Current Issues in Design Policies: Balancing Tensions

Rui Monteiro, Bruno Giesteira, Anne Boddington, and Cristina Farinha

Abstract Deriving from the scholarly debate surrounding design policies in the past 25 years, this paper proposes a novel triangulation of fundamental issues which remain unsolved, by highlighting them and analyzing how they relate to each other. The issues under analysis are innovation policies, the role of design in research, development and innovation and the multiplicity of design definitions. These are intrinsically linked with Design policies, but their interconnections are not well established or visible, leading to conflicting perspectives and tensions. Ultimately, this approach provides new insights on the rationale and construction of Design policies, towards prospective interpretations for their role and aspirations.

Keywords Design · Design policies · Innovation · Research and development

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1 Rationale

Design has been presenting itself as an asset by offering new possibilities on how to envision the world and the future, and by proposing new solutions and approaches (Lawrence 2014; Dunne and Raby 2013; Bason et al. 2012; McDermott 2007; Krippendorff 2005). In this regard, Design has been broadening its horizons and has been demonstrating how it can offer value of different forms.

It is thus not surprising that policy makers have been embracing Design, starting in the 19th Century with the first design and crafts societies, then after the Second World War with the creation and development of design councils and for the past 25 years with the emergence of dedicated public policies for Design throughout the world (Raulik-Murphy 2010), mostly on the premise to foster innovation and competitiveness.

But while there is extensive and clear evidence on how can Design contribute to innovation in a variety of fields (Concilio et al. 2019; Hernández et al. 2018; Cooper et al. 2017; Cautela et al. 2014; Filippetti 2011; Verganti 2006), when it comes to Design policies, there seems to exist an intricate, complex and many times contradictory entanglement of factors, making it difficult for deciphering them and understand how they interconnect (Gonzalez et al. 2018, Maffei et al. 2015, Cruickshank 2010), and therefore a relevant subject for analysis.

Moreover, looking at the broader picture, we are currently witnessing initial signs, at a global scale, of a sixth innovation wave. This time driven by sustainability principles, as a likely response to the intense use of natural resources (Silva and Serio 2016). Simultaneously, the world is ever more challenged by growing inequalities (United Nations 2020). And considering the aspirations, promises and prospects for Design to tackle a range of issues, it is relevant to question its role providing these big challenges.

Locating the discussion of Design Policies at a macro perspective is also useful as public policies, on one hand, do (or should) intend to solve wider societal challenges and Design Policies, on another hand, have indeed been emerging in a variety of regions throughout the world.

Moreover, the expectations and work towards the development of Design Policies continues, as can be seen by the current and active discussions on the formulation of the next generation of design policies (BEDA & Design4Innovation 2018; BEDA & PDR 2018).

The pertinence of this analysis is then reinforced if we look at two ingredients: 1) the existing groundwork and knowledge build-up on Design Policies and 2) the legitimate expectations, concerns and questions on the upcoming role for Design, in particular through Design Policies in this context.

Accordingly, this paper intends to look back at the recent construction of dedicated Design Policies, through the eyes of different scholar viewpoints, being mindful of the broader picture. The goal is to scrutinize the debate surrounding design policies, through a literature review and analysis, with a special focus on different perspectives, contradictions, and interconnections. This exercise becomes particularly useful for taking a step back and reflect on what has been reached so far on this matter.

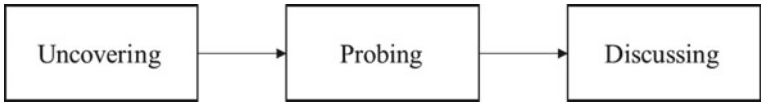

Fig. 1 Methodological stages diagram *Source:* author

2 Methodological Approach

Considering the variety of intersections and possibilities one can extract from the presented rationale to provide an analysis on the topic, a protocol is established to disclose and investigate the underlying main issues.

To do so, the methodological approach considers three sequential steps as shown in Fig. 1.

This implies that in a first moment we propose to detect the main underlying issues surrounding the scholarly debate on Design Policies (uncover), followed by an inspection on the positions and perspectives put forward by different scholars for each issue (probing), ending with an examination of such debate, bearing in mind its prospective role (discussing). For the first two stages a literature review is conducted, while for the third stage an analysis of the literature review is produced.

