Teaching (with) Empathy and Creativity in Design

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Abstract: Empathy and creativity are desirable core design competencies. The relationship between these concepts, however, has remained largely unexplored – including how this relationship shapes, and is shaped by, design education. This work unfolds the creases between empathy and creativity, identifies their synergies and contradictions in design education, and defines a research programme to improve the teaching of and with creative and empathic dispositions. A comprehensive research programme for the advancement of empathy and creativity in design requires diverse and highly inventive approaches to design knowledge. Design researchers are encouraged to draw from their professional and personal areas of expertise to formulate new research questions that connect empathy and creativity, and to adopt and adapt methods of inquiry to study these connections.

Keywords: design education; ethics; collaborative design

1 Introduction

An increasing tide of policies and public opinions shows a lack of empathy, as seen in the ongoing case of the detention centres in the United States where children are being separated from their parents[1]. Examples from June 2018 include the *First Lady* Melania Trump wearing a jacket reading "I really don't care, do u?" while visiting the incarcerated children[2]. We argue that a sustainable society requires advanced understandings, actionable ideas, and effective interventions beyond the dominant agendas to creatively imagine preferred futures that improve well-being (Srinivasan, 2017). The capacity to imagine different futures requires a creative agency that is as radical as it is humane. We believe that advancing knowledge and transforming practice in the teaching of empathy and creativity are key to equip people to ask powerful questions, generate innovative ideas, and make more responsible and sophisticated decisions in everyday life. This is particularly relevant in design education, yet the connections between empathy and creativity are often treated superficially and remain largely unexplored. It is critical to show how they can be systematically developed through learning (McWilliam & Dawson, 2008). This work unfolds the creases between empathy and creativity, identifies their synergies and contradictions in design education, and defines a research programme to improve the teaching of creative and empathic dispositions and skills to prepare learners not only for future jobs, but to collaboratively tackle the pressing global challenges and formulate new opportunities to create a more inclusive, sustainable, and happy planet.

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[1] Washington Post 22 June 2018: https://wapo.st/2KbxCdj?utm_term=.fb472d1d498d
[2] Time Magazine 21 June 2018: http://time.com/5319150/melania-trump-jacket-texas

1.1 Empathy

Empathy is a multi-dimensional and complex construct historically intertwined with sympathy (Davis, 1996). One way to distinguish empathy is to denote an active attempt to "get inside" or reach out to understand and interpret the affective or emotional state of others, whilst sympathy refers to compassionate feelings that precede an intellectual effort to connect (Davis, 1996). The study of empathy is still fragmented, often focuses in different parts of a larger phenomenon, and has evolved along siloed disciplines and research communities. As a response, an "organisational model" emphasises the connectedness between constructs related to empathy including the person and the situation, cognitive and non-cognitive processes, and affective and non-affective outcomes (Davis, 1996). Perceptual, cognitive, and affective varieties of role-taking allow people to imagine, model, and infer the affective states of others (Davis, 1996). An examination of forty-three definitions portrays empathy as "an emotional response dependent upon the interaction between trait capacities and state influences, a process automatically elicited but also shaped by top-down control. The resulting emotion is similar to one's perception (directly experienced or imagined) and understanding (cognitive empathy) of the stimulus emotion, with recognition that the source of the emotion is not one's own" (Cuff, Taylor, Brown & Howat, 2014).

