2. Design as pluriversality: the translational territory where practice is plural

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2.1 A background to professional pluralism

Translating and integrating knowledge from other disciplines is, to a considerable extent, one of the crucial phases which has contributed to the building process of so-called design research, a concept that continues to remain open to many definitions.

Many forms of design research imply the translation of diverse fields of knowledge for the purposes of design implications. The general issue of giving form and validity to an inter-disciplinary or cross-disciplinary design competence, to be applicable in operational terms, is not new: however it has been only partially taken on board and to an even lesser extent resolved. The many decades of expansion of communication systems and technological innovation have generated a radical reconfiguration and widening of the baggage of design skills. An order of considerations of the greatest relevance, and one which can be referred to as refoundational, still revolves around the translation of those skills which tend to *pluri-qualify* the nature of the design profession.

It is largely agreed that – as Schön's seminal reflection anticipated – leading professionals may recognize when a new awareness of a complexity is challenging the skills and techniques of traditional expertise (1983, p. 14). There is no substantial novelty in recognizing the plural divergence of a profession. Decades ago, Schön (1983) remarked that awareness of uncertainty, complexity, instability, uniqueness, and value conflict may lead to the emergence of professional pluralism.

Over a long period the design horizon has extensively opened up to life sciences, social and behavioural sciences, in addition to more conventional intersections with creative advancements in applied arts, technology, management, and engineering.
Design can bring in some or all of these areas (and others) in accordance with the requirements of the design matter of concern. The context to be interpreted and understood for design actions has been partially losing its dense, unified, monolithic identity (i.e., the generic *market*, the generic *production system*, the generic *social milieu*). Instead, it is expected to be de-articulated into both persistent macro- systems – physical and non-physical, economic, social – and local constellations of concerned micro-contexts.

The interdisciplinary approach to design continues to require designers who are firmly rooted in their competences but equally well-equipped with the skills to synthesize, relativize, and apply extra-disciplinary know-how. As there is no unique way to practise design, the profession has largely shifted towards a relational and context-dependent practice, ready to work with different families of design knowledges. Not surprisingly, therefore, designers are facing the situation where a *habitus* qualified by malleable mindsets (Pizzocaro, 2018) is becoming a requisite to manage the multifaceted design demand, along with its internal presumptions and limitations, to effectively cope with the multiple languages of practice, fields of competence, and routes across design fields.

2.2 A matter of complexity

A recurrent statement about a designer's ability often recalls that the problem is to transform the awareness of complexity into methods to handle complexity (Boutin and Davis, 1997). Key concepts central to handling complexity may gain more clarity when they are revealed as already familiar to designers as the form of thought integrating uncertainty while activating links, contextualizing, globalizing, and recognizing both singular and general dimensions (Boutin and Davis, 1997, p. 116). To be trained as designers who make use of holistic visions then implies the ability to perceive the entwined sense of reality related to profession; to adapt and facilitate change; to be part of change itself; and to accept uncertainty as an opportunity rather than a risk or limit (Pizzocaro, 2005).

The scale of a designer's intervention may range from the level of an individual artefact to that of large technological systems, which contain messy problem-solving components; are both socially constructed and society-shaping; and include physical artefacts, organizations, scientific or legislative artefacts, and natural resources (Hughes, 1987, p. 51).

As Noel *et al.* (2023) argued, it is socio-technical systems that define much of today's design work: «They connect people in *new geographies* through digital devices and boundaryless software, yield increasing power to users, convert resource-intensive products to services, and share more information than ever before (…)» (p. 189).

Wahl and Baxter (2008) stated that many expected outcomes for «the *wicked problems of design* are more likely to be new processes, lifestyles, and changes in meaning» (p. 82), rather than mere material artefacts or technical solutions.

Dykes *et al.* (2009) were among the first to summarize that key amongst the changes designers are facing is the indeterminacy of professional boundaries. Fluid patterns of employment within and between traditional design disciplines have become commonplace, and many modern day designers have a core of designerly activity backed by other subject areas. Supported by collaborative working, many practitioners work with and within other disciplinary areas: «Designers are increasingly exposed to various disciplinary influences

through diverse teams that coalesce for a project, dissolve and reform with different personnel and expertise» (p. 101).

Nelson and Stolterman (2004, p. 167) observed that organizations are challenged by levels of complexity and scale never experienced before: new demands for a constantly increasing stream of new knowledge that floods daily operations; cultural expressions that may collide with the globalization of people; ideas and markets that create an unstable and unpredictable environment: a *complexified* reality, where organizations still carry on creative and innovative activities, within ambiguous and uncertain conditions for their undertaking.

Increasingly ill-defined boundaries between artefacts, structures, and processes; large-scale social, economic, and industrial frames; complex mixes of needs, requirements, and constraints; information content that largely exceeds the value of physical substance; all of these motivate why «professional design practice today involves advanced knowledge. This knowledge isn't a higher level of professional practice. It is a qualitatively different form of professional practice» (Friedman, 2000, p. 7*)*.

2.3 The industrial designer as augmented shape giver

Valtonen (2005) has recounted a concise history of the changing role of the industrial designer during the last century. Although focussed solely on Finnish events concerning industrial designers, Valtonen's map of industrial designers' roles over six decades from the 1950s is partially generalizable. When the professional practice of industrial design first started in the 1950s, the designer was a sole product creator whose work was likened to that of the artist. With the sixties' closer cooperation with industry, the designer became a member of a team of engineers and marketing representatives asked to tackle technological complexities. With the seventies it was the turn of ergonomics when the designer embodied the user expert, and along with the eighties' popularity of design management the designer evolved into a co-ordinator. The experience creator finally absorbed brand-building and strategic design in the nineties.

Since the former roles have not disappeared with the emergence of the latter ones, designers have continued to play a part in streamlining products, but they have also collaborated in improving efficiency within organizations, to optimize processes, to automatize user experiences, and to ameliorate interfaces, systems and services at various levels. In general terms, the areas of concern for a designer have broadened and the roles multiplied. The new millennium definitively consolidated the path of the designer as *strategist* pushing innovation (Gornick, 2010).

Without entering the multifaceted, articulated debate about the pioneering, early phases of the industrial designer's role, here it suffices to recall with Valtonen (2005) that the role of the designer used to be that of «a creative and expressive person who had given form to an industrially produced product. This approach was at the time natural as the area in itself was new, and the public had hardly any knowledge of its existence». The role of shape giver was part of the broader horizon of material culture, although circumscribed to manufactured objects (Maldonado, 1976, p. 7).

To underestimate the designer as an artist and creator behind the object, and the driver of the product's appeal, sometimes based on charismatic and occasional eccentric special qualities, would not illuminate that even such an oversimplified role integrated the traits of a composite social function, based on visual sensitivity to reach the more substantial competence needed to determine materials, structure, mechanisms, shape, surface treatment and appearance of mass-produced products through industrial processes, not to mention packaging, advertising, display and marketing problems (ICSID/Unesco, 1967, p. 3). The designer's profile as a creative conceiver has frequently been inclusive enough to act as the performing agent for a practice aimed at improving the characteristics of use of products; meeting human needs through object artefacts; improving environmental quality; coining the features of products as well as giving them aesthetic quality; increasing productivity; and coordinating product development and planning (Bonsiepe, 1975, p. 20).

2.4 From the form giver to a future conceiver

Around half a century after the seminal ICSID definition (1967), the designer's profile amplified to explicitly show the traits of *innovation driver*, *negotiator, facilitator, visualizer, navigator, mediator*, and *coordinator*. With a more global economic and competitive situation, and a society emblematically marked by *The Rise of the Creative Class* (Florida, 2002), the quest for innovations leads to a change where design issues are gaining vastly greater importance. The design *ideology* then better coincides with «the idea of looking at things with a creative mind and finding new solutions» (Valtonen, 2015). Meyer and Norman remark (2020, p. 46) that «the creative and problem-finding-and-solving aspect of the profession has grown to encompass societal issues in a vast array of forms and emerging in countless different contexts – from redesigning procedures or organizations to tackling climate change». The designers may now aspire to be agents to direct the corporate visions with which forms of augmented competitiveness are to be established.

More up-to-date definitions for industrial design by the currently renamed WDO mirror the augmented role designers play when asked to bridge the gap between present and future, while not necessarily renouncing the legacy of a creative side. Industrial design now embodies «a trans-disciplinary profession that harnesses creativity to resolve problems and co-create solutions with the intent of making a product, system, service, experience or a business, better.

At its heart, Industrial Design provides a more optimistic way of looking at the future by reframing problems as opportunities» (WDO, 2023). With design increasingly being recognized as a strategic resource, the sphere of influence that designers gain in business and society is increased. Big corporations begin to see design as a critical corporate asset. The growing trend for integrating design into overall corporate strategy is also being appreciated. Consequently, designers may become increasingly entrepreneurial, now getting involved and venturing into business beyond the design of products, spaces and communications (Muratovski, 2015, p. 121).

Krippendorf largely expanded the actions that can be connected to the design professions by observing that «Design is fundamentally

tied to conceiving futures that could not come about without human effort» (2007, p. 4). Along with this expansion, design has split into many different disciplines (product, interaction, graphic, communication, industrial, textile, fashion, digital, experience, packaging, multimedia) with such profound differences that they may actually be considered as separate, even though they are often housed together in education institutions (Meyer and Norman, 2020, p. 31). Bremner and Rodgers (2013, p. 6) further observed that the boundaries ruptured and dissolved of what used to be recognized as discrete design disciplines, e.g., product, graphic, textile, and fashion design.

Growing evidence suggests that a situation exists where a blurring of traditional design domains and a new capacity for collaboration is encouraging new types of design practice (Atkinson, 2010). Forms of professional hyper-specialization are offered and carried out in distinct and heterogeneous industrial sectors, *via* flexible contributions scattered on various levels of business organization (i.e., research and development departments, marketing areas, research laboratories, professional consultancy both inside and outside the company). Responsibilities further extend to use technologies; to gain understanding of social issues, human behaviour, and modern business models; to meet new ethical challenges that go along with an expansion of different sustainability issues, different cultures, and different value systems (Meyer and Norman, 2020, p. 26).

2.5 The emergence of the design innovation catalyst

As a new frontier for the design profession, the design innovation *catalysts* were coined to outline the value that novel capabilities provide organizations through employing them (Wrigley, 2016, p. 148). By increasingly becoming a vital and important strategic business asset, in contributing to successful innovations, industrial designers are entering an era when the ability to solve complex problems is expected to lie in the coupling of the project and business levels through a holistic approach to products, services, and business models, which consolidates a moving away from the solely product-centric approach.

Wrigley remarked that «the role of the *Design Innovation Catalyst* (DIC) is to translate and facilitate design observation, insight, meaning, and strategy for all facets of the organization. In this role, the DIC is called to continuously explore, instigate, challenge, and to disrupt innovation internally and externally – all from a position within the company» (Wrigley, 2016, p. 151). Engagement and involvement with many different internal and external stakeholders become vital to the design-led innovation process guided by the catalyst designer, who is expected to iteratively prototype solutions as the central value proposition of the firm. Even if it has long been stated by many authors that design can help businesses innovate through processes like design-led innovation and the generation of new business models (among the many Utterback, 1996; Walsh, 1996; Utterback *et al*., 2006; Johnson *et al*., 2008; Wylant, 2008; Martin, 2009; Cruick-Shank, 2010; von Stamm, 2013), a better distinction now states that the design-led innovation process «is not only about problem-solving approaches such as design thinking suggests, but it is a transformational process at the business (not product) level»(Wrigley, 2013, p. 2).

Design-led innovation may now integrate those methods which allow the designer to consider their development from multiple perspectives, typically spanning user needs, business requirements, and technology demands. The design solution is not expected as an artefact in isolation as the design profession shifts from servicing a manufacturing economy to a knowledge economy. The role of a designer is prompted «to radically change the emotional and symbolic characteristics of products through a deeper understanding of broader changes in society, culture and technology» (Wrigley and Bucolo, 2011, p. 232). If this does not imply that all designers are prompted to make this transition, it is however implied that for those embracing a position as innovation catalysts this profile embodies a role spanning both business and design knowledge domains (Wrigley, 2016, p. 149).

Managing holistic processes requires a different mindset at the start of a project than designers traditionally possess. They require different knowledge, processes and tools to crossover from the project level into the business level. Inspired by the framework established by Bucolo and Matthews (2011), stemming from

Norman (2010) and Martin (2011), and more extensively based on Wrigley and Bucolo (2012), the role of the *Transitional Engineer* was proposed to be inserted in between business and design. Her/his function should be to translate between the abstractions of research and the realities of practice, converting design research into the language of business while also translating business insights into design problems (Wrigley, 2016, p. 149).

2.6 A kaleidoscope of roles

The designer's roles have been widely explored (e.g., Press and Cooper, 2003; Valtonen, 2005; Lee, 2008; Wahl and Baxter, 2008; Tan, 2012; Diehl and Christiaans, 2015), but with the tendency to a very broad scale (Yee *et al*., 2009, p. 2). Especially where designing is less about artefacts and more about linking social, technological and cultural dimensions, alternative or integrative competence profiles still deserve dedicated *foci*. The many different facets of the designer as practitioner may produce a kaleidoscope effect: the many challenging new roles appear to be constatly readjusting to multidisciplinary innovation settings, and new design theories and practices mould new designer identities. Questions are constantly re-framed for the old and new roles, their coexistence and relationships.