Provided these steps are clear, a starting point is required and, subsequently, the boundary conditions are as follows:

- Looking at Design Policies, namely related recent scholarly discussion, and in line with the timespan of the emergence of dedicated Design Policies; and
- Looking at related cross-references of this discussion, thus ensuring coverage of immediate and/or concealed narratives.

The advantage of this approach is that it recognizes the subject complexity, particularly when looking at a substantial period, especially if we keep in mind that dedicated Design Policies have been emerging for the past 25 years, and how that results in a significant amount of information. In this perspective, by reducing a manifold problem to a set of underlying main issues we can level the debate without losing sight on its depth.

3 Uncovering the Issues

Due to the recent evolution of design and design public policies we have been witnessing a debate on how to properly develop and position design policies. A debate which considers a variety of domains, such as policy formulation and evaluation, innovation studies, design methods and meanings, economic theory, design theory, among many others. It is therefore a complex formula, ever expanding, difficult to understand and to determine which variables are to be included or excluded and operations to execute.

The hypothesis under scrutiny points to an entanglement of factors within Design Policies that prevents the proper decipherment of their construction which, ultimately, might hinder their goals and success.

Therefore, to uncover the underlying factors, we propose three issues that cover fundamental pillars of Design Policies:

1. As Design Policies are fundamentally a recent phenomenon, pointing towards their role in innovation, they need to be seen in a contrasting light to innovation policies (Hobday et al. 2012; Hobday et al. 2011);
2. The range of possibilities on the role Design can/ might play on the full spectrum of research, development, and innovation processes (Hernández et al. 2018); and
3. The pointers on a limited role and understanding for Design regarding their actual expected scope of application in Design Policies (Monteiro et al. 2017; Monteiro et al. 2018).

Considering these three fundamental issues, we propose a triangulation analysis as a tool to isolate each issue, thus supporting the process of establishing boundaries, as to understand how they permeate with each other and converge towards Design Policies (see Fig. 2).

This triangulation therefore serves the purpose of understanding where design policies currently stand, by putting in perspective the existing tensions within which design policies rationales sit.

At the center, Design policies have thus been balancing these three issues:

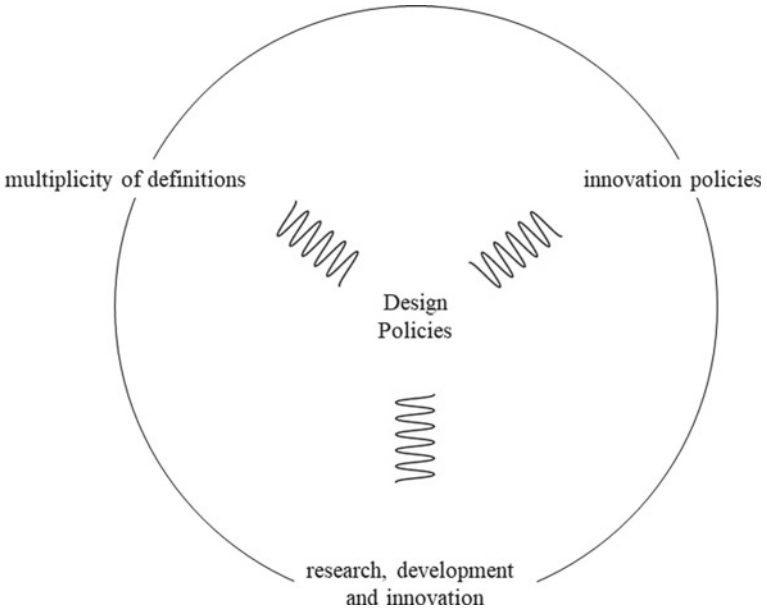

Fig. 2 Balancing tensions for design policies *Source:* author

– innovation policies, by drawing parallels and permeating knowledge between design and innovation policies;
– research, development and innovation, by looking at design methods and research, development and innovation (RDI) processes; and
– multiplicity of design definitions, by considering its own scope of what design means, stands for and can do.

In the upcoming section each of these issues is analyzed separately. This analysis is based on literature review and for each issue contrasting perspectives and/ or inconsistencies are presented which highlight existing tensions. To ensure a coherent narrative, the discussion is focused on the issue at hand, but also in its connections to Design policies; moreover, touchpoints between the three issues are placed to ensure a connecting thread among all.

4 Probing the Issues

4.1 Innovation Policies

Since Hobday's paper on the contrasting perspectives between design policies and innovation policies (Hobday et al. 2012) it became perfectly clear the long road ahead that design policies still have on discussing how they should be positioned. The contrasting perspectives are set in the limited relationship between design policies and innovation policies in regard to their rational and conceptualization strategies, even if they refer to each other. A likely reflection on how innovation policies have been developed and extensively debated for over fifty years and have established themselves as a solid policy framework and, on another hand, how Design policies are fundamentally a recent phenomenon developed in a different context.

In this line of thought, efforts have been made to establish parallels and bring the two perspectives closer, such as is the case of developing a "Design innovation ecosystem" approach (Whicher 2017; Whicher et al. 2018), based on the "innovation ecosystem" model. By following this path, the goal has been towards providing visibility for the different Design sector actors, how they relate and interact with each other, how they sit within the overall economic and societal landscape and essentially how and where to act from a policy perspective. A systemic process which derives directly from the ecosystems modelling approach. The purpose is also to establish an easier access for policy makers by highlighting a discourse they are more familiar with such as the one found in innovation policies.

This approximation is even more relevant when considering the context of the current economic, social and technological changes, which is portrayed by "significantly improved abilities of problem-solving and the capacity for changing the world through introducing digital technologies" (Schwab 2017). A useful background for driving new policies (of any domain), without forgetting the existing considerations

on the role of Design for problem solving (Dorst 2004; Jonassen 2000), which shed light on how Design can contribute with relevant and efficient proposals.

It is also in this wider context that new relationships between design, innovation and users have been put forward, presented as "design-driven innovation", aiming to contribute to "incremental innovations" or, when taking it a step further, to "radical innovations" (Norman and Verganti 2013). A notion which shifts the position and expectations of Design further to high impact possibilities, thus supporting and corroborating an alignment with innovation policies goals.

But this relationship also needs to be seen in contrasting perspectives, as innovation studies most often neglect design and design studies most often regard innovation as a consequence (Mortati 2013). From this viewpoint, this contradiction can lead to a layer of discrepancies between Design Policies and innovation policies.

Other efforts have also been made by establishing connecting points between Design policies and innovation policies through the Oslo Manual, a reference handbook for innovation policymaking, from which we can exemplify with the analysis put forward on the fabric of Design Policies in an innovation framework, by highlighting possible strengths and weaknesses (Gonzalez et al. 2018). On this matter, further information and analysis is provided in the upcoming section.

This evolution also needs to be analyzed from a policy rationale and theoretical background point of view, as to understand why Design policies have been put forward. The common argument lies on the systems failure theory, picking up and substantiating the ecosystems approach as it looks to the whole and identifies and examines potential failures in its parts that require attention.

In this line of quest, coupled with the potential of Design, this implies policy intervention for an increase in "the supply and demand for design to tackle failures in the way that actors and components interact in the system" (Whicher and Cawood 2012). An approach which has also been supporting current innovation policies (Whicher and Cawood 2012). Indeed, systems failure theory has gained traction and is the prevalent perspective in innovation policy studies, even though the systems failure concept is still recent (Radosevic 2012) and inconsistencies still exist on the systems versus the previously dominant market failure discourses and theories (Schmidt 2018). On a complementary and clarification note, the term innovation ecosystem is becoming the norm, replacing the term innovation system; a minor modification which essentially sets ecosystems as more organic and non-linear structures, when compared to systems. Nevertheless, the systems theory approach still stands as predominant and takes on these subtilities.

From another point of view, a previous bibliometric analysis on Design policies (Gonzalez et al. 2016) puts in perspective how this topic has been studied. Even though the 30 identified and analyzed papers are spread out in several specialized journals, it also realized that just behind Design, the second most repeated keyword is "innovation policy". A clear evidence of the prevalent discourse.