Empathy is often addressed in design education, although usually with unsupported claims such as that students "learn how to ask and how to observe the user in order to gain empathic knowledge about the user that he himself does not know or cannot verbalize" (Jobst & Meinel, 2012). Personal "empathetic habits" have been mapped onto design activities including "immersing oneself in another's life" (Barnes & du Preez, 2015). Such views of empathy across methods including Design Thinking (Jobst & Meinel, 2012) and Creative Problem Solving (Treffinger, Isaksen, & Stead-Dorval, 2005) are extractive, utilitarian and politically naïve. It does not help that a fundamental concept of empathy is missing in the design literature (Kouprie & Visser, 2009). The intellectual innocuousness explains a lack of attention to the power imbalances between designer and others, especially who they view as "users". The biases, the privilege, and the authority that designers enact when targeting, immersing on, interpreting, and then withdrawing from people's lives all go often unaddressed (Kouprie & Visser, 2009). The goal here in the elicitation of empathic design is to challenge views of empathy as a *useful means* to frame new problems, to ask new questions, and to generate creative ideas that are validated as "human-centred". Here the focus is shifted to questions of "useful to whom, useful for what?", raising ethical doubts about the right of designers to target, interpret, immerse themselves, and tackle the affective state of others, even under the guise of good intentions however sincere (Gerrard & Sosa, 2014). Recently, a more sophisticated perspective of empathy challenges the utilitarian sense and transfers empathy from the designer's ability to design *for* others or to dictate the relationship or experience *of* others, and adopts relational aesthetics to denote the capacity to *be with others* while preserving otherness as a value for "a more collaborative, sustainable, and creative society" (Devecchi & Guerrini, 2017). This angle of empathy shifts from designing *with* empathy, to designing *within* an empathic sociability (Devecchi & Guerrini, 2017) - a sense of empathy that connects to creativity as the capacity to *change with others*.

1.2 Creativity

Creative capacities challenge the status quo by imagining preferred situations or conceiving future worlds, and they transcend an artistic sense as well as the realm of cognition (Csikszentmihalyi, 2014). Paraphrasing the Universal Declaration of Human Rights, we are convinced that all human beings are born free and endowed with reason, conscience, and creative capacities, i.e., *free to imagine*. This capacity to instigate dissent and transform our social, physical, natural, and cultural environments is a defining human capability that played a central role in the evolution of our species (Asma, 2017). With an increasing brain capacity, increasing societal groups, and an increasingly complex aptitude for language, early hominins began to imagine a world that was different from the one surrounding them. This innate appetite for imagination manifests in all domains and aspects of our lives, from revolutionary scientific discoveries and influential artistic expressions, to subversive political ideas, persuasive philosophical argumentations, and the continuous evolution of languages and cultures.

We view creative capacities as diverse, universal, and organic. Whether in galleries or the street, from luxurious delights to audacious modes of subsistence, humans create new ideas and new artefacts (services, products, and systems) daily around the globe. Especially in Western academic and professional circles, creativity has been appropriated from around the 1950s by elite groups in positions of power, whether motivated by profit or as gatekeepers of the cultural establishment (Csikszentmihalyi, 2014; Reckwitz, 2017). People have an extraordinary power to creatively frame new and unprecedented problems (Sosa, Connor & Corson, 2017). Unfortunately, schooling, societal, and consumption structures often weaken and kill the creative power of most people (Illich, 1973) in ways that are convenient to those in power and the sanctioned "creative class" (Peck, 2005).

The dominant research paradigm for the study of creativity is built upon unexamined assumptions such as its use to separate "creative" from "non-creative" individuals (Power et al., 2015). Not surprisingly, too many people are disempowered and exhibit low creative self-efficacy (Karwowski & Kaufman, 2017). Teachers' beliefs about creativity and their behaviour in the classroom carry important weight. Studies about how teachers conceive of creativity, whether innate or acquired, and their attribution of creativity to their students often show that whilst most teachers may consider creativity as suitable for development, they simultaneously recognise it in only a very small proportion of their students (Aish, 2014).

1.3 The Empathy-Creativity Nexus

It is revealing that an initial literature search in the cross-over of empathy and creativity shows a scant overlap between these seemingly central concepts for design education and practice. A search applied that includes both words in the title (search parameter "allintitle" in Google Scholar, June 2018) yields a mere 78 results. Moreover, out of 2795 articles citing a classic textbook on empathy (Davis, 1996), only one has *creativity* in the title (Boltz, Henriksen, & Mishra, 2015). A search for *empathy* in the top books on creativity returns null or marginal results, and in the thirty volumes of the Creativity Research Journal since 1988, not a single article includes *empathy* or *empathic* in the title. A systematic literature review is recommended to inform a research programme linking empathy and creativity in design.

Whilst creativity can be defined as the trigger of change, empathy gives purpose to change. Both empathy and creativity are viewed here as innate human capacities that lead to well-being, and both are developed through learning. They are also deeply personal and intimate constructs that are experiential in nature, yet they have a fundamental societal nature, as humans are empathetic toward *others*, and are attributed creativity by *others*. A key link between empathy and creativity is imagination considered as the source of "fellow-feelings" (Davis, 1996). In this sense, empathy may be viewed as using imagination for consensus, whilst creativity uses imagination for dissent. Ethical tensions in creativity include breaking rules, challenging authority and tradition, feeding on conflict and competition, and risk-taking (Baucus, Norton, Baucus, & Human, 2008), all of which involve behaviours informed by the consideration for others. By "others" it is wise to include empathy towards nonhumans (Forlano, 2017). Next, we examine the challenges and opportunities in design education.

2 Teaching (with) Empathy and Creativity

This section presents insights from teaching empathy and creativity as content matter including competencies, dispositions, skills, and learning objectives (McWilliam & Dawson, 2008), as well as insights about teaching design empathically and creatively. To teach empathically denotes a radical departure from "banking" education where the experts transfer knowledge onto students (Freire, 2000). To teach empathically opens a dialogue where the responsibility and ownership of learning is appropriated by the learners in a mutually enriching social encounter (Biesta, 2015).

Design education inherits pedagogical practices that include student autonomy and peer learning to an extent. However, studio learning carries a strong master-apprentice power relationship that enacts authority and hierarchy issues typically associated to banking education (Freire, 2000). The lack of empathic approaches to design education are identified in methods such as Design Thinking (Jobst & Meinel, 2012) and Creative Problem Solving (Treffinger et al., 2005), often applied prescriptively and mechanically imposing a mandated step-by-step process from the certified facilitator (Jobst & Meinel, 2012). A fixed starting state and a defined solution sequence go against all we know about ill-structured or wicked problems (Goel & Pirolli, 1992). Recipes to design remove the agency of teachers as well as learners, as they impose a predefined journey that is sanctioned by the promoters of those techniques. Alternatives to such formulaic methods are required that are more dialogical, generative, and empowering (Berger, 2014).

Likewise, there is a marked difference between teaching creativity and to teach creatively (Jeffrey & Craft, 2004). When the "expert creative" is summoned to teach creativity, there is a logical preservation of the myth that only certain type of people are creative, i.e., the type instantiated by the person teaching. This tacit power tension permeates teaching across subjects and disciplines: the expert structural engineer teaches her students how to become, like her, good at solving equations to calculate the optimal beams for a structure. The problem becomes clear when creativity is recognised as uniquely personal and deeply experiential; i.e., imagine the consequences of imitating what happy people do as a way to reach one's own happiness. Along this line of reasoning, people may logically subscribe to the dictum that "creativity cannot be taught", a view that stems from a deep misunderstanding about what both creativity and teaching actually mean. In such power-mediated relationships, teachers are enacting a lack of empathy for the learners portraying themselves as role-models, which runs against ideals of creative capacities

being diverse and deeply personal and situational. Teaching creativity requires deep empathy and humility to realise that teachers learn *with* and *through* learners new ways of becoming and being creative.

Paradoxically, most books and training programmes of creativity show a worrying lack of originality (Jeffrey & Craft, 2004; Rehn, 2011) as evidenced by the re-use *ad nauseam* of a small set of tropes and old exercises such as the "nine-dot problem". In that exercise, nine dots are arranged in a set of three rows in a piece of paper and the "challenge" is to draw four straight lines that go through all the dots without taking the pencil off the paper. Such exercise seems to have led to the asinine expression "to think outside the box" (Pally, 1955). Like many of the cases and exercises recurring in creativity books, the "nine-dot problem" is ill-fitted to define, apply or illustrate creative problem solving as it has one single *correct* answer, going against the principle that design problems have a range of solutions (Rittel & Webber, 1973). Another rather unoriginal and uncritical approach to creativity training is based upon the adoption of artistic interventions such as painting, acting, or music (Antal & Strauß, 2013). These "creative" activities can often be unproductive or even counterproductive to teach creativity outside artistic fields, as they can emphasise aesthetic criteria and technical skill rather than focus on the core dispositions of creativity (McWilliam & Dawson, 2008). Creative activities that explicitly target empathy include ideation in Empathic Design (Mattelmäki, Vaajakallio, & Koskinen, 2014) and nudging strategies (Selinger & Whyte, 2011). Teaching creativity through empathic activities demands an ethical sensibility of how activities are received by learners (Light & Akama, 2012).

2.1 Challenges and Opportunities

Design education has yet to demonstrate how empathy and creativity as key design competencies interact, build on and outweigh each other. Tensions, paradoxes and opportunities are reviewed in this section. On the one hand, prominent creators consistently show a lack of empathy and ethics. Whilst Thomas A. Edison is often celebrated as the most prolific inventor, his infamous stunts electrocuting animals in the "War of Currents" are well documented (McNichol, 2011). Records also exist showing the racism and bigotry of other original thinkers including James D. Watson, Albert Einstein, and Henry Ford. More recently, a growing number of cases is revealing appalling unethical behaviour by TV and film male personalities, many of whom have publicly admitted their deplorable behaviour, or have been found guilty by juries. A thorough biographical study of exemplary creators across domains revealed three types, only differentiated by their level of unempathetic abilities: "disregard for others, difficult toward others, and frankly sadistic" (Gardner, 2011). Those creators (mostly male, mostly Western) are depicted as "committed obsessively to their work" and their self-confidence and self-absorbed nature merging with "egotism, egocentrism, and narcissism" (Gardnes, 2011, p. 364). Those creators also showed "childlike features" include curiosity and defiance of convention as well as selfishness. Beyond personality quirks, the concept of "fruitful asynchrony" consistently exhibited by these creators suggests a deliberate and sustained behaviour to exploit, or profit from, a misfit or lack of smooth connections with others. By seeking conflict and dissent, the exemplary creator "stands out in the extent to which he or she sought conditions of asynchrony, receiving a kind of thrill from being 'at the edge' and eventually finding it difficult to understand why anyone would not wish to experience the fruits of asynchrony" (Gardner, 2011). These stories suggest a tension between empathy and creativity.

One way to interpret the link between creativity and (the lack of) empathy, is that creative agency may involve empathy with people in future *imagined* situations rather than with those at present. This is captured by "empathic problem solving" (Weeks & James, 1996) which interprets empathy in creativity not so much toward another person but towards an original idea or a dream. A second potential explanation for the empathy-creativity link is indirectly implied in the study of personal identities of designers (Elsbach & Flynn, 2013). Designers identified as "artistic" are more concerned with their own standards of creativity and with having control over an entire project from initial concept to final production, an emphatic distinction from "problem solving" designers who expressly consider the needs and concerns of others, are more open to work on refining the ideas of others, and are more interested in getting others involved in a project (Elsbach & Flynn, 2013). A third approach to the tensions in the creativity-empathy nexus is the notion that "cold-blooded" rational decisions are necessary to trigger and promote disruptive change, which aligns with the finding that more rationalistic approaches increases unethical behaviours (Zhong, 2011). The ability to regulate intuition and rational decision making would explain empathic capacities to deal with trade-offs and reach compromises in creativity. Such capacity to manage empathic design decisions would also explain the capacity to respond to change resistance. The Schumpeterian concept of "creative destruction" points to the harmful side of creativity, including the effects on how people who are emotionally dependent on the status quo may feel when faced with disruptive change.

2.2 A Systems Model of Empathy and Creativity in Design

The examination of the intricate relation between empathy and creativity in design leads us to formulate a preliminary framework for their study. Figure 1 shows an initial mapping to distinguish means from ends. The intersection of "ill intentions" and "negative means" in Figure 1 acknowledges that creativity can be approached empathically as well as for dark or evil purposes (Cropley, Cropley, Kaufman & Runco, 2010) such as in unprecedented acts of crime and terrorism that change the rules of the game[3]. The quadrant formed by the intersection of "good intentions" and "negative means" in Figure 1 denotes the "Faustian bargain" defined as the choices made by exemplary creators to *pay back* by sacrificing themselves and treating others cruelly and sadistically using them to advance their ideas (Gardner, 2011, p. 369). This quadrant also includes all unintended consequences, hidden costs, and secondary effects of innovation, particularly technological breakthroughs which tend to exacerbate socio-economic gaps (Srinivasan, 2017). The quadrant between "ill intentions" and "positive means" in Figure 1 can be illustrated by the industry of diamonds engagement rings (Treffinger et al., 2005), as well as marketing scams and pyramid schemes where a minority devises creative means to deceive large groups of people who voluntarily participate. The quadrant between "Good Intentions" and "positive means" in Figure 1 represents the goal for twenty-first century education that we advocate here. Considering the spectrum between the Faustian creativity and Well-being quadrants, design educators can critically examine and reflect upon their choices and framings of learning activities, deliverables, assessment criteria and deadlines to assess the impact of their teaching in the learning experiences of young designers. We thus propose a systematic programme of research to better understand and support the teaching and learning of radical creativity via considerate and humane means.
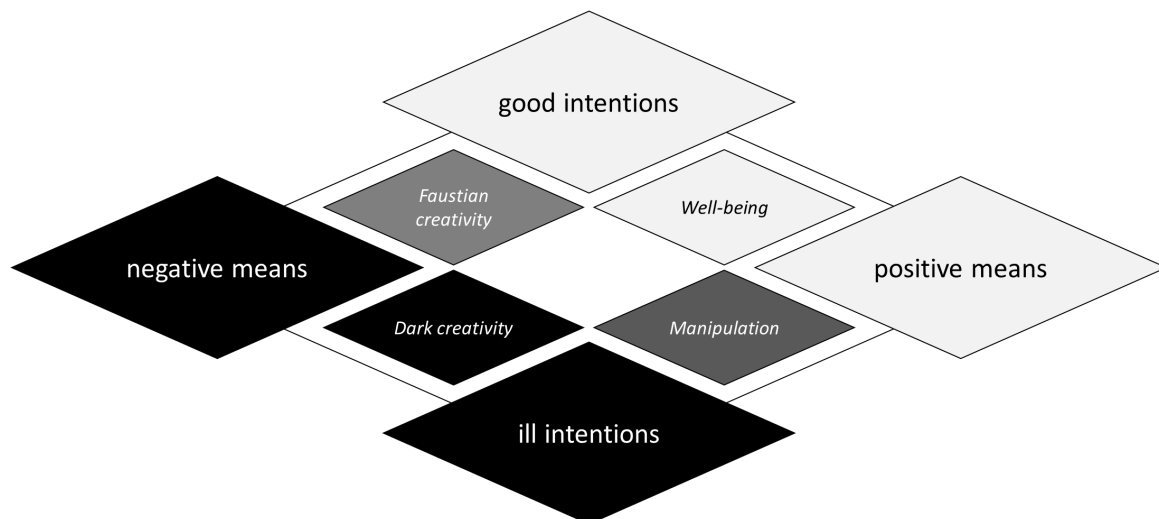

Figure 1. Framework to examine empathy and creativity synergies and tensions by juxtaposing means and ends.

3 Research Questions

Research questions critically inform the choice of research methods, define what constitutes evidence, and outline the type of outcomes and expected contributions to knowledge (Kara, 2015). We suggest that comprehensive, multi-method, and creative research approaches be used to amplify our understanding and inform future pedagogical practices. A thorough and systematic literature review can help identify the synergies and tensions between empathy and creativity in design -of which only an initial sketch is presented here. This section presents illustrative research questions to orientate a cross-disciplinary inquiry on empathy and creativity in design.

The lack of theorization on the empathy-creativity nexus presents an opportunity for in-depth studies of how designers experience and perceive these behaviours (Baucus et al., 2008). Inductive methods would reveal definitions and connections based on relevant theories of empathy and creativity from psychology, organizational culture, social psychology, education science, and other areas where these constructs are studied separately. Sample questions to base grounded-theory studies are shown under the heading "What is it?". The examination of learning experiences in design could reveal how empathic and creative capacities interact and complement each other in design education. Sample questions about the art and science of teaching are shown under the heading "How to measure and learn it?".

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[3] Las Vegas shooting: How it will impact hotel security: https://globalnews.ca/news/3790116/las-vegas-shooting-how-it-will-impact-hotel-security

The apparent complexity of relations in the empathy-creativity nexus invite research into the mutual effects of these competencies in the design process. Questions under "How do they relate?" examine interaction effects between empathic and creative behaviors. From the initial examination presented in this paper, examining issues of power is likely to reveal important insights about empathy and creativity in design as illustrated in the questions under "Risks and opportunities". Since both empathy and creativity are life-nurturing and contribