NARRATIVE IN DESIGN AND BUSINESS: A LITERATURE REVIEW AND RESEARCH AGENDA FOR THE FUTURE

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ABSTRACT

This paper presents a systematic cross-disciplinary literature review of narrative and storytelling in design and business studies. Although narrative has attracted attention in both design studies, which emphasises narrative's role in the design process, and business studies, including innovation processes, there is still no research bridging the interdisciplinary gap. First, this review underlines established and emerging research topics on narrative in each field respectively. Within design studies, extant research was synthesised into three main areas: narrative as competency, narrative as process, and narrative as artifact.. In business studies, the discussions of narratives in the four areas: narrative in organizational practices, narrative in strategic management, narrative in innovation process, and narrative in entrepreneurship were reviewed and organized in an integrated manner. Second, the authors highlight avenues for further research at the intersection of the two disciplines by creating a common linguistic framework. The authors argue that design narratives have the potential to contribute to different management issues, such as organisational and managerial sensemaking, strategic change/strategy-as-practice, innovation processes, and entrepreneurial identity and legitimacy building. It is revealed that core traits of narrative (i.e. abduction, empathy cultivation, and temporal work) are common research agendas between design and business studies.

INTRODUCTION

The study of narrative has become increasingly prominent in both design and business studies, owing to its essential properties, which comprise human cognitive processes (Bruner, 1986; Polkinghorne, 1988) and modes of communication (Czarniawska, 1997; Fisher, 1985, 1987). Narrative – as a plot of sequential and interconnected events with a beginning, a conclusion, and a basic structure – is used as a sensemaking currency (Boje, 1991; Fisher, 1985). Narrative – often used interchangeably with the idea of storytelling – has been broadly studied as a form of data, a theoretical lens, a theoretical approach, and a tool, as well as various combinations of these (Rhodes and Brown, 2005) in broad domains of business studies, including organisational studies, strategic management, innovation, and entrepreneurship (e.g. Barry and Elmes, 1997; Bartel and Garud, 2009; Boje, 1991, 1995, 2001, 2008; Rhodes and Brown, 2005; Czarniawska, 1997; Lounsbury and Glynn, 2001; Maclean et al., 2020; O'Connor, 1995). 'Linguistic turn' or 'narrative turn' has been strong tradition in business studies, because narrative approach allows researchers to see the social phenomena as multiple and interrelated constructions of social reality, refuting the correspondence theory of truth (Barry and Elmes, 1997; Czarniawska, 1997). This paradigm view has been eagerly espousal in humanities and social sciences, based on the view point of enacted narrative as a basic form of social life (Czarniawska, 1997). In design studies, on the other hand, narrative and storytelling are widely researched with respect to creative design processes (e.g. Beckman and Barry, 2010; Oak, 2013; Lloyd and Oak, 2018).

Narrative is not a 'closed object' but an 'open text' (Eco, 1989) characterised by 'interpretative flexibility' (Bartel and Garud 2003). Narratives can be shared with diverse audiences or narratees who construct their own interpretation of reality (Fenton and Langley, 2011). According to Fisher's (1984, 1987, 1989) 'narrative paradigm', human beings are storytelling animals that make sense of their world and their own lives through narrative understanding, as interpretations of aspects of the world. In the context of the present study, the paradigm of the narrator who tells stories to shape the trajectory of a firm, and the narratee, who interprets stories using their 'semantic heritage' – is entirely adaptable to the company–designer relationship (Beckman and Barry, 2010; Zurlo and Cautela, 2014).

Despite the rising interest in narrative in both design and business studies, there is no comparative review that bridge narrative concepts of the two disciplines. So far, research on narrative in business studies has mainly emphasised the company perspective, and largely overlooked design as a potential counterpart and key interpreter of a company's narrative (Zurlo and Cautela, 2014). If a company wants to tell a story to achieve its various managerial purposes, then the company requires an outstanding counterpart who can interpret, amplify, multiply, and translate its narratives to shape the trajectory of the firm. Design experts are potentially one of the most crucial partners in this regard.

This paper aims to provide a comprehensive interpretative framework of past narrative research in both design and business studies through a systematic literature review (Booth et al., 2016). Through this cross-disciplinary perspective, we aim to outline future research opportunities to enrich the understanding of narrative-related phenomena by creating a common linguistic framework to bridge the interdisciplinary gap (Cooper, 1988; Strike and Posner, 1983). Consequently, this research aspires to provide an overarching taxonomy of viewing design narratives as a result of meta-analyses (Booth et al., 2016) for both managerial practitioners and for research communities in business and design fields. Also, it returns to the full set of items in conclusion, completing the paper that 'narrative turn' of design practices may offer potential for the development of design practices researches and wide range of managerial and organizational issues to be tackled by narrative approaches.

In the first part, we highlight established and emerging lines of inquiry and discuss their theoretical underpinnings and contributions to the overall understanding of narrative. In the second part, we underline the potential benefits of intensified crossfertilisation among view points and lines of inquiry. We point out promising avenues for further research and argue that design narrative has potential relevance for different managerial issues in both scholarly and practical contexts. Additionally, core traits of narrative studies emerge as common research agendas among business and design studies.

METHODOLOGY

Systematic Literature Review of Narrative

To achieve these objectives, a systematic literature review was conducted (Booth et al., 2016). A systematic approach reduces the likelihood of bias and creates a firm foundation for advancing knowledge (Webster and Watson, 2002). Specifically, we adopted the 'fitness for purpose' way (Booth et al., 2016), considering the purpose to identify the lines of investigation related to the company's innovation topics, balancing the rigour and relevance (Bennett et al., 2005). The review covered 'central or pivotal' material in order to concentrate on the most relevant topics (Cooper, 1988; Booth, et al., 2016).