4.2 Research, Development and Innovation

As an expanding field, Design has also been looking at its own methods, partially in search for clarification where Design stands within the overall Research, Development, and Innovation (RDI) processes.

Within the context of policies, this relationship is also worth exploring when looking specifically at RDI policies, with some connections and side-by-side comparisons attempts having been made in the context of Design Policies. The motivations for doing so usually reside on what are RDI policies, which can be defined as government level "activities, procedures and actions as to coordinate and direct the development of science, technology and innovation" (Piñero 2012). Therefore, encompassing a range of stages, from basic and applied research, to experimental development and then onto innovation processes and outcomes (Estrada and Pacheco 2009). The implication is that these policies target all fields, including Design.

Within this context there are two cornerstone references widely used to define what are research, development and innovation activities, namely the Frascati Manual (OECD 2015) and the Oslo Manual (OECD/Eurostat 2018), focusing on, respectively, research and development and, the later, on innovation. As foundational manuals, their reasoning has ramifications in policies all around the globe.

In one of the attempts to look at both manuals, Design is seen as an economic factor of production (Nomen 2014). From there it realizes and states that the construct of the conceptual framework of the Frascati and Oslo manuals do not provide any leeway for any easy extensions or room for Design. In fact, it goes on and affirms that Design "must fit within the established frameworks" if it wants to be recognized.

This scholar reference within the Design field is particularly relevant for this context, as an output of one of the six strategic public funded projects by the European Union within the framework of the Union Design policy. Perhaps one of the interesting parts is how this output set itself as an idea for a "Barcelona Manual on Design" towards assembling and analyzing Design data. But despite the serious and systematic work and effort put into its development, it has yet to grow into becoming an established anchor.

To highlight the difficulties found on the requirement to "fit" Design in the established frameworks, it is worth exploring here both manuals, as a way to observe this issue from an "external perspective" to Design Policies scholars.

Within the Frascati Manual, based on the five core principles to define what is an R&D activity (novel, creative, uncertain, systematic, transferable and/or reproducible), when it comes to Design it states that "Design and R&D activities are difficult to separate". Even if it provides some examples on where it can and cannot be considered as an R&D activity, the boundaries are less than clear and are therefore reflected on lack of a definition for statistical purposes. A problem also reaffirmed later how the metrics to measure RDI do not explicitly include Design methods (Whicher 2017). Moreover, the latest edition of the Frascati Manual also declares it provides "greater emphasis (…) to the social sciences, humanities and the arts." and continues referring that no "changes in the definitions and conventions [were

needed], but it does require greater attention to the boundaries that define what is and what is not R&D", which in the context of the discussion of Design and RDI becomes quite relevant, as the definitions for R&D have remained almost unchanged for over 50 years since the manual has been in place.

Interestingly, the Oslo Manual also states in its rationale that "policymaking today is still largely focused on what is easier to measure", as a note which is relevant for Design policies. And when it comes to Design, the Oslo Manual takes a different starting point when compared to the Frascati manual by affirming that "design covers experimental and creative activities that may be closely related to R&D", even if however not meeting the full criteria to be classified as R&D, but already states that "most design work are innovation activities".

Returning to the work on the establishment of links between Design and the Oslo Manual referred in the previous section (Gonzalez et al. 2018), one can find a more successful endeavor. Instead of looking for specific connections between Design methods and this manual, it puts forward a correspondence directly with Design Policies. The result is on matching different categories of Design Policies, such as infrastructure and institutional framework, to the systems approach of stakeholders found in the Oslo Manual. A relation which is only coherent with the ecosystems approach for Design Policies.

The difficulty in finding a place for Design within the RDI processes, particularly in what concerns Research and Development, is also reflected in Design policies. Indeed, such positioning of Design can also be found, for example, in the European Union Design Policy (European Commission 2013) as it states that a "systematic use of design as a tool for user-centered and market-driven innovation in all sectors of the economy, complementary to R&D, would improve European competitiveness". The keyword being "complementary". Other approaches at policy level, on the other hand, include design research methods, such as is the case at The Policy Lab, a United Kingdom government support unit for policy making (Walker and Loyd 2014), and therefore recognize Design research as its own area, and not as an extension or complement to other R&D approaches.

Notwithstanding the most widely accepted concepts of research, development and innovation which don't seem to be appropriate for Design currently accepted roles, it is also worth noting that what has been changing is the understanding of how they interact and are positioned along the knowledge chain. Indeed, the innovation landscape has been changing substantially and with-it new models for understanding how the RDI processes and outcomes interconnect, as we are now witnessing the fifth generation of innovation models (Hobday et al. 2012). This also demonstrates how the articulation and clarification attempts for Design methods might suffer by continuously trying to catch up on a rapidly moving field as innovation policies is.

On another hand, Design research and development recognition is certainly not new and the work of, for example, Bruce Archer has helped shape its foundations (Davis and Gristwood 2016), along with many others. Moreover, the development of Design research methods precedes the recent history of Design policies and has been progressing through generational evolutions for at least 40 years (Bayazit 2004).

4.3 Multiplicity of Definitions

The expansion of design into new territories has led to an array of definitions for the field, ranging from broader and inclusive concepts to narrower definitions. Moreover, while the difficulties in grasping the multiplicity of definitions for Design is a long and wide debate, circumscribing it to the context of Design Policies is a more recent discussion, with limited argumentation still in place. Indeed, it has been identified as an upcoming challenge (Whicher 2017) with some initial thoughts and hypothesis having been put forward, on the possibility it might act as a limiting factor for implementing Design Policies (Monteiro et al. 2018).

As such, it is helpful that in this context we can differentiate between those definitions put forward within the design field by itself and those definitions put forward within design policies. An approach which can also help clarify how knowledge permeates and flows between these two.

A good starting point can be on the relationship between creativity and Design which, when added together, result in innovation (Cox 2005) or, in other words, design is about "creativity deployed to a specific end". A formulation which is quite beneficial for policymaking, as it provides a simple and clear argumentation for the importance of Design.

On the commemoration of the 20th anniversary of The Design Journal, Paul Atkinson has also put forward a paper revisiting previous discussions on the role of Design (Atkinson 2017). By highlighting a set of papers from the journal that deal with Design in different contexts, the discussion there touches upon the variety of meanings and uses for Design, from objects, to policies, to daily life, to businesses or to sustainability. By doing so, it also intends to (re)affirm the relevance of Design and how its concept works well in different areas. On the policy dimension, it should also be noted that it is not only about Design Policies, but also about Design for developing policies, which reinforces the wide role Design can have with several efforts having been developed on this topic.

For businesses, the existing literature is also extensive and one can pick an example related to the current innovation and competitiveness digital world, as the case on the roles for Design Concepts in business-to-business manufacturing organizations, within the context of product and service Design, and how Design had a positive impact there (Pekkala and Ylirisku 2017).

But the efforts to understand or to provide new meanings for Design, go well beyond the standard discourse in Design policies, which fundamentally, as seen before, is tied to innovation and competitiveness. For example, in The Spirit of Design "common assumptions about sustainability, progress, growth and globalization" are challenged given that, it argues, Design practice is precisely captured by the current innovation and production discourse (Walker 2011). A statement which hints on an unsettling nature of Design and its fuzzy boarders, by targeting core principles supporting Design. And a description which also points to an idea that Design, and for that matter Design Policies, are not responding to what are the global challenges in an effective manner.

In this regard, it is also relevant to highlight the evolution of Design definitions and its multiple options. An evolution which also goes along the different economic paradigms, as the 80's period with an emphasis on styling, the 90's on brand and marketing and after the 2010's on strategy (Liu et al. 2017). An evolution which is continuously pushed given the current expressive change of the social and economic landscape of where Design is located and how that is a requirement to broaden Design practices (Cope and Kalantzis 2011). A perspective which also seems to be in line with the argument that Design has been captured by mainstream discourses on innovation.

