up these meetings. Texts by the authors were uploaded to the repository in advance and we

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14 The six keywords, tailored on the role of each guest in the course development were: "utopia" (F. Deambrosis), "object" (E. Quinz), "environment" (L. Busbea), "method" (S. Maffei), "knowledge" (M. Chiapponi and G. Anceschi), "design" (E. Manzini).

recommended that the students prepare pertinent questions not only to encourage lively debate but also to provide them with meaningful indications on how to develop both the course tasks and their doctoral research.

On March 26th, after six weeks, the course was halfway through. Teams had sufficiently delved into the topics and framed the corresponding sub-topics so that they could sketch an overall picture of the final seminar. In previous years this task would involve many issues dealing with the physical world, such as logistics, accommodation of guests, printing matters, and catering. The distance mode scratched most of them out. The few remaining decisions concerned the organisation and scheduling of the day, the role and sequence of the speakers, the choice of the discussants. Nevertheless, organising the online final seminar proved to be a challenging assignment.

The students first attempted to redefine the seminar as a whole evaluating different sequencing of the speakers, suggesting alternative patterns of interactions between speakers, discussants and the audience, and extending the duration of the seminar over more days to expand on the course outcomes. All of these proposals proved to be unrealistic not only because they required careful testing but also because online interaction, as far as we have experienced, calls for precision and conciseness.

Students then focused on the choice of discussants which required long careful scrutiny, especially matching the appropriate profile to the issues raising from the research outcomes. Once we fixed the actors, the content and the schedule of the seminar, additional time was spent checking the efficacy of communication. The class had a fortnight in rehearsal, carefully verifying the layout and the correctness of Power Point presentations, the fluency of the speeches as well as their appropriate sequence and timing.

Throughout this process the role of the teachers slowly shifted from counseling to supervising. The urgency of decision-making prevailed over pedagogical premises as sometimes happened also in our previ-

ous face-to-face teaching experiences. Choices, however, were always shared and deeply discussed in the class before taking any resolution.

Finally, on May 14th, the class gave the seminar witnessed by this book, or we may say that the book is an unpredicted additional workload suggested by the success of the seminar itself, although many students had asked for publishing a book even before the course ended.

The index of the publication conforms to the content and sequencing of the presentations. The titles of the six main research topics were carefully redefined and broadened into 16 key issues[15] to put the legacy of Tomás Maldonado into the new perspective the class was eager to share with the audience.

The webinar was opened by the dean of the School of Design and by the director of the PhD programme in Design of Politecnico di Milano[16] which virtually hosted this initiative. Then teachers appeared on the screen to outline the motivation and the expected outcomes of the final seminar. After the presentations, both in the morning and in the afternoon session, acknowledged scholars contributed to a lively round table not only by providing the class with insightful and constructive comments but also by filling the screen with their appealing bookshelves.[17]

The pandemic emergency was undoubtedly crucial in the choice of switching to distance learning. Comparing our experience to similar ones in the same period, however, is difficult. Most of them outline the rapid adaptation to the new condition of typical content-based learning focusing on issues such as keeping students focused on the task or assessing knowledge acquisition. Also, many scholars underline the relevance of teacher-student interaction, especially the dialogue be-

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15 There were 17 presentations in the seminar, unfortunately one group resigned from writing in this book.

16 We sincerely thank Luisa Collina and Paola Bertola for introducing to the audience the School and the PhD programme respectively.

17 For their contribution to the seminar we sincerely thank: Rocco Antonucci, Pier Luigi Capucci, Cristina Chiappini, Riccardo Falcinelli, Davide Fornari, Carla Langella, Tatiana Mazali, Alessandro Tartaglia, Salvatore Zingale.

tween the two. Among the many, we may find similarities with the extensive/intensive online learning approach. This approach adopts "compulsory pre-session student-led group discussions which are documented and [shared with] the lecturer" (Bryson, Andres, 2020, p. 619), and it has proved effective for classes comparable in size to ours. "Extensive online learning experiences involve the curation of resources to support self-guided learning and [the subsequent] intensive learning experiences" (Bryson, Andres, 2020, p. 616), which "revolve around online engagement with the academic(s) and other students in real-time as part of the co-creation of experiential learning experiences" (Bryson, Andres, 2020, p. 618). Some scholars describe massive online seminars, which do not involve doctoral students (Chia-En Teng, et al., 2012). Not many others seem to share the path we followed.

The Questionnaire Outcomes

As common practice at the end of a course, we drafted a survey aimed at checking whether the learning experience fulfilled students' expectations. The short questionnaire (see Appendix) was developed on the basis of the "students' opinion survey" usually distributed to the students of Politecnico di Milano. The original 20 items were reduced to 11 and modified to fit the setting of the course. Questions aimed at testing the effectiveness of preparatory materials, online teaching, teamworking, guests' contribution, and the overall satisfaction of the participants. The students were asked to rate items using a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Three open questions were added to find out students' opinion especially on the course management, the quality of interaction, and to seek for suggestions to improve the learning experience.

A few days before the seminar took place, we sent the whole class the survey by email. Only 7 students replied on that occasion, very likely because respondents to an email were identifiable. Therefore,

we sent the survey again one month later using Google Form, which let the students answer anonymously, and we collected 25 responses.[18]

The total number of respondents to the two questionnaires was 32, that is almost 60% of the whole class, a significant rate for the analysis. In both cases, most of the students were extremely supportive so much so that the average score for each item was 4. Such a successful result requires deep scrutiny, and decimals may help, in this respect. The preliminary work was rated the highest (4,64)[19] confirming the efficacy of our effort. The overall satisfaction about the course was high as well (4,08), so we can reasonably think this experience can become a model for further educational initiatives. The effectiveness of the teacher/student interaction was acknowledged by everyone (4,24), even if our contribution was mostly perceived as prescriptive (4,04). Some critical issues were raised about teamworking (3,84), therefore the goal of effective distance interaction requires additional work. Similarly, the distance learning modality, which scored the – relatively – lowest rate (3,76), requires careful scrutiny. We made all our effort to overcome the prevailing opinion that online "a sense of being connected to a learning community is weak" (Kuong, 2014, p. 1004). The nostalgia for face-to-face learning, however, seems persisting.

Among the many positive – or extremely positive – responses, there is only one doctoral student expressing deep dissatisfaction, substantially about the unbalance between workload and final outcome: "We worked three months – s/he claims – for speaking individually 3 minutes, in the final seminar!". Workload was undoubtedly heavy, as many others underlined without complaining. The statement, however, shows the commitment and expectations of a typically self-centred personality, which teachers should have considered. In the seminar, teams presented the outcomes of a collaborative work in a collaborative manner – like a choir. Each topic was given about 20 minutes, an amount of time totally effective and suitable to the seminar's goals.

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18   55 students of the 59 enrolled effectively completed the course and took part in the seminar with a drop-out rate of 9%.
19   Reported rates come from the anonymous respondents.

Still the student thinks this choice doesn't provide her/him with any personal contentment.

Open questions provided us with more clues to assess the whole experience. They focused on four issues: information, management, teamwork, and interaction. Many students asked for a comprehensive, syllabus-like programme carefully detailing expected outcomes, scheduling, and workload. Such a programme should have been provided before enrolment so that students could evaluate whether joining the course or not. They also suggested the adoption of precise instructions specifying contents and formats (template, layout etc.) both for intermediate delivery and the final seminar which, from our perspective, is indeed a cultural shift, rather than the suggestion of a good teaching practice. In fact, providing the students with so strict prescriptions would reduce their capability not only to design but also to think.

With respect to the course management students suggested to expand the introductory part not only for sharing more information about Maldonado, and the six research topics – that is about the course content in general – but also for getting acquainted and facilitating team building. Increasing team-reviews in this initial part would also serve to check teachers' expectations. Typically, all these suggestions involve online interaction, therefore they should be carefully scrutinised. Students also complained about workload, which they estimated considerably heavy and only partially compensated by the value of research and the relevance of the seminar.

Teamwork was indeed a crucial topic crossing the issues of both workload and interaction. Students suggested smaller groups of 5/6 people, which are much easier to manage, and an increase of synchronous learning with respect to asynchronous one, that is concentrating teamwork in the virtual classroom rather than at home. They also criticised the process of splitting groups by topic into smaller ones by sub-topic, especially because they were asked to join together again for the final seminar, which required additional work.

Interactions involved student to student, teacher to student and guest to student relationship. Peer-to-peer learning was strongly recommended by the students although they admitted that the virtual environment exacerbated group dynamics. Peer review should involve the whole class and more time should be spent in this practice rather than in conventional teacher to students review. Partially contradicting their colleagues claiming precise instructions some students also requested more time for independent work and speculation out of the teachers' guidance. Guest speeches were rated highly valuable therefore many students focused on this experience recommending more accuracy in providing the class with information about the guest and instructions on how managing the debate. Someone also suggested leaving the guests free in the choice of topics to explore.

Significantly, some students complained that they were not formally thanked by the teachers for their efforts in organising the final seminar. The thing is that by the end of the course we were as exhausted as the students. This essay, however, is a good opportunity to correct this impoliteness. We believe everyone performed excellently at every stage of the learning process. Furthermore, their dissatisfaction clearly demonstrates that the course was fully successful in recreating the expectations, the rituals, and the social conventions of a face-to-face learning environment. Like any experimental training experience, however this too can be improved and we will move in this direction.

Appendix

The result of survey: anonymous respondents (25)

Category	Items	Responses					Average rating	Overall rating
		SD	D	N	A	SA		
		1	2	3	4	5		
Preparatory work	Was the preparatory material beneficial?			1	7	17	4,64	4,27
	Was the preliminary work (team building, programme, etc.) effective?	1	2	4	7	11	4,00	
	Was the reading of the book *Arte e artefatti* helpful?		1	4	10	10	4,16	
Course development	Was the distance learning course set up satisfactorily?	1	1	6	8	3	3,88	3,82
	Would you replicate the same format in other courses?	1	4	3	9	8	3,76	
Teamwork	Was the teamwork carried out satisfactorily?	1	2	5	9	8	3,84	3,95
	Did teams work independently? or	1	1	3	13	7	3,96	
	Did teams work under the guidance of the teachers?		1	4	13	7	4,04	
Teachers' contribution	Were the teachers' crits helpful?	1	1	4	4	15		4,24
Experts' contribution	Were the conversations with			6	12	7		4,04
Overall satisfaction	What is your overall satisfaction level?	1	1	2	12	9		4,08

The result of survey: identified respondents (7)

Category	Items	SD 1	D 2	N 3	A 4	SA 5	Average rating	Overall rating
Preparatory work	Was the preparatory material beneficial?			1	3	3	4,29	4,53
	Was the preliminary work (team building, programme, etc.) effective?				4	3	4,43	
	Was the reading of the book *Arte e artefatti* helpful?				1	6	4,86	
Course development	Was the distance learning course set up satisfactorily?				3	4	4,57	4,43
	Would you replicate the same format in other courses?			1	3	3	4,29	
Teamwork	Was the teamwork carried out satisfactorily?		2	1	4		4,29	4,11
	Did teams work independently? or			1	4	1	4,00	
	Did teams work under the guidance of the teachers?	2			3	2	4,04	
Teachers contribution	Were the teachers' crits helpful?				1	6		4,86
Experts contribution	Were the conversations with experts helpful?		2	1	4			4,29
Overall satisfaction	What is your overall satisfaction level?				3	4		4,57

SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Bibliography

Anceschi, Giovanni, *Il personaggio*, in AA. VV., *Ad honorem: Achille Castiglioni, Gillo Dorfles, Tomás Maldonado, Ettore Sottsass, Marco Zanuso*, Politecnico di Milano, Milano 2001, pp. 159-172.

Anderson, Terry, Liam Rourke, Randy D. Garrison, and Walter Archer, *Assessing teaching presence in a computer conferencing context*, in "Journal of Asynchronous Learning Networks", V, 2, September 2001, pp. 1-17, https://olj.onlinelearningconsortium.org/index.php/olj/article/view/1875/706.

Baker, Will and Julie Watson, *Mastering the Online Master's: Developing and Delivering an Online MA through a Dialogic Based Framework*, in "Innovations in Education and Teaching International", LI, 5, 2014 pp. 483-496, DOI: 10.1080/14703297.2013.796712.

Baran, Evrim, Ana-Paula Correia and Ann Thompson, *Transforming online teaching practice: critical analysis of the literature on the roles and competencies of online teachers*, in "Distance Education", XXXII, 3, November 2011, pp. 421-439, DOI: 10.1080/01587919.2011.610293.

Baran, Evrim, Ana-Paula Correia and Ann Thompson, *Tracing Successful Online Teaching in Higher Education: Voices of Exemplary Online Teachers*, in "Teachers College Record", CXV, 030306, March 2013, 41 pages.

Bawane, Jyoti and Michael J. Spector, *Prioritization of online instructor roles: Implications for competency-based teacher education programs*, in "Distance Education", XXX, 3, November 2009, pp. 383-397, DOI: 10.1080/01587910903236536.

Bernard, Robert M., Yiping Lou, Philip C. Abrami, Lori Wozney, Evgueni Borokhovski, Peter Andrew Wallet, Anne Wade and Manon Fiset, *How does distance education compare with classroom instruction? A meta-analysis of the empirical literature*, in "Review of Educational Research", LXXIV, 3, Fall 2004, pp. 379-439.

Boling, E. C., M. Hough, H. Krinsky, H. Saleem and M. Stevens, *Cutting the distance in distance education: Perspectives on what promotes pos-*

itive, online learning experiences, in "Internet and Higher Education", XV, 2, March 2012, pp. 118-126, DOI: 10.1016/j.iheduc.2011.11.006.

Bryson, John R. and Lauren Andres, *Covid-19 and rapid adoption and improvisation of online teaching: curating resources for extensive versus intensive online learning experiences*, in "Journal of Geography in Higher Education", XLIV, 4, 2020, pp. 608-623, DOI: 10.1080/03098265.2020.1807478

Browne, Elizabeth, *Structural and pedagogic change in further and higher education: A case study approach*, in "Journal of Further and Higher Education", XXIX, 1, 2005, pp. 49-59, DOI: 10.1080/03098770500037754.

Chandler, Kathy, *Using Breakout Rooms in Synchronous Online Tutorials*, in "Journal of Perspectives in Applied Academic Practice", IV, 3, 2016, pp. 16-23.

Chia-En Teng, Daniel, Nian-Shing Chen, Kinshuk and Tommaso Leo, *Exploring students' learning experience in an international online research seminar in the Synchronous Cyber Classroom*, in "Computers and Education", 58, 2012, pp. 918-930, DOI: 10.1016/j.compedu.2011.10.018.

Crawford, Joseph, Kerryn Butler-Henderson, Jürgen Rudolph, Bashar Malkawi, Matt Glowatz, Rob Burton, Paola A. Magni and Sophia Lam, *COVID-19: 20 countries' higher education intra-period digital pedagogy responses*, in "Journal of Applied Learning and Teaching", III, 1, April 2020, pp. 9-28, DOI: 10.37074/jalt.2020.3.1.7.

Cundell, Alicia and Emily Sheepy, *Student perceptions of the most effective and engaging online learning activities in a blended graduate seminar*, in "Online Learning", XXII, 3, September 2018, pp. 87-102, DOI: 10.24059/olj.v22i3.1467.

Devecchi, Alice and Luca Guerrini, Empathy for Resilience, in Jonna Häkkilä, et al. (edited by), *Around the Campfire – Resilience and Intelligence. Cumulus Conference Proceedings*, University of Lapland, Rovaniemi (Fl.) 2019, pp. 594-607.

Guerrini, Luca, *Students at the centre of the action*, in "diid – disegno industriale/industrial design", XVIII, 71, 2020, pp. 160-167, https://www.diid.it/archivio/71.pdf.

Hodges, Charles, Stephanie Moore, Barb Lockee, Torrey Trust and Aaron Bond, *The Difference between Emergency Remote Teaching and Online Learning*, in "EDUCAUSE Review", Friday, March 27, 2020, https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning.

Kebritchi, Mansureh, Angie Lipschuetz, and Lilia Santiague, *Issues and Challenges for Teaching Successful Online Courses in Higher Education: A Literature Review*, in "Journal of Educational Technology Systems", XLVI, 1, 2017, pp. 4-29.

Keengwe, Jared and Terry T. Kidd, *Towards Best Practices in Online Learning and Teaching in Higher Education*, in "MERLOT Journal of Online Learning and Teaching", VI, 2, June 2010, pp. 533-541.

Kuong, Hou Chun, *Enhancing online learning experience: from learnings' perspective*, in "Procedia – Social and Behavioral Sciences", 191, 2014, pp. 1002-1005. DOI: 10.1016/j.sbspro.2015.04.403.

Maile Cutri, Ramona, Juanjo Mena and Erin Feinauer Whiting, *Faculty readiness for online crisis teaching: transitioning to online teaching during the COVID-19 pandemic*, in "European Journal of Teacher Education", XLIII, 4, 2020, p. 523, DOI: 10.1080/02619768.2020.1815702.

Maldonado, Tomás, *Arte, educazione, scienza – verso una nuova creatività progettuale*, in "Casabella", XLII, 435, April 1978, pp. 10-16.

Maldonado, Tomás, *Reale e virtuale* [*The Real and The Virtual*], Feltrinelli, Milano 1992.

Maldonado, Tomás, *New developments in Industry and the Training of the Designer (1958)*, in Joan Ockman, (edited by), Architecture Culture 1943-1968, Rizzoli, New York 1993, pp. 288-299.

Maldonado, Tomás, *Critica della ragione informatica* [*Critics of Informatics Reasoning*], Feltrinelli, Milano 1997.

Maldonado, Tomás, *Frammenti*, in AA. VV., *Ad honorem: Achille Castiglioni, Gillo Dorfles, Tomás Maldonado, Ettore Sottsass, Marco Zanuso*, Politecnico di Milano, Milano 2001, pp. 177-204.

Maldonado, Tomás, *Memoria e conoscenza: sulle sorti del sapere nella prospettiva digitale* [*Memory and Knowledge: on the Fate of Knowledge in the Digital Perspective*], Feltrinelli, Milano 2005.

Maldonado, Tomás, *Arte e artefatti* [*Art and Artefacts*], Feltrinelli, Milano 2010.

Martin, Florence and Doris U. Bolliger, *Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment*, in "Online Learning", XXII, 1, January 2018, pp. 205-222, DOI: 10.24059/olj.v22i1.1092.

Mazur, Eric, *Peer Instruction: A User's Manual*, Prentice Hall, Upper Saddle River (N.J.) 1997.

Means, Barbara, Marianne Bakia and Robert Murphy, *Learning Online: What Research Tells Us about Whether, When and How*, Routledge, New York 2014.

Olofsson, Anders D., *Participation in an Educational Learning Community*, in "Educational Technology and Society", X, 4, 2007, pp. 28-38.

Revans, Reginald W., *The origin and growth of action learning*, Chartwell-Bratt, Bromley (U.K.) 1982.

Revans, Reginald W., (edited by Mike Pedler), *ABC of action learning*, Gower, Farnham (U.K.) 2011.

Sennett, Richard, *Together: The Rituals, Pleasures, and Politics of Cooperation*, Allan Lane/Penguin Books, London 2012.

Stafford, Vanessa, *EdTech review: Teaching through Zoom – what we've learned as new online educators*, in "Journal of Applied Learning and Teaching", III, 2, 2020, pp. 150-153, DOI: 10.37074/jalt.2020.3.2.14.

Wei, Yanhong and Huili Tang, *Digital Effectiveness in Video Conference Methods on Internet Learning Environments of Higher Education*, in "Hindawi – Journal of Mathematics", Article ID 6996407, 2022, p. 4, DOI: 10.1155/2022/6996407.

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Fabrizio Formati received his bachelor's degrees in Mechanical Engineering in 2015 at the Second University of Naples and in Design for Innovation in 2018 at the University of Campania Luigi Vanvitelli. He is a PhD student at the Department DI (Department of Engineering) of the University of Campania Luigi Vanvitelli. In 2018 he started his PhD in Environment Design and Innovation at the University of Campania Luigi Vanvitelli in Aversa. His thesis focuses on the deve-

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Stefano Gabbatore graduated in 2015 in Design and Visual Communication with a thesis entitled Archetype of a high performance steering wheel under the supervision of prof. Claudio Germak. He then moved to Florence, where he continued his studies with a master's degree in Design and graduated with a thesis entitled *ErgoTech SmartMove*, supervised by prof. Francesca Tosi. With a background that over the years has turned and consolidated on ergonomics and user experience, he worked as a scholarship holder at the Politecnico di Torino, again under the guidance of prof. Germak, from 2018 to 2020 before starting his PhD in Management, Production and Design in November of the same year. *White X* (2021); with Xavier T. Ferrari, et al., *COMMON SPACES. University scenarios for the return to a-normality* (2021); with Lorenza Abbate, et al., *Here. Human Engagement in Robotics Experience* (2020).

Antonello Garaguso is PhD student at the School of Architecture and Design of Unicam, he is developing a thesis in the Innovation Design curriculum. After completing his master's degree, he started working in the field of communication and graphic design, collaborating in university projects as a scholarship holder and carrying out some support activities for teaching. His PhD research investigates the role of design in the design of digital archives as online devices for the valorisation and promotion of companies' cultural heritage. With Carlo Vinti, *Il design per la valorizzazione del patrimonio aziendale: il caso dei marchi storici Averna e Cynar del Gruppo Campari* (2020); *Symbiotic short circuits* (2019); with Carlo Vinti, *Averna. A Sicilian and Italian story* (2018).

Luca Guerrini is associate professor at Politecnico di Milano where he has worked since 1993. A trained urban designer, he has carried out applied research and projects in the field of transportation and envi-

ronmental design, interior and spatial design, design for cultural heritage. His studies focus on the concept and perception of space in the relationship between design and the arts. He teaches Interior Design and Arts and Languages of the Present at the School of Design. Since 1999 he has been a faculty member of several PhD programmes and is a former Director (2015-2017) of the PhD programme in Design. He is in charge of the joint Politecnico di Milano and Tsinghua University of Beijing degree programme in Design. Since 2018 he is Dean's delegate for admission test of the School of design. He has lectured on MA and PhD Courses in Italy and abroad. Design and architecture exhibition curator, he has acted as consultant to the National Museum of Architecture in Ferrara, Italy (2000-2006), and has taken part in national and international architecture competitions. Author of books, essays, and papers presented in national and international conferences. His current scientific production focuses on design pedagogy, and on design research methodologies. *Students at the centre of the action* (2020); *Towards the future. Insights on research and training* (2019); *New Hospitality: investigating the meaning of hybrid* (2019); with Alice Devecchi, *Empathy for Resilience* (2019); *Envisioning the future: report on a first year design-studio project* (2018); with Paolo Volonté, *Dialogues on Design. Notes on Doctoral Research in Design 2018* (2018).

Alessandro Ianniello is a product designer for Innovation and a PhD student in Design at Politecnico di Milano, where he also works as research fellow and tutor for bachelor and master's degree courses. He is part of the Environmental Design Multisensory Experience (EDME) Interdepartmental Laboratory, dealing with subjects such as extended realities and immersion. He has also been invited as a lecturer in various private universities. His research is focused on imagination, and on its role in fostering transformations towards responsible and just futures. He is also tackling topics such as sustainable and digital tourism, experience design and cultural heritage. With Giuseppe Amoruso, Stefania Palmieri, *Digital Strategy to Enhance Jordanian Tourism Sector: A Post Pandemic Gap Analysis* (2021 – under review); with

Stefania Palmieri, Mario Bisson, Alessio Righi, *A sport project and its future applications: how to implement speculative design to fulfil users needs* (2021); with Stefania Palmieri, Mario Bisson, *Environmental Design Multisensory Experience. Integrated space for simulation activities* (2020).

Ilaria Lombardi is graduated in Architecture with honor at the University of Campania Luigi Vanvitelli, qualified as an architect in 2020, Competent Technician in Environmental Acoustics since 2019 (ENTECA). PhD student of Environment, Design and Innovation course of the XXXVI CYCLE, at the Department of Engineering of the University of Campania Luigi Vanvitelli, in the area of Industry 4.0 and human-machine interaction. Author of 24 publications in the field of applied acoustics. With Antonella Bevilaqua, Giuseppe Ciaburro, Gino Iannace, Amelia Trematerra, *Acoustic design of a new shell to be placed in the Roman amphitheater located in Santa Maria Capua Vetere* (2022); with Gino Iannace, Amelia Trematerra, *Effects of nightlife noise in a city center* (2021); with Silvana Sukaj, Giuseppe Ciaburro, Gino Iannace, Ilaria Lombardi, Amelia Trematerra, *The Acoustics of the Benevento Roman Theatre* (2021).

Fabiana Marotta is transdisciplinary designer and currently PhD candidate in Design at University of Naples Federico II (Architecture Department). Her current research focuses on the relevance of the political dimension in contemporary design, intercepting the complex relationships that exist between design and politics in order to build new theoretical frameworks in which to reconfigure the social and cultural dynamics of our time. *Diciotto storie per una controstoria della cultura tecnologica del progetto* (2022); with Marina Block and Massimo Perriccioli, *From Emergency to Emergence: re-think design approach in a transitionage* (2021).

Elisa Matteucci is PhD student and a design researcher at the Design for Sustainability Lab in the University of Florence. She has been part of the Design for Sustainability Lab research team since 2019 where

she is a designer and curator. Specifically, she works on several exhibitions in collaboration with MIDA (Mostra dell'Artigianato di Firenze) such as Craft 4.0, new perspectives of making. She mainly deals with communication design and data design. Actually she is working on research projects such TiAmbienta (Tecnologie Intelligenti per gli Ambienti di Vita), Prismamed (Piano Rifiuti e Scarti in Mare da pesca, acquacoltura e diporto nel Mediterrane0) and Robocoop (Realtà aumentata, storytelling evoluto, blockchain nel processo di innovazione di innovazione circolare e tecnologica delle cooperative sociali)

Matilde Molari, MSc in Systemic Design, is a PhD student at the Department of Environmental, Land and Infrastructure Engineering (DIATI) of the Politecnico di Torino (Italy). She carries out research in the Applied Ecology Group, dealing with vertical greenery in outdoor urban contexts. She investigates environmental and social impacts deriving from re-naturalization projects. With Mariangela Francesca Balsamo, *Ri-costruire una natura contemporanea* (2022); with Elena Comino, Laura Dominici, *City that embraces nature. Designing with vertical greenery* (2021).

Giovanna Nichilò is an architect and exhibition designer. Her professional experiences include works in Exhibition Design for scientific museums, fairs and events; Creative Industry; Digital Fabrication and Design of teaching activities for STEAM matters; Grant Research in Inclusive Museum Design at Laboratory of Ergonomics & Design at the University of Florence. Since 2020 she is a PhD student in Science of Design at Iuav University of Venice and investigates aspects of space-user interaction in Exhibition Design with a focus on spatial responsive and interactive applications in medical museums. With Gabriele Pontillo, *Site-Responsive. Critical of the Interactive Environments in Exhibition Design* (2022); with Francesca Tosi, Antonella Serra, Alessia Brischetto, *Asking Users. Questionnaires as Indirect Observation Tools in Human-Centred Design Approach* (2021).

Monica Oddone is PhD student in Management, Production and De-

sign and MSc in Ecodesign at Politecnico di Torino. She complements her research work with the design of honest, human and environmentally friendly products and services, also achieving international recognition and awards. Her PhD research focuses on the definition and development of new products and strategies, suggested by design approach, to enhance cultural value and local excellence, with particular reference to the valorisation of the identity of Politecnico di Torino through merchandising. With Doriana Dal Palù, Beatrice Lerma, Marco Bozzola, *Il wayfinding nei luoghi della cultura. Un progetto per il Castello del Valentino* (2020); with Irene Caputo, Marco Bozzola, *Design and Cultural Sites: new signage methods and languages for fruition, accessibility and storytelling* (2020).

Angela Denise Peri, naval architect, yacht and ship designer. PhD candidate in Naval and Nautical Design, University of Genoa. Her MSc thesis, awarded with honours, is focused on the project of an electric hybrid solar catamaran for passenger transport, with particular attention to issues related to sustainability and accessibility by people with physical disabilities and sensory-perceptual alterations. Her research activity is focused on the definition of design guidelines applicable to cruise ships in the post Covid-19 era, with reference to smart materials and contactless technologies. She is paper author and speaker at international conferences and teacher of a professional education course dedicated to the same topics. She holds management training seminars and is co-lecturer at the courses of Construction Science, Psychology for Design and workshops dedicated to the project of cruise ship units and electric vehicles, one of which is held together with Beijing University of Chemical Technology.

Filippo Petrocchi is product designer and PhD student at the University of Ferrara. He is author of scientific paper and lecturer at national and international conferences regarding inclusive and sustainable design. His areas of expertise include: design for elderly, transportation, UX, UI, HMI. Complete the profile several awards and publications at national and international level. *Awareness, compatibility and equa-*

lity as drivers to resilience in sustainable design research (2021); with Giuseppe Mincolelli, Silvia Imbesi, *How Co-design Leads Mobility Innovation Towards a More Inclusive and Senior-Friendly Transportation System* (2021); with Giuseppe Mincolelli, Michele Marchi, Silvia Imbesi, Gian Andrea Giacobone, *Cittadinanza smart thing: Smart objects al servizio di città più attive e inclusive* (2021).

Valeria Piras is a Design PhD student at the University of Genoa. Interested in the constant relationship between design and politics, her research investigates the role of the current design educational context in relation to actual political and social issues, looking at it through the lens of feminist philosophy. *Intersectionality in Visual Design Education* (2021); *CAPS LOCK. Una panoramica sull'ultimo libro di Ruben Pater* (2021); *Discomfort in Visuality* (2021).

Barbara Pizzicato is currently a PhD student in Environment, Design and Innovation at the University of Campania Luigi Vanvitelli. She took a Bachelor Degree in Design and Communication at Politecnico di Torino and a Master's Degree in Design for Innovation (curriculum Ecofashion) at Luigi Vanvitelli. Her field of investigation concerns circular and systemic design with a strong focus on innovative processes and technologies for circularity in the textile field. Among her latest publications: with Maria Antonietta Sbordone, et al., *0_Textile. A Design Research applying Circular Economy in the textile field*; *An Ideal Triangulation in Fashion and Textile: Industry, Academia and Users; Fashion Confronting Unrelated Sectors: The Ideal Model of Manufacturing Symbiosis Between Industrial Systems* (2021).

Gabriele Pontillo is an Italian product designer. In 2019 he obtained a Doctoral Research Fellowship in Environment, Design and Innovation at the University of Campania Luigi Vanvitelli. Main focus of his line of research are parametric design, medical design, and advanced manufacturing – knowledge acquired during his academic path. With Carla Langella, *Fluctuating Intelligence: Bioinspired 3D Printed Design on Textile* (2021); with Carla Langella, Roberta Angari, *Intersection*

Between Design and Science in the Mediterranean Food Landscape (2021).

Raimonda Riccini is full professor at the Iuav University of Venice. She was coordinator of the PhD in Design Sciences (2012-21) and Deputy Director of the Doctoral School (2016-21). In 2013 she conceived and directed Frid. Fare ricerca in design, the national forum of PhDs in design. Hers are the project of the Bembo LS Writing Laboratory and the Bembo OE Editorial House, of which she is editorial director. Co-founder and president (2014-18) of the Italian Association of Design Historians, she directed the journal "AIS Design. History and Research" (2013-21). From 2021 she is president of SID Italian Design Society. (Edit by) Tomás Maldonado, *La speranza progettuale. Ambiente e società*, 2022; *I linguaggi dell'interazione: Olivetti e la Scuola di Ulm*, 2021; *Design e innovazione. Una visione critica in tempi di incertezza*, 2021; (edit by) Tomás Maldonado, *Bauhaus*, 2019; (edit by) Frid 2017. *Sul metodo/Sui metodi. Esplorazioni per le identità del design*, 2018; *Gli oggetti della letteratura: il design tra racconto e immagine*, 2017.

Davide Romanella is architect and PhD candidate in Sustainable Urban Planning at the International School of Advanced Studies in the University of Camerino. He is a member of the EcCoItaly company where he has developed a qualified profile on the management of competitive issues and projects in the sector of urban redevelopment and regeneration of open spaces in the technological and environmental fields. He carries out a doctoral research entitled Post-vernacular architecture, territorial technologies for a distant future focused on the sustainable aspects of architecture, characterized by the concept of "circularity". *Light* (2021); with Federica Ottone, *Una "Nuova Archeologia" per la Ricostruzione dei Paesaggi Colpiti dal Sisma* (2020); with Roberta Cocci Grifoni, Anna Bonvini, Graziano Enzo Marchesani, Paola Tassetti, *Nuovo Rinascimento* (2020).

Beatrice Rossato is an Italian fashion designer. She is a PhD student in Design at the Design Department of Politecnico di Milano. Her research focuses on the relationship between jewellery design and digital

technologies, particularly on the dematerialization and virtualization of body equipment and on learning tools to design digital accessories. With Alba Cappellieri, Livia Tenuta, Susanna Testa, *Digital Filters: A New Way to E-Wear Jewellery* (2021); with Livia Tenuta, Susanna Testa, *An Example of Innovative University Teaching and Learning: the Fashion-Tech Model of Integration* (2021).