Firstly, we defined the **review scope**. To achieve the two main goals, narrative-related studies in both design and business studies were included. Although narrative and storytelling have been widely studied, especially in relation to creative practice (Beckman and Barry, 2010; Lloyd and Oak, 2018; Oak, 2013), there are few systematic reviews of narrative. In order to holistically analyse and synthesise the extant arguments in the design literature, we included a broad scope of design studies, including design as an outcome, a process, as the purpose of that process, and as the power to achieve this purpose (Buchanan, 2001; Ravasi and Stigliani, 2013). In business studies, on the other hand, narrative research has a strong tradition in the "linguistic turn" or "narrative turn" (e.g. Barry and Elmes, 1997; Bartel and Garud, 2009; Boje, 1991; Czarniawska, 1999; Lounsbury and Glynn, 2001; O'Connor, 1995; Rhodes and Brown, 2005). To clarify the extant research topics related to a company's innovation and organisational aspects, four main areas were selected: organisational studies, strategic management, innovation studies, and entrepreneurship. Through setting those scopes of design studies and business studies, a comparison of narrative related research can be conducted in terms of company's innovation and organization aspects.

Data collection

The selection of research output was conducted following an established review protocol (Booth et al., 2016). Specifying the review protocol in advance allows researchers to clearly set out review methods and avoid introducing bias (Centre for Reviews and Dissemination, 2009). Accordingly, in order to provide a comprehensive review of the narrative literature in both design and business studies, we first established a list of relevant journals as the starting point of the search strategy. Within design, the list of journals was specified according to Gemser et al.'s (2012) survey of design scholars. For business studies, the list of journals was set according to the 50 journals used by the Financial Times in compiling the FT Research Rank (Financial Times, 2016), included in the Global MBA, EMBA, and Online MBA rankings. We decided to use 'narrative', 'storytelling', and 'narration' as keywords. Inclusion and exclusion criteria were specified as follows. The inclusion criteria were: any publication date; a focus on narrative, storytelling, or narration in general; and being listed in the Scopus database. Grey literature, such as reports and non-academic research, and articles in databases other than Scopus were excluded. These criteria yielded an initial set of 159 and 262 publications in design and business studies, respectively. To accurately screen the initial results, we read all the abstracts and searched for articles that contained empirical studies and for conceptual papers that advanced understanding of narrative and storytelling in both fields of research. We excluded articles that, although containing the words 'narrative/storytelling/narration' in the topic/abstract, actually focused on other issues, such as professional identity construction, corporate social responsibility, gender and ethnicity, music and films, or visual semantic analysis. This first round of review led us to select 43 articles.

In the second stage, we applied a snowballing method to capture published output that might have escaped the first round. The bibliographies of the selected articles were carefully reviewed for both backward and forward citations (Wolfswinkel et al., 2013). This branching and cross-referencing method allowed us to add 52 articles and books. Finally, as an ancillary search procedure, we asked leading researchers (Booth et al., 2016; Durham University, 2009). Their advice allowed us to search for journal articles, conference papers, books, and PhD dissertations. The final selection included 107 articles and books, comprising 47 articles and books in design studies, and 60 articles and books in business studies (see APPENDICES).

Data analysis and synthesis

At this stage, the content of each article was carefully read, and the selected literature was analysed and mapped in order to identify core themes and topics, reflecting various research focuses in design and business studies. The 'synthesis by interpretation' approach (Rousseau et al., 2008) was applied to synthesise the selected publications. In this approach, key interpretations applicable to more than one study allow the identification of higher-order concepts that are not evident in primary studies. By synthesising interpretatively, we attempted to generalise and contextualise (Rousseau et al., 2008) the social phenomena of narrative, indicating how different research themes help explain different aspects of narrative and highlighting emerging insights as well as avenues for future research.

In the rest of this paper, we first review the core research topics according to the fundamental facets of narrative research in both design and business studies. Then, we highlight opportunities for cross-fertilisation across different streams and research topics and define research agendas for both design and business scholars.

PRINCIPLE FACETS OF NARRATIVE IN DESIGN STUDIES

After a broad and detailed review, three main research facets were synthetically identified in design studies, namely: 'narrative as competency', 'narrative as process', and 'narrative as artifact'. Although some arguments fit clearly into one category or the other, they often overlap; thus, the categorisations that emerged are not mutually exclusive (Figure 1).

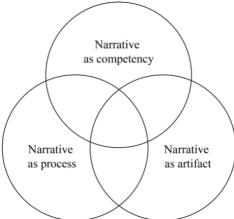


Figure 1. Synthesised facets of narrative-related design research

Narrative as competency

The first broad facet of research on narrative in design reflects a set of abilities, meta methods, and tools. In other words, this area refers to the 'language of designing' as the competencies that designers use in the reflective design process (Schön, 1983). This area includes three topics of research (design abilities, meta-level design methods, and design tools), which have collectively improved our understanding of the competency aspect of design practice from the viewpoint of narrative.

One of the essential aspect regards the **abilities** of a designer with respect to design skills, abductive sensemaking capacity, and empathy (e.g. Schön, 1983; Parrish, 2006; Koskela et al., 2018). Schön (1983) highlighted the essential competences of design, consisting of parallel ways of drawing and talking, which he called 'the language of designing'. Then, designing as 'a conversation with the materials of a situation' (Schön, 1983) leads to abductive insights (Koskela et al., 2018). As abduction is perceived as

the basic reasoning pattern of productive thinking and design thinking (Dorst, 2011), this design competence leads to abductive sensemaking.

Another important ability of design in terms of storytelling is 'cultivating empathy' (Parrish, 2006). Referring to John Dewey's effort to naturalise the concepts of logic and inquiry, Parrish (2006) emphasised that design stories can be seen as a form of dramatic rehearsal. He continued that empathy, as the 'ability to put ourselves in the place of other individuals (Eisenberg and Strayer, 1987) is a central component of dramatic rehearsal, and it is essential for creating valid design stories and successful designs.' Other scholars' notions resonate with the view of the designer as a screenwriter who is an expert of mise-en-scene, and design as a practice of creating a story world (Trocchianesi et al., 2011; Anzoise et al., 2008).

Some scholars perceive narrative and storytelling as an integral **meta-method** (Erickson, 1996; Hunsucker and Siegel, 2015; Iannilli et al., 2019; Oak, 2013). Much design is a social, collaborative activity, and does not just involve making things, so communication with others is vital. Stories effectively accelerate every phase of the process, including the earliest ideation phase and later prototyping phase; stories deal with indeterminacy through their traits of memorability and informality (Erickson, 1996; Hunsucker and Siegel, 2015). Design storytelling is 'a true narrative expedient' to integrate micronarrations into a single great story, and simultaneously, to experiment with new cognitive, strategic, and practical processes (Iannilli et al., 2019; Oak 2013).