The need to define Design has also arisen in other closely related fields, such as is the case for the product development process in engineering, where we can find a proposal for four models of design definition: sequential, design centered, concurrent and dynamic (Yazdani 1999). The same author continues and goes further to establish connections between each model and its advantages and disadvantages, depending on how it will be used. This example has the advantage of placing and fitting Design as a discipline and, in that sense, its concept and definition in engineering. Doing so, by effectively creating further definitions, it dilutes boundaries and concepts.

The complexity of this discussion recalls what seems to indicate an intensive and multidimensional relationship between design, innovation, and R&D activities in industrialized countries (Tezel 2012), whatever that relationship may be. And provided the ability of Design to tackle complex, wicked problems (Hobday et al. 2012), perhaps this territory is where design can further advance. Reaffirming, perhaps, a position that is not about being an "unfinished" field, but rather one which might not yet be pleased with existing formulations and practices.

Another perspective relates to the concern of proving the value of Design to non-designers, namely within the innovation process and its importance beyond aesthetics and meaning of products (Mortati 2015). An idea which is likely tied to the need to explain what Design is and how difficult it must be to prove its value, but which ends up pointing to how Design has a clear and settled positioning regarding aesthetics and products, but not so when it is placed in more distant fields.

On the Design policies perspective, definitions for Design are also put forward. Without overextending a list of available definitions in design policies, some examples can be useful to note. Such as the design policy for Queensland in Australia which dedicates one page to the definition of Design stating that "good design is sustainable design. It is a process… joining creativity and innovation… and delivering value" (Queensland Government 2008). The European Union "Action Plan for Design-Driven Innovation" also provides its own definition, stating that Design is an "activity of people-centred innovation by which desirable and usable products and services are defined and delivered" complemented with its offer on "methodologies, tools and techniques that can be used at different stages of the innovation process (…) [and] drives business model innovation, organizational innovation and other forms of non-technological innovation" (European Commission 2013). For Iceland it is mentioned that Design is "(…) a collective term for various fields that unite creation and practical solutions (…) [linking] creativity and innovation and shapes ideas for the production of good, useful items for users and buyers" (Icelandic Government

2014). Or the case of the "Made in China" an industrial policy, but which identified a need to put forward a new concept on "Innovation Design" to represent the new role of design as leadership in innovation and setting its characteristics: "green and low carbon, network and intelligent, open and fusion, co-creating and sharing" (Liu et al. 2017). What also seems interesting to note is how these definitions take the broader and more inclusive approach, as to ensure the policy is the necessary framework to embrace a large and diffuse concept.

But independently on the chosen definition for Design, previous research also seems to indicate that another differentiating factor among Design policies is on where Design is to be applied (Monteiro et al. 2018), which to a certain extent devalues the definitions put forward as they are not mandatory to be followed.

5 Discussion

Looking at the explored fundamental issues, several contradictions are highlighted and therefore remain unsolved. These contradictions reflect existing tensions due to boundary problems, as they essentially deal with the process of exploring and setting conflicting or just different positionings.

These tensions in turn provide interesting grounds for formulating new questions that hopefully can lead to new research and answers on the topic.

Should design policies give way to innovation policies? Looking at the broader picture of the debate, it is not clear where a design policy should stand: should it be continuously developed as a stand-alone strategy or should move towards its integration into innovation policies? Or in other words, will design policies be considered successful when they dissolve and are fully integrated into innovation policies, or are they successful if they survive for years to come on their own? These questions are based on the observation that Design policies have been successfully put forward on the premise of a positive direct cause-effect relationship between Design and innovation, but also on the scholarly debate of placing side-by-side Design Policies and innovation policies.

Considering this, it is also pertinent to interrogate the theoretical background that has been used for Design Policies. Indeed, systems failure theory by itself does not seem to be a minimum condition to establish Design policies as stand-alone. For that to take place, we would need to clarify we are dealing with a system within systems framework. The former referring to the Design (eco)system and the later to the innovation (eco)system, composed by a sub-set of systems.

Following this line of thought, this implies that the Design ecosystem, with its elements and its internal connections, composed of professionals, companies, supply or demand, is already an integral part of the innovation ecosystem. What is then required to understand is how all of this comes together and specifically where are the weak ties and unbalances. This idea also suggests that a Design Policy needs not only to target its own actors and connections, but also on the relation with other

systems that form the wider innovation ecosystem landscape. The challenge is then perhaps to clearly identify the failure it intends to solve, thus implying that claiming a connection between Design and innovation per se is not enough.

From this perspective, a Design Policy only makes sense to exist for a certain period, until the failure is fixed. Moreover, if the innovation ecosystem is the dominant arrangement, Design Policies are necessarily bounded to the direction it takes.

By taking this exercise one step further and picturing a scenario in a time when that failure is fixed, one needs to ask what comes next? If we reverse this, we can go back to the question we started with: is it more useful a Design Policy stand-alone strategy or an innovation policy which explicitly includes Design from the beginning?

Raising such questions does not necessarily imply to choose from the two previous options, but rather to uncover and push for new perspectives on the matter.

Indeed, the answer does not need to lie at one of the previous two options - full integration/ dissolution in innovation policies versus design policies as stand-alone - but it can be helpful to establish two opposite end points. Doing so, can provide a better picture on the many options that exist in between, considering each context of implementation, leading to clear roadmaps on how to use Design and with what purpose. Design policies around the world do take different approaches, and perhaps only the European Union Design policy takes a clear stance for incorporating Design in innovation policies (Monteiro et al. 2019) while most Design policies do not offer any clues in this matter.

It is therefore important to further study theoretical options for Design policies, including systems failure theory, as to connect and contrast with existing innovation policy rationales and establish scenarios for Design policies.

Are design methods not "*researcherly*" enough? We are witnessing both a reluctance from an innovation policy scholar perspective and a challenge from a Design Policy scholar perspective when it comes to embodying design within reference standards for R&D models and approaches. Simultaneously, we are witnessing ongoing efforts in defining and settling design own methods, a process which has been happening for decades. As we have seen, these are parallel, overlapping and even contradictory paths placing Design in a sort of middle ground in Design policy, making it as not quite research and development even though it also seems to be, but rather that Design methods can be useful to foster innovation. At the end of the day, it seems the debates go in opposite directions and, thus, a contradiction that reflects on how the definition for Design is difficult to grasp.

A difficulty which is also echoed in the metrics used to measure RDI activities and outcomes. By not fully including Design methods within the standards, it creates data collection problems for Design which weaken its overall visibility. A problem which also reinforces the challenge for finding a positioning for Design Policies, as we could note earlier simply because it is much easier for policymaking to focus on what can be quickly and quantitatively measured.

Another aspect that is worth discussing and is not particularly visible within the Design Policies discussions, refers to the Design practice and its professionals. Indeed, references are provided, especially when the debate refers to the components

of the Design ecosystem or the different contexts where Design is used. And for that matter, Design Policies do require a base of professionals to exist, as they mostly represent the supply side.

But perhaps, one can hypothesize that the reason for these more concealed references might lie at the hardship of separating practice and RDI. As we noted earlier, there is a tendency for design studies to take innovation for granted (but not the opposite in innovation studies), and in this perspective, it does place design "somewhere" in the full RDI cycle processes.

The reasoning seems to lead to a dilemma: how can we prove a continuous cause-effect on innovation outcomes and RD processes, if we cannot seem to fit Design on the same standards that define RDI?

The Oslo and Frascati reference manuals also do not offer solutions for differentiating between these two perspectives nor there is agreement in the academic context. But it is interesting to note that for many other fields, these manuals do clearly and easily isolate between practice and RDI. In this light, policymaking is also easier as it becomes clearer to define policy goals. From a policy making perspective, the opposite should then also be true: as it seems to be difficult to isolate between Design practice and RDI, then Design Policy goals are more likely difficult to set.

We then must think if daily Design practice is always indeed employing "RDI methods" and perhaps most importantly if it results in innovation at all times. Exploring this idea in a systematic manner might be a useful exercise, because if this is not true there is a risk that Design Policies are not firmly grounded in Design practice.

Which leads to a need to further study Design in the context of RDI processes and in the context of its (professional, economic or social) practice, by establishing boundaries where they are to be defined and connections where they are required.

Does a broad design definition hinder its strength? By broadening the field, Design has led to an array of contexts of use and connections with other areas, which by itself strengths and solidifies the Design discipline, by continuously putting it to test and to develop new approaches and mature old ones.