Jing Ruan is a Design PhD student at the University of Florence. Her research explores sustainable and creative design solutions for enhancing the competitiveness of local agriculture based on innovation projects in China and Italy. Since 2019 she has served as deputy secretary-general of Wuhan Industry Association and Design Committee of Hubei Packaging Federation, responsible for organizing exhibitions, competitions, project cooperation. She has been a teacher in the Visual Communication Design Department of Wuhan Technology and Business University from 2005 to 2018. *Research on value conversion from agricultural products to creative products* (2019); *To explore the Italian city of creative visual design* (2017); *Personality vivid bottle and jar – on the composition of the beauty of Morandi painting* (2015).

Manuel Scortichini is PhD student in Innovation Design at the International School of Advanced Studies, University of Camerino. Since 2018 he has been collaborating in teaching as tutor in university courses, as correlator of three-year theses and in the organization of exhibitions, conferences and educational seminars at the School of Architecture and Design Eduardo Vittoria in Ascoli Piceno. His PhD research explores the relationship between new digital technologies and communication systems in museums, with particular attention to new strategies for interactive exhibition design. With Enrica Lovaglio, *Guerrilla art in the city: Urban and social revitalization* (2021); with Enrica Lovaglio, *La città come opificio sperimentale* (2021); with Giuseppe Losco, Davide Paciotti, Carlo Vinti, *The fifth dimension of interaction design: conversation with Gillian Crampton Smith and Alessandro Masserdotti* (2021).

Elettra Scotucci is visual communication and graphic designer and PhD student at Sapienza University of Rome. Her main research topics are typography and graphic design history, and the relationship between design and new craft in the particular field of the contemporary production of wooden typefaces for letterpress printing. Together with his PhD colleague Andrea Vendetti, she runs a letterpress printing studio in Rome, Slab, which is also a key spot for historical researches, experimentation and educational projects. Currently she is Teaching Assistant to professor Daniele Capo in the Type Design course, both in the English and Italian curricula, at the DCVM master's degree, at Sapienza University. With Andrea Vendetti, *United in isolation. An online letterpress festival* (2021).

Nicoletta Sorrentino graduated in Architecture in 2014 from the University of Genoa. From 2017 she collaborates, first as Cultore della Materia and then as assistant, to the courses of Design History and Fundamentals of Representation for Industrial Design in the Department of Architecture and Design of the same university. Since 2019, she has been enrolled in the Phd Course in Sciences and Technologies of the Sea, developing her thesis on graphics and communication onboard large passenger boats. Among her most recent publications, *Communication, orientation and wayfinding aboard great ships: towards an integrated and user-centred system* (2020); *The Design of Spaces for Young Children and Preschool in Emergency* (2019); with Luisa Chimenz, *For your pleasure only* (2018) and *Known for Unknown. Images from the Past for the Present Future* (2017). She collaborated on research for the book *Handmade in Italy* by Claudio Gambardella (2020).

Giovanna Tagliasco is designer and PhD student in Design at the Department of Architecture and Design of the University of Genoa, Italy. She is researching the effectiveness of tools in design and service design projects. She works on how to visualize processes. *Service design: la co-progettazione nella ricerca che sconfina. Confini e contesti* (2021); with Marialuisa Taddei, *Zoom in e zoom out sui comportamenti: risorse di progetto* (2020); *"Graphicizing" Service Design* (2020).

Margherita Vacca is architect, PhD student in Sustainability and Innovation for the Design of the Built Environment and Product System (curriculum Design) at the University of Florence. Her research aims to reflect on the complex system of social realities belonging to the Third sector system, trying to understand how design can exploit its connective and maieutic capacity to promote the exchange and acquisition of necessary skills for the challenges of future scenarios. With Fabio Ballerini, *La cura del Design: nuove forme di inclusione socio-professionale dei migranti. Processi di codesign per la valorizzazione del dialogo interculturale* (2021); with Marco Marseglia, Francesco Cantini, Elisa Matteucci, Alessio Tanzini, Giulia Pistoresi, *Design con il Mediterraneo. Nuovi metabolismi materiali e immateriali, intrecciando traiettorie tra saperi, miti, mare e racconti* (2022); with Irene Fiesoli, Fabio Ballerini, *Togetherness. Design con le imprese sociali* (2022).

Angelica Vandi is PhD Student in Design and MSc in Design for the Fashion System at Politecnico di Milano. During her career, she took part in the Design Management joint program with Jefferson University, Philadelphia. As a research fellow, she followed the development of the "DigiMood for CCIs" European founded project. Her PhD research focuses on rethinking the ways of modelling, preserving and transferring fashion cultural reservoir making use of new media technologies, understanding how the digital sphere could be employed to augment the tangible and intangible value of fashion heritage. *Fashion Design Education Towards Twin Transition. Developing multidisciplinary skills for future professionals* (2022); with Paola Bertola, *Global Fashion Conference* (2021); with Paola Bertola, *Designing Interactive Narratives for the Fashion System. MOOC and blended learning in a transdisciplinary design module* (2021); with Ilaria Mariani, *Head '21, 7th Educational Conference on Higher Education Advances.*