Scanning literature systematically offers an outline on the plenty of role variants attributed to industrial designers. The study conducted by Güneş (2021) listed up to 83 designer roles (pp. 21-22), ranging from adviser to catalyst, inspirer, integrator, interpreter, intermediary, connector, coordinator, creator, mediator, facilitator, strategist. Less-frequent variants are interpreter of complex systems (Roth, 1999), core competence prospector (Seidel, 2000), social visionary (Tonkinwise, 2015), or transdisciplinary integrator (Wahl and Baxter, 2008).

The designer as *facilitator* appears very frequently in literature (Thackara, 1996; Inns, 2007; Julier, 2007; Morelli, 2007; Lee, 2008; Wahl and Baxter, 2008; Cooper *et al*. 2009; Hestad, 2009; Manzini, 2009; Tan, 2012). What the facilitator/interpreter does is to plan, guide, navigate, and manage the overall design process to ensure that objectives are effectively met, assuring participation from all

the involved actors. In tune with the idea of redirective practice (Fry, 2009), Manzini (2009, p. 11) details *redirective practitioners* as connectors, *quality producers*, *visionaries,* future builders (or co-producers), promoters of new business models, and catalyzers of change.

A designer in the facilitator role may even adopt subordinate roles (Güneş, 2021, p. 30) to foster reflective practice and to enable collaboration, synergy, and participation. Güneş (2021, p. 23) pinpoints as key major clusters: those of creator/conceptor (able to see and share visions for the future and translate these visions into a concrete product rather than higher-level product policy development); conductor/coordinator (aimed at establishing cooperation and partnership among actors to provide information and ideas, to process and use the information to enable innovation and create an effectively designed product); and connector (asked to create a design network, connecting and balancing the communication of ideas and actors involved in the product-development process).

If different socio-cultural and economic environments around designers can create different role expectations, their role may vary in turn according to context conditions. Güneş (2021) remarks that the most important factor in defining the role played by a designer is information. If the information is immanent, if the designer has the necessary knowledge to work with, then the designer role tends to be atomistic (creator, artist, craftsman, functional specialist, maker, problem-solver). Conversely, the designer roles that are not atomistic (be they catalyst, synthesizer, integrator, interpreter, facilitator, mediator, agent of change, strategist, coordinator, teamwork leader, connector, intermediary) may variably depend on the acquisition, processing, and production of information, informed decision-making, and the utilization of the obtained information (Güneş, 2021, p. 30).

2.7 Steps to the *conscious* practitioner and the citizen designer

Design practice continues to have numerous forms and directions that can cross, transcend and transfigure disciplinary boundaries

in a state of flux. It is currently a complex of approaches that, while competing as well as complementing, share the common goal of driving and informing design processes towards change.

Industrial designers as versatile practitioners are asked to navigate interdisciplinary domains and arrange multidisciplinary perspectives. Interdisciplinary collaboration, cross-fertilization, research interplay, vision sharing and knowledge transfer are among the recurrent expressions indicating promising paths to manage intersections among different fields of knowledge without renouncing an anchorage to more traditional designerly actions (Pizzocaro, 2016, p. 389).

Not surprisingly, designers are facing the condition where – amidst globalization and digital proliferation – the alterity of a design alter-disciplinarity or undisciplinarity has been claimed «as the most effective approach for the future of design» (Bremner and Rodgers, 2013, p. 9).

The opportunities and threads envisaged by the concepts of undisciplinarity and *alterplinarity* (Bremner and Rodgers, 2013, p. 12) are implying the definitive breakaway from a unified design practice, which is projected far beyond the limited borders of design as a once merely technical and creative discipline.

This current practice also widely exceeds the long-established intersections with engineering, architecture, art, social sciences, and economics in the previous forms they have long existed.
The design profession is expected by default to be reset on the individual design cases and issues that generate questions to heterogeneous fields of knowledge. Interdisciplinary, crossdisciplinary and transdisciplinary mindsets for designers become part of a *habitus* claimed to be functional in better shaping collaborations between areas of intervention that are generating hybrid professionalisms in design. This *habitus* may be recognized as an industrial designer able to face and manage the differences between multiple languages of professional practice, domains, and varying routes in complexity navigation in the realworld demands. *Habitus* is a latinism used in many areas other than habit or outward attitude, to indicate not only the complex of external characteristics or behaviour of an individual, but also, more generally, an attitude, a tendency.
The concept of *habitus* was used by Pierre Bourdieu (1979) to refer to the physical embodiment of cultural capital, namely the ingrained

habits, attitudes, or skills that people may possess given their personal experiences. According to Bourdieu, the *habitus* is a system of thought and action patterns acquired in a lasting manner, which integrates past experiences and acts by influencing current perceptions, evaluations, behaviours. At the same time the *habitus* makes the implementation of a great variety of tasks possible, thanks to the transfer of mental patterns that allow the framing or solving of problems sharing the same structure.
This is why the modifications to the designer's role are claimed to express conscious abilities to intertwine with operating procedures, methods, and modes extracted from heterogeneous and malleable practices. Such a transition also professes to responsibly make design knowledge circulate and be applied in the name of a disciplinary anomie, which not only means lawlessness, normlessness (in the etimology from the Greek *ανομία*, without law), but it may also imply instability resulting from a breakdown of standards and values.

In its turn, the notion of the *citizen designer* (Heller and Vienne, 2003) vividly portraits the function coined to illuminate the social and moral responsibility some designers could embrace in order to address societal issues within or in addition to their professional practice, extending their impact to such an extent to be professionally, culturally and socially responsible. Notwithstanding the persistent public identification of design with aesthetics, styles or trends, design citizenship advocates a promise and deep engagement for change, renewal, and disruption to help solve realworld wicked-problems (Resnick, 2016, p. 12). Social design, variably disseminated as design for public-interest, social-impact design, transformation design, socially responsive or humanitarian design (e.g., Papanek, 1971; Dilnot, 1982; Margolin and Margolin, 2002; Morelli, 2007; Thorpe and Gamman, 2011; Tan, 2012; Armstrong *et al*., 2014; Manzini, 2014, 2015; Tonkinwise, 2019), was coherently coined to highlight a practice of design where the primary motivation is to promote positive change within society at large.

2.8 Pluriversality's turn at taking responsibility

Appropriations of diverse knowledges are the basis for validating an inter-disciplinary or cross-disciplinary design competence to be consistent, non-reductive, rigorous, and applicable. The shift towards an in-depth appropriation of knowledges addressing the many facets of the real world is destined to further extend the responsibility of industrial designers, who are increasingly called on to understand not only processes relating to production but the contexts in which products will be used, find value and make sense.

In the vein of the contemporary design discourse which proposes macro-level schemes or visions, the concept of pluriversality (Noel *et al*., 2023) has been introduced to properly express the quality of an approach «that broadens and diversifies the contexts and methods through which design is practiced» (p. 184). Grounded in Escobar's (2018) insights on how design can be turned into an activity with a constructive imagination attuned to the needs of the Earth as well as of local communities, pluriversality also lays a path for the development of knowledge by framing design at the core of diverse human experiences and identities, where the richness of design may be practised in different epistemologies, ontologies, cultures, subcultures, global, and local places (Noel *et al*., 2023, pp.184-185). Such a pluriversality is meant to be relational. It emphasizes the interactions among natural, social, and technical aspects of life; it implies that design may be practised everywhere and in ways that respond to differences in these relationships; it provides a deeper understanding of complex issues, such as the production of plural realities and forms of existence. «A pluriversal approach challenges the traditional view of design as a transactional practice, instead focusing on relationality» (Noel *et al*., 2023, p. 183), to come to conclude that «practice now includes participating in building communal worlds and taking responsibility for socio-cultural change, and the role of design technology in everyday life» (p. 189).

A pluriversal design practice posits multiple worldviews and multiple lived experiences to inform the design field.

Moreover, it dvocates a relational view of situations in which the design responses to interdependent natural, social, economic, and technical systems are specific, and where many forms of design practice may coexist (Noel *et al*., 2023, p. 183). Willis (2010, p. 1) argues that this is not really a problem of complexity.
The problem arises with the assumption that all such systems and factors are to be addressed by designers. Whether serving the customer, client, or humanity, the designer's actual problem turns into one of choice (Willis, 2010, p. 1), which is a problem of judgement about priorities. Not simply synonymous with diversity and inclusion, and avoiding the simple *anything goes*, a turn to pluriversality embraces informed actions and allied approaches: this is a crucial point where the designer's responsibility tangibly embodies the ethical dimension requiring thinking beyond the sum (or residue) of professional specialisms.

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