Several aspects of **narrative as tool** have been emphasised (Grimaldi et al., 2013). For example, narrative is a tool supporting the design process; characteristic examples are cultural probes, personas, and visualisations (Grimaldi et al., 2013; Miaskiewicz and Kozar, 2011; Bresciani, 2019). These tools generate user insights and stimulate users and participants to tell their own stories, which subsequently inspire designers. In addition, the designer utilises narrative elements in the design process as a tool to trigger imagination and creativity. A good story provides an initial pass at what is important from the user's point of view, and then becomes a starting point for further exploration and the main guide for detailed design choices, such as materials, forms, and functions (Erickson, 1996; Grimaldi et al., 2013). In this context, the richness of a designer's 'semantic heritage' (Zurlo and Cautela, 2014) or 'repertoire of stories' (Erickson, 1996) is an essential resource to boost imagination and creativity in the design process.

Narrative as process

Second area of inquiry relates with process aspects of narrative practice in design discipline. It emerged from several sub-fields of design studies, which include design thinking, user centered design, engineering design, participatory design and social innovation, strategic design, and design fiction.

Storytelling and narratives have been gaining more attention as **core features of the design process** (Lloyd and Oak, 2018). This is also true for framing (Dorst, 2015), because frames are at least partly represented through the co-construction of verbal stories (Goffman, 1981). The concept of 'frame-narrative' is useful because this type of storyline is more capable of incorporating and adapting to changing events, and also focuses on processes which create connections among themes (Rein and Schön, 1996). When considering design as a co-creation process, several types of narrative operate in the negotiation of different opinions among design teams or even several stakeholders with different interests, i.e. 'value tension' (Lloyd and Oak, 2018), through creating a common language (Davies and Castell, 1992; Lloyd, 2000; Turner and Turner, 2003). In this context, the designer as 'design narrator' can play a crucial role in negotiating

value by utilising different stories such as 'past particular' ('empirical narratives') and 'imagined particular' ('fictional narratives') (Clausen, 1993; Lloyd and Oak, 2018).

In the context of a **company's innovation process**, several scholars have emphasised the role of designers as the 'interpreter' or 'catalyst' to drive innovation by leveraging their linguistic abilities and processes (Zurlo and Cautela, 2014; Price et al., 2018). In parallel with the different narrative frames that a company is confronted with and different organisational contexts, designers as 'interpreters' can translate the company's narrative, decoding and reconstructing it into new ideas, concepts, and innovative solutions, leveraging their 'semantic heritage' (Zurlo and Cautela, 2014). In other words, designers can be considered as 'hub-narrators', since they are placed at the intersection of socio-cultural models and the company's specific narrative frames, where there is a blank that needs to be filled (Zurlo and Cautela, 2014). This attribute of design in a company's innovation context was also underscored in new venture creation (Cautela et al., 2017; Cautela and Simoni, 2019). In empirical case studies of design intensive start-ups, specific business socio-narratives were observed to play a crucial role in legitimising the value of new ventures (Cautela et al., 2017; Cautela and Simoni, 2019).

In the field of participatory design and social innovation, the role of narratives and storytelling has been illustrated resembling **as collaborative actions** to release the potentiality of people and social community relationships (Anzoise et al., 2008; Galbiati et al., 2013). In the participatory design process, the act of listening is highlighted as the initial practical phase for collecting stories, expectations, and wishes from the community as tiny tales from everyday life (Ciancia et al., 2014). Designers as 'story-listeners' concentrate on gathering tiny stories that each have the potential to function as weak signals, in order to engage people in a big story (Bertolotti et al., 2016). Transmedia practice based on audiovisual artifacts and tools has been described as the key driver for successful implementation of collaborative actions (Ciancia et al., 2014). Both oral storytelling and conceptual and visual amplification have been observed to open social conversations between participants and designers (Anzoise et al., 2008).

Another important narrative research topic in the design process is **its fictional and futurity attributes** in the context of design fiction (Blythe, 2014; Raven and Elahic, 2015). In design fiction, as a subdivision or extension of the 'critical design' paradigm, 'fantasy prototypes' or 'diegetic prototypes' are considered to be a useful means of provocatively exploring a new design space that does not yet exist. By inserting a cognitively unfamiliar artifact into the narrative frame, the audience is more or less faithfully shifted into a storyworld where the diegetic prototype is a real object (Bosch, 2012; Raven and Elahic, 2015; Ralph and Wand, 2009). As Blythe (2014) insisted, 'Design fictions can take the form of narratives, short stories, films but also objects and semi working prototypes'. Even though there are different levels of fictionality, fictional narrative plays an essential role in design fiction, alongside or as a form of 'fantasy prototypes'. 'Narratives of futurity' can pioneer the possibility of applying narrative theory to future production, leveraging the temporality of narrative, which appears as a tense (Raven and Elahic, 2015).

Narrative as artifact

Finally, the designed object itself has been considered a narrative artifact (Krippendorff, 2005). From a narrative point of view, objects are interpreted as scripts that carry open codes; they are a visual set of the different relationships they may establish with users (Bertola, 2013). Moreover, an artifact as a narrative generates

continuous incipits, because it acts as a stimulator of evocations and narrations; it is a text that determines other texts (Zingale, 2013).

Designed artifact has been considered broadly from a semiotic perspective in the 'semantic turn' (Barthes, 1964; Krippendorff, 2005; Bertola, 2013; Deserti, 2013; Penati, 2013; Steffen, 2009). Especially in the context of **product experience**, based on the framework of Desmet and Hekkert (2007), Grimaldi (2018) developed another dimension of 'narrative product experience', which relates to aesthetic meaning, emotional experience, and the experience of meaning. Here, interpretation, time, and narrativity are underlined as fundamental elements, prompting a cognitive process in the user related not only to the retelling of the experience but also the memory of the experience and the in-the-moment interpretation of the sequences of events and cognitive/emotional processes which create a full experience (Grimaldi, 2018). Relating to the owner's self-identity, products and services are thought to help shape narratives about their owner's life, enhancing their well-being (Jordan et al., 2017).

Finally, in a broader sense, design has been advocated as a 'narrative system' with respect to its cultural (Baule, 2013; Bertola, 2013; Deserti, 2013; Krippendorff, 2005; Penati, 2013; Zingale, 2013). Design can be interpreted as a 'textual community' or 'narrative entanglement', a system in which multiple pervasive narratives are intertwined as a cultural system. There are connections of memory, connections with other objects, and stories about objects, all of which give continuity to a culture or object history that would otherwise be fragmented through different languages and techniques of representation. Design involves the continuous production of narratives. What design produces is always a moment of rebooting, never a landing. The output of design is both a conclusion and a restart (Baule, 2013; Bertola, 2013; Deserti, 2013; Krippendorff, 2005; Penati, 2013; Zingale, 2013).

PRINCIPLE FACETS OF NARRATIVE IN BUSINESS STUDIES

Meanwhile, in business studies, four areas of study were systematically reviewed, including organisational studies, strategic management, innovation studies, and entrepreneurship. In each of these fields, narrative has been studied as part of the traditional 'linguistic turn', with respect to specific managerial issues.

Narrative in organizational practices

The first broad area of narrative research in business studies reflects the 'linguistic turn' in organisational studies; this subfield has a strong tradition of exploring narrative approaches (Boje, 2001; Boyce, 1996; Czarniawska, 1997; Gabriel, 2000; Phillips, 1995; Rhodes and Brown, 2005). Scholars have explored narrative approaches in organizational theory (Boje, 2001; Boyce, 1996; Czarniawska, 1997; Gabriel, 2000; Phillips, 1995), defined organisations as storytelling systems (Boje, 1991), and conceptualised organisational studies as a set of storytelling practices (Czarniawska, 1998).

Narrative methods have been widely used in **organisational theory** (Boje, 2001; Boyce, 1996; Czarniawska, 1997; Gabriel, 2000; Phillips, 1995; Rhodes and Brown, 2005). In this view, the so-called 'narrative turn' or 'linguistic turn', refuting the correspondence theory of truth, challenges standard representations of reality by conceiving language (understood in the sense of any system of signs, e.g. numbers, words, or pictures) as a tool of reality construction rather than its passive mirroring (Czarniawska, 1997). This view broadly relies on concepts of narrative relevant to perspectives on reality, such as 'narrative mode of knowing' (Bruner, 1986), 'narrative paradigm' (Fisher, 1984) and 'social constructivism' (Barry, 1997; Berger and

Luckmann, 1967; Boyce, 1996), to see the world as socially constructed through narratives about human experience (Polkinghorne, 1987). The implications of applying this approach to organisational studies are substantial, with relevance not only to methods and processes, but also to the overall conceptualisation of the research enterprise. The idea that narrative comprises a sort of methodology (or set of methodologies) has played a crucial part in casting doubt upon conventional scientific approaches that define narratives and stories in opposition to facts and in subordination to theory and science (Rhodes and Brown, 2005).

Reflecting this 'narrative turn', organisations themselves have been considered as 'storytelling systems' that are enacted both through stories and through storytelling genres (Boje, 1991, 1995, 2008, 2014; Spair, 2020; Fotaki et al., 2020, Rhodes, 2001; Rhodes and Brown, 2005). A storytelling organisation is defined as a 'collective storytelling system in which the performance of stories is a key part of members' sensemaking and a means to allow them to supplement individual memories with institutional memory' (Boje, 2008). Weick's (1995) theory of sensemaking is considered the fundamental basis of this argument. In order to achieve sensemaking, which is 'about authoring as well as reading' (Weick, 1995), aspects of organisations in terms of the interplay between texts and activities at both individual and collective levels must be addressed (Bartel and Garud, 2009; Boje, 1991, 2008; Ricoeur, 1984; Weick, 1995).

A previous systematic review of **storytelling practices** in organisational studies revealed five themes, namely, sensemaking (and subverting); communicating (and manipulating); change and learning (and challenge); power (and dissent); and identity and identification (and alienation) (Rhodes and Brown, 2005). These pluralistic approaches collectively formulate the depth and reach of the contribution of narrative to organisational theory. They underline several contributions, namely temporal issues in organisations, the possibility of considering different meanings of organisational action, and a theoretical view of organisations as networks of interrelated narrative interpretations (Rhodes and Brown, 2005). Additionally, Beigi et al. (2019) emphasised research on critical storytelling voices to counterbalance the fact that storytelling is often misappropriated by those in power to preserve and maintain conventional power structures.

Narrative in strategic management

The second area of narrative research in business studies appears in strategic management, especially in strategic change and strategy-as-practice, also influenced by the 'linguistic turn'. Since Barry and Elmes's (1997) seminal work on strategy as narrative, several other studies have investigated strategy using narrative as an interpretative lens (Holstein et al., 2018; Kaplan and Orlikowski, 2013).

Barry and Elmes (1997) insisted that strategy can be considered as a particular kind of narrative; they proposed that narrative can be introduced as an interpretative lens in strategy scholarship. As both the telling and the told, strategies can be examined as a narrative process and as artifacts, encompassing narrativity. Depending on the narrativist's view, the fundamental outcomes to be achieved are credibility (believability) and defamiliarisation (novelty). In the context of **strategic change**, several authors have strongly argued that narratives initiate the construction of a new reality in the minds of organisational members, while satisfying the desired balance between novelty and familiarity (Dunford and Jones, 2000; Sonenshein, 2010; Holstein et al., 2018). In this view, the CEO's primary role in prompting strategic change was identified as "sensemaking" and "sensegiving" aspects (Gioia and Chittipeddi, 1991).

In a more practical dimension, many scholars have introduced a narrative approach into strategy-as-practice (Brown and Thompson, 2013; Fenton and Langley, 2011; Hardy et al., 2000; De La Ville and Mounoud, 2010; Kaplan and Orlikowski, 2013). Focusing on the practical aspects of strategy, they emphasised the discursive practices of strategic making and doing, as well as the strong potential for symbiotic linkage between strategising and storytelling (Brown and Thompson, 2013). Specifically, five specific benefits from narratology were highlighted, namely, 'humanising strategy research, dealing with equivocality, accounting adequately for polyphony, understanding outcomes, and sensitivity to issues of power' (Brown and Thompson, 2013). As a fundamental form of 'meaning making' that emerges from sensemaking activities, strategic texts as narratives are involved in a double relationship with the context and with the situation (De La Ville and Mounoud, 2010; Fenton and Langley, 2011). An aspect of temporal work has also been stressed (Kaplan and Orlikowski, 2013). Constructing a strategic account from multiple, divergent interpretations of the past, present, and future generates specific strategies that have crucial implications for organisational outcomes.

Narrative in innovation process

During the past ten years, the growth of interest in innovation processes has led to a specific focus on narrative—innovation interrelationships.

Narratives have been widely studied in relation to their role in reducing the complexity of innovation processes where uncertainty dominates (Araujo and Easton, 2012; Deuten and Rip, 2000; Bartel and Garud, 2009; Maclean et al., 2020). Bartel and Garud (2009) insisted that innovation narratives facilitated several aspects of coordination across actors and actions during each phase of the innovation process by enabling translation. Innovation narratives have also been argued as an essential aspect of organisational culture that condense employees' beliefs about a company's capability to innovate and sustain innovation (Bartel and Garud, 2009; Day and Shea, 2019; Deuten and Rip, 2000). The level of 'narrative infrastructure' established within organisations may determine the success or failure of attempts to construct innovation-promoting narratives (Bartel and Garud, 2009; Deuten and Rip, 2000). Along this line, several scholars demonstrated the essential properties and functions of innovation narratives (Bartel and Garud, 2003; Maclean et al., 2020; Müller, 2013; Becker and Müller, 2013). Temporality aspects have been strongly underlined, since every innovation has a narrative structure rooted in the company's past and present, while simultaneously envisioning the future (Bartel and Garud, 2009; Müller, 2013). Maclean et al. (2020) also demonstrated the crucial role of innovation narratives in accomplishing organisational ambidexterity. As a vehicle of knowledge creation and dissemination, narrative's essential capacity of 'adaptive abduction', with its richly textured and dynamic qualities, temporal ordering, and embedding of context, was underlined (Bartel and Garud, 2003).

Narrative in entrepreneurship

In line with the growing interest in innovation narratives, more attention has been paid to the relationship between narratives and entrepreneurship and emergence of new market categories. Specifically, entrepreneurs must build their legitimacy through approaches such as narrative and storytelling, because they lack evidence of former success, which other companies usually have.

Many scholars have convincingly demonstrated that narratives and stories play a central role in the processes that enable new businesses to emerge and **build their**

identity and legitimacy (Aldrich and Fiol, 1994; Clarke and Holt, 2010; Garud et al., 2014; Lounsbury and Glynn, 2001; Martens et al. 2007; Navis and Glynn, 2010; O'Connor, 2004; Smith and Anderson, 2004; van Werven et al., 2019). Given the challenge of their relative lack of cognitive and sociopolitical legitimacy, entrepreneurs graft the storyline of their new company onto existing, relevant, generally accepted storylines (O'Connor 2004; Garud et al., 2014). Crafting multi-dimensional narratives, including relational, temporal, and performative narratives, entrepreneurs attempt to contextualise innovation by establishing links with the past, present, and future to generate meaning (O'Connor, 2004; Garud et al., 2014). In addition to entrepreneurial goals of attaining independence and challenging existing normalities, their narratives evoke virtues including public, social, and moral concerns (Clarke and Holt, 2010; Smith and Anderson, 2004).

The role of cognitive capacity and several other tools have also been stressed. As the essence of the entrepreneurial cognitive mode, the entrepreneur's 'magical realm' or 'spirituality' was discussed. This cognitive capacity enables 'future-oriented sensemaking' by mitigating the risk inherent in uncertain futures (Ganzin et al., 2020). As an essential tool, the business model is underlined as a narrative and calculative device that allows entrepreneurs to explore a market and plays a performative role (Doganova and Eyquem-Renault, 2009). Metaphors were also described as key devices for them to develop a vision or mental model of their environments (sensemaking) and to articulate that vision to others (sensegiving) (Hill and Levenhagen, 1995).

FUTURE RESEARCH AGENDA

As crucial goal of the review, the potential benefits of cross-fertilisation among perspectives and lines of inquiry between design and business studies were identified. While exchanges have been taking place at the intersection between different research topics, especially within disciplines, the potential for cross-fertilisation across research disciplines is largely underexploited. New research avenues often emerge by bridging the gap between theories and disciplines through the creation of a common linguistic framework (Cooper, 1988; Strike and Posner, 1983). Following our comparison of the extant design and business studies literature, seven potential future research avenues have been identified (Figure 2). In short, core research topic emerged in the crosspoint of each four business fields and design narratives: narrative for organizational and managerial sensemaking, narrative for strategic change / strategy-as-practice, narrative for facilitating innovation process, and narrative for entrepreneurial identity and legitimacy building. It is also revealed that core traits of narrative are common research agendas between design and business studies: narrative for abduction, narrative for empathy cultivation and narrative for temporal work.

Design narratives for organizational and managerial sensemaking (organizational practices area)

The first research agenda that appeared from our review relates to sensemaking in organisations and the role of design narratives in it. Although management and organisation scholars have investigated sensemaking (Bartel and Garud; 2009, Boje, 1991, 2008; Kaplan, 2013; O'Connor, 2002; Weick, 1995), design's potential as a powerful partner has yet to be examined. Considering the traditional arguments in design related to sensemaking, e.g. design is about 'making sense of things' (Krippendorff, 2005) and is an 'abductive sensemaking practice' (Kolko, 2010), design undoubtedly has inherent sensemaking capacities, which could facilitate sensemaking in an organisation.

While early literature largely focused on the retrospective qualities of sensemaking, there are many managerial and organisational implications that should be theorized in a present and future-oriented sensemaking focus (Ganzin et al., 2020). In this vein, designers' future-oriented sensemaking practices could be essentially meaningful for cross-disciplinary research, taking into account that the traits of fictional narrative and futurity of design narratives. Can we conceptualize future-oriented sensemaking practices of design in terms of strategy making? How can design narrative practices contribute on entrepreneurial future-oriented sensemaking? Whether and how narratives by design facilitate organisational sensemaking?

Design narratives for strategic change / strategy-as-practice (strategic management area)

The role of design narratives in strategic change and strategy-as-practice could be a potential research topic, and is our second avenue. Although design's contribution to corporate strategy through corporate identity design has been highlighted (Gorb, 1990), more systematic research is needed on how design can impact strategy from a narrative point of view.

In strategy-as-practice argument, Dalpiaz and Di Stefano (2018) demonstrated that the way how strategy maker can construct and reconstruct meaning of change flexibly over time through narrative practice. In this line, it is meaningful to further investigate the role of design as strategic partner, which affect corporate change using powerful visual tools to make corporate strategy visible (Gorb, 1990). How design practitioners can contribute construct and reconstruct meaning of strategic change? How designer's texts can provide different understanding of the narrative practices for developing and enacting strategy?

Design narratives for facilitating innovation process (innovation process area)

As described in previous sections, both design and innovation fields have underlined the importance of narrative's role in the innovation process (e.g. Bartel and Garud, 2009; Zurlo and Cautela, 2014). Although the importance of the relationship between innovation narratives and designers has been pointed out from the perspective of design studies (Zurlo and Cautela, 2014), there is still a huge gap in understanding the mechanisms of design narrative's role in the innovation process.

We strongly believe that further empirical works and theoretical constructions are required to precisely establish how design narratives can contribute to facilitating the innovation process. To do so would require cross-disciplinary investigations with pluralistic theoretical perspectives, including innovation management, organisational studies, narrative- and storytelling-related design studies, and narratology. Additionally, research focusing on the narrative aspects of design/designers in innovation could open new perspectives on the role and expertise of design. How design narratives can facilitate innovation processes as cultural mechanisms, leveraging on their competencies, processes, and artifacts traits?

Design narratives for entrepreneurial identity and legitimacy building (entrepreneurship area)

The fourth avenue is related to the potential contribution of design narratives towards entrepreneurial identity and legitimacy building. As multiple entrepreneurship research arguments have shown, entrepreneurial narratives and storytelling have great beneficial impacts on new business creation and legitimacy building. Meanwhile, especially in the context of design intensive start-ups, the roles and potentialities of sociocultural

narratives in business models have been recently underlined (Cautela et al., 2017; Cautela and Simoni, 2019). However, narrative arguments in entrepreneurship have yet to be discussed from a cross-disciplinary perspective, further investigation in this area may represent a fruitful area for future research.

Further research may try to investigate whether and how design narratives can impact or guide entrepreneurial identity and legitimacy building. For instance, as business models have been underlined as a narrative and calculative device that allow entrepreneurs to explore a market and play a performative role (Doganova and Eyquem-Renault, 2009), transmedia narrative design practice (Ciancia et al., 2014) should be investigated to determine whether and how it can be a fundamental tool for legitimacy building. Moreover, supposing that design narratives contribute to entrepreneurship's legitimacy: what are the similarities and differences in the mechanisms and traits of narrative between design-intensive start-ups and new-technology start-ups?

Narrative for abductive process (common area)

Further systematic research is required to understand the fundamental relationship between narrative and abduction. Peirce (1931) originally defined abduction in contrast with deduction and induction. Bartel and Garud (2003) developed this argument in organizational settings, describing abductions involve using existing frameworks to draw inferences from narratives, and assuming that individuals abductively draw inferences from everyday work phenomena. Meanwhile, in design practice, Dorst (2011) strongly emphasised that abduction is a core and essential trait of various design practices, which could interface with organisational practices at different levels through abductively created frames. In this vein, further cross-disciplinary research can develop a fundamental understanding of how narratives in abductive reasoning function in different organisational settings, and specifically how design narratives can contribute.

For instance, although Pentland (1999) outlined some important properties of narratives for generating meaning, more research is needed on structuring these properties for effective communication (Bartel and Garud, 2003). Cross-disciplinary questions may develop further understanding of narrative for abductive process. Can design practices construct effective narrative communication, leveraging on their traits of abductive process? If so, how relevant narrative elements construct effective communication into integrated narration through design practices? What are the differences and commonalities of effective communication in terms of abductive reasoning in different organizational settings?

Narrative for empathy cultivation (common area)

Another avenue relates to aspects of empathy as a key factor in successful design narratives and storytelling practices in organisational settings. Presenting the view of 'design as storytelling', Parrish (2006) emphasised that empathy 'is essential for creating valid design stories and successful design'. Empathic design has also been of great interest as a new design approach that enables us to dive into ambiguous themes, including experiences, meaningful everyday lives, and emotions, and connect them to innovative solutions (Leonard and Rayport, 1997; Mattelmäki et al., 2014). Meanwhile, in the research on organisational storytelling, several scholars have explored storytelling at a more emotional level (organisational empathy) (Beigi et al., 2019; Fotaki et al., 2020). As a whole, empathy, as the ability to recognise the feelings of other individuals from signals they give off (Eisenberg and Strayer, 1987), has increasingly come to the forefront of studies in both design and organisation, especially in relation to narrative and storytelling.

In this context, it would be meaningful to examine how narrative practice can effectively cultivate empathy in organisational transformation. Considering the recent rapid rise of interest in design use at the organisational level, such as in organisational culture (Elsbach and Stigliani, 2018), there is value in exploring how empathy can be fostered in organisational contexts in light of the essential traits of narrative and storytelling design practices. Can design narrative and storytelling practices contribute to organizational transformation through impacting on organizational empathy?

Narrative for temporal work (common area)

The last avenue that emerged from the review relates to narrative's temporal aspects. Comprehensively looking at the review results, we noticed that all study areas have strongly highlighted the specific trait of narrative, i.e. temporality (Barry and Elmes, 1997; Bartel and Garud, 2009; Garud et al., 2014; Lloyd and Oak, 2018; Rhodes and Brown, 2005). Narrativist and philosopher Ricoeur (1984) precisely described this as follows: 'what is ultimately at stake in the case of the structural identity of the narrative function as well as in that of the truth claim of every narrative work, is the temporal character of human experience'. Dealing with either historical or fictional narratives, narrative makes the new thing – the yet unsaid, the unwritten – spring up in language, through its capacity to synthesise scattered events into the temporal unity of a whole and complete action (Ricoeur, 1984). We believe that this core trait of narrative could be investigated further from a cross-disciplinary perspective when it comes to company's innovation processes.

Research in this direction may inspire how design narratives can facilitate innovation processes, coordinating past, present, and future through cross-disciplinary lenses of innovation narratives, design narratives, and narratology. Kaplan and Orlikowski (2013) developed a model of 'temporal work' in a strategic context. They found that when organisational participants struggled with competing interpretations of what might emerge in the future, settling on a particular account required it to be coherent, plausible, and acceptable; otherwise, communication breakdowns resulted. Thus, it is crucial for both managers and researchers to further comprehend how the narrative mechanism can generate plausible interpretations that coordinate past, present, and future among organisational participants. In this context, design's role as an 'interpreter' could play a crucial role in weaving coherent temporal interpretative narratives. Then, emerging research question will be, how design narratives coordinate temporalities to accelerate innovation process?

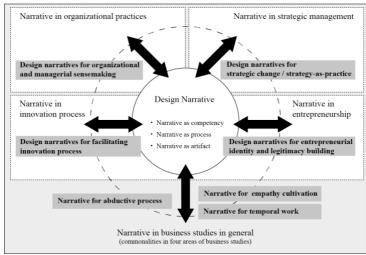


Figure 2. Overview of future research agendas of narrative in design and business

DISCUSSION AND CONCLUSION

This article reviewed and classified a substantial volume of narrative research in both design and business studies. The review of design studies shows how each research topic has individually produced rich knowledge about specific aspects of narrative and storytelling, and how, collectively, these research topics complement one another in illuminating three broad conceptual areas (narrative as competency, narrative as process, and narrative as artifact). Meanwhile, the review of business studies shows how researchers have traditionally focused on narratives and developed arguments adopting the 'narrative turn' in the subfields of organisational studies, strategic management, innovation studies, and entrepreneurship. Subsequently, we underlined potential areas of cross-fertilisation by bridging the interdisciplinary gap and creating linguistic and conceptual commonalities with respect to narrative and storytelling.

We believe that this review makes three main contributions to the literature. First, it provides a broad map of the various research topics about narrative and storytelling. using interpretative synthesis to identify higher-order concepts. In particular, three principle attributes were systematically synthesised, which in turn provided a holistic viewpoint on narrative in design studies. In business studies, the arguments of narratives in the four sub-fields: narrative in organizational practices, narrative in strategic management, narrative in innovation process, and narrative in entrepreneurship were reviewed and organized in an integrated manner. Second, by comparing the research across different disciplines, this review highlights opportunities for deepening cross-disciplinary conversations and draws attention to new possibilities for cross-fertilisation. The potentialities of design narratives are underlined in a broad range of business studies. In particular, the review reveals promising avenues of research in design narratives for organisational contexts, including sensemaking, corporate strategic tools, innovation narrative mechanisms, and entrepreneurial identity and legitimacy building. Meanwhile, core traits of narratives (abduction, empathy cultivation, and temporal work) appear to be common research agendas. Third, the review suggests how design studies could considerably enrich the comprehension of narrative and storytelling phenomena and contribute to practical management issues. Conceptually, design scholars are well equipped with perspectives on narrative practices in terms of competency, process, and artifact. These may further illuminate managerial and organisational issues, including a more pluralistic understanding of innovation narratives in innovation processes.

To sum up managerial implication for practitioners, this research provides an overarching taxonomy of design narratives that can guide them to introduce design as a potential core partner to generate narrative solutions for different sorts of managerial and organizational issues. Design can potentially make maximum contributions to wide ranges of management phenomenon. Through leveraging on its linguistic and narrative traits, which possess uniqueness in terms of competency, process and even designed artifacts, design could be potential 'narrative weapon' for business practitioners.

Furthermore, a potentiality of 'narrative turn' of design practices could be underlined especially for research communities. Barry and Elmes (1997) implied the paradigmatic change of viewpoint of strategy, citing a meaningful quote of narrativist Wallace Martin: "By changing the definition of what is being studied, we change what we see; and when different definitions are used to chart the same territory, the results will differ, as do topographical, political, and demographic maps, each revealing one aspect of reality by virtue of disregarding all others". Design practices could potentially be also revealed unveiled aspects yet by shedding the light of holistic narrative approaches, especially in the context of managerial and organizational matters.

This study has some limitations. By restricting itself to the Scopus database, it may not have attained complete coverage of narrative and storytelling articles in design and business studies. However, it is reasonable to assume that we covered a large proportion of available studies, combining the snowball method and advice from leading researchers. Finally, this paper proposes some research directions that are not necessarily exhaustive but represent initial stages.

Finally, we hope that by highlighting opportunities for both design and business studies scholars to engage in cross-fertilising research from both conceptual and practical perspectives, this review will contribute to a gradual repositioning of narrative and storytelling research as a legitimate area of empirical inquiry and theoretical reflection in both design and business studies.

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APPENDICES

Appen	Appendix 2. List of articles and books in business studies		4ppendix	Appendix 1. List of articles and books in design studies	
Facets	Facets Journals/Conferences/books	1	Facets	Facets Journals/Conferences/books	Articles
	Organization Studies (7)	Boyce (1995), Cappelen and Pedersen (2020),		Cumulus Conference (1)	Iannilli, Spagnoli and Penati (2019)
		Fotaki, Altman and Koning (2020), Hum phreys and		Design Issues (1)	Kolko (2011)
(Brown (2002), Phillips (1995), Rhodes (2001), Sapir		Design studies (1)	Dorst (2011)
S (S		(2020),		Interactions (1)	Erickson (1996)
tice	International Journal of Management	Beigi, Callahan, and Michaelson (2019), Rhodes and	(9	International Association	Lelis and Kreutz (2019)
brac	Reviews (2)	Brown (2005)	t) (t	of Societies of Design Research Conference (1)	
len	Journal of Management Studies (2)	Brown (2006), Buchanan and Dawson (2007)	ouə:	International Conference on Decianing	Grimaldi Fokkinga and Omaraccii (2013)
oitesi	Journal of Organizational Change	Вапу (1997), Воусе (1996)	ıədw	Pleasurable Products and Interfaces (1)	כיייים מני לי סארויים מיים כי מיים בילים (ביבים)
ueB	Administrative Science Ougherty (1)	Boie (1991)	00 S	Knowledge and policy (1)	Rein and Schön (1996)
u ou	Authorities Science Quality (1)	1001	e ə <i>i</i>	Knowledge-Based Systems (1)	Schön (1992)
ıi ə/	Academy of Management Journal (1)	Boje (1995)	vite:	FARN X DESIGN the 3rd International	Hinsinker and Siegel (2015)
ristir	Human relations (1)	Brown, Stacey and Nandhakumar (2008)	neV	Conference for Design Education Researchers (1)	ומוסמיים מומ חבשבו (בסדה)
nsM	Journal of Applied Behavioral Science (1)	Geiger and Antonacopoulou (2009)	ı	Chromosom Doronal Journal (4)	Transfer of partitional Do March (2011)
	Management Learning (1)	Taylor, Fisher and Dufresne (2002)		Justice Tourist (1)	Darrich (2006)
	Book (7)	Czarniawska(1997),(1998), Boje (2001), (2008), (2014), Gabriel (2000), Weick (1995)		Book(3)	Parisi (2005) Dorst (2015), Gorb (1990), Schön (1983)
	Human relations (2)	Dunford and Jones (2000), Hardy, Palmer and		Book chapter (2)	Koskela, Paavola and Kroll (2018), Oak (2013)
15)		Phillips (2000)		Design Studies (7)	Bresciani (2019), Clausen (1993), Davies and
) tue	Strategic Management Journal (2)	Dalpiaz and Di Stefano (2018), Gioia and Chittipeddi			Castell (1992), Lloyd (2000), Lloyd and Oak
ewe:		(1991)			(2018), Miaskiewicz and Kozar(2011), Tumer an
Beur	Academy of Management Journal (1)	Sonenshein (2010)			l umer (2003)
ew s	Academy of management review (1)	Barry and Elmes (1997)		A Matter Of Design. Making Society Through	Anzoise, Piredda and Venditti (2008)
ig9:	Business History (1)	Brown and Thompson (2013)		Science And Technology (1)	
trat	Journal of Management Studies (1)	Balogun et al. (2014)		Design Issues (1)	Zurlo and Cautela (2014)
s s e	Organization Science (1)	Kaplan and Orlikowski (2013)		DESIS PHILOSOPHY TALKS (1)	Bertolotti, Daam, Piredda and Tassinari (2016)
9vi:	Organization Studies (1)	Conton and and and and and		Dialogues for sustainable design and art	Galbiati, Ciancia, Piredda and Vezzoli (2013)
tem	Organization studies (1)	renton and cangley (2011)	(17	pedagogy. The AH-DESIGN project. (1)	
εN	Strategic Organization(1)	Hoistein et al. (2018)) ssa	Futures (1)	Ravena and Elahic (2015)
	Book (1)	De La Ville and Mounoud (2010)	900.	International Journal of Design Sciences &	Cautela and Simoni (2019)
uo	Industrial Marketing Management (1)	Araujo and Easton (2012)	ıd se	Technology (1)	
	MIT Sloan Management Review (1)	Day and Shea (2019)	9V	International Journal of Human-Computer	Grien Rauch Rednath and Ruettinger (2002)
	Organization (1)	Deuten and Rip (2000)	iter	Interaction (1)	(100-1) 100-1100-1100-1100-1100-1100-1100
i ui ses	Organization Science (1)	Bartel and Garud (2009)	ıeN	International journal of innovation science (1)	Bockman S & Barry M (2010)
	. Strategic Organization (1)	Maclean, Harvey, Golant and Sillince (2020)		International Journal of Technology and Design	Graff and Clark (2019)
sneV	Book chapter (3)	Müller and Becker (2013), Müller (2013), Bartel and		Education (1)	
. !		Garud (2003)		Journal of Design, Business & Society (1)	Cautela, Rampino, Colombo and Simonelli
	International Small Business Journal (2)	van Werven, Bouwmeester, and Cornelissen (2019)		New Media & Social Engagement International	Ciancia, Piredda and Venditti (2014)
		Holt and Macpherson (2010)		Conference (1)	
(ST)	Research Policy (2)	Garud, Gehman and Giuliani (2014) , Doganova and		PhD thesis (1)	Soleimani (2020)
diq	Aradomy of Management Boylew (1)	Aldrich and Fin (1994)		She Ji (1)	Price. Matthews and Wriglev (2018)
suna	Administrative Science Oceanary (1)	Navis and Gran (2010)		the SIGCHI conference (1)	Bivthe (2014)
ıksı	lournal of Business Communication (1)	O'Conner (2002)		Design Studies (1)	Pschetz and Bastian (2017)
ıçıet	Journal of Management (1)	Hill and Levenhagen (1995)	(ot)	International Conference on Designing	Steffen (2009)
ıə u	Journal of Management Inquiry (1)	Clarke and Holt (2010)	to 6	Pleasurable Products and Interfaces (1)	
٩vi	Organization Studies (1)	Ganzin, Islam and Suddaby (2020)	lithe	PhD thesis (1)	Grimaldi (2018)
ene	Organization Science (1)	Garud, Schildt and Lant (2014)	se a	The Design Journal (1)	Jordana, Bardilla, Herda and Grimaldi (2017)
N	Strategic management journal (1)	Lounsbury and Glynn (2001)	ovite	Book (1)	Krippendorff (2005)
	Book chapter (3)	Foss (2004), O'Connor(2004), Smith and Anderson	neN	Book chapter (5)	Penati (2018), Baule (2018), Deserti (2018),
		(2004)			Zingale (2018), Bertola (2018)