Parallelly, this has stretched the search for Design definitions that fit an expanding field, leading to a sort of elastic rubber problem: the more you stretch to reach other fields, the thinner some parts of the rubber will be. That same elasticity represents a clear advantage for Design: its flexibility. Departing from this angle, it is important to increase the elongation capacity of the elastic rubber, so it can stretch enough without creating holes in between or break. Which is to say that the meanings, definitions and concepts for Design is not a mere theoretical exercise, but rather one with practical consequences, particularly in the context of Design policies, where policy makers find themselves in trouble understanding what Design is.

Consequently, that is perhaps why we can witness how Design Policies put forward definitions which are broader and thus avoid dealing with what it pragmatically means. What is then missing is to understand if these wider definitions are put forward because a policy should possess some level of abstraction as a basic requirement, if it is because we are dealing with a lack of understanding on Design, or both.

The presence of definitions for Design in policies also raises an interesting aspect, by putting into light a recurring need to define it and establish a definition that fits the context and/or the strategy taken, it shows how this matter.

One of the definitions mostly used for policymaking in Design refers to the link between creativity and innovation, which is worth reflecting about. This definition looks at creativity as the generation of new ideas, innovation as the successful exploitation of new ideas and design as creativity "deployed to a specific end". Perhaps the interesting aspect to highlight here is how it seems to consequently weaken Design as R&D, when looking at the Frascati basic principles. Indeed, a specific end does not seem compatible with the "uncertainty" principle nor it seems to provide clues on reproducibility and systematic approaches. In this perspective, this broader definition is in line with the Oslo manual, even if the Frascati manual itself says that Design and R&D activities are difficult to differentiate.

From a sector and design perspective, it is likely easier to understand the use of broader definitions as designers are the ones most aware of their skills and have a better understanding of what design is. But if design policies also aim to connect with other sectors and bring about a multi-disciplinary approach, such broader definitions might not be well understood in other sectors as, ultimately, we can also argue that the connection to creativity and innovation can be directly established through other fields without including design practice and skills in the equation. Consequently, by putting forward or disseminating a definition that englobes most if not all sectors, it might undermine and undervalue how design is understood.

6 Conclusions

By looking at Design Policies as a complex phenomenon, this paper positions and centers the discussion around three identified fundamental issues, which are closely interconnected, and therefore challenging to isolate. Consequently, it proposes that the interdependencies between these issues are in continuous tension. As such, this paper captures what considers to be some of these strains and puts forward a set of questions and possible routes to explore new answers.

Going back to the triangulation diagram and the individual discussions for each issue, we can propose a convergence between them into finding what might lie at the essence of the highlighted tensions, that require further attention and investigation.

This area of convergence is settled on what is likely hidden in plain sight: a recurring need to articulate Design Policies against other blueprints. It does so by taking innovation policies as a model, benchmarking against RDI cornerstone references or stretching Design formulations into new fields. In these processes what is also interesting to observe is the continuous back and forth between Design as a discipline and the blueprints it is looking at. Eventually, to ensure its identity is not lost or unrecognizable.

We can draw a parallel to this recurring need as the intention of fitting a jacket that is either (too) tight or (too) loose. What remains unclear is to whom the jacket belongs to: are Design Policies trying to claim ownership (even if partially) or are they hoping it suits them too? Considering how young Design Policies are as field, and perhaps and therefore inexperienced, such question can only be answered with proper time for reflection and maturation.

On a final insight, it is also useful to look back at the landscape set-out in this paper introduction. Particularly as we have established the fine balance in which the underlying issues sit and face towards each other.

The bottom-line is that decisions and options to take regarding the likely upcoming new generation of Design Policies are therefore required to carefully consider the implications (including ethical implications) on how to position Design in this context. And for that matter, how to position Design as a discipline in its own terms.

And while this dialogue is not new, there seems to exist a current window of opportunity as we are witnessing the early stages of a new innovation wave. In this perspective, and considering the comprehensive work on design and its impact on innovation, but also in light of upcoming challenges the world will face, one must raise the question: are Design Policies up to the challenge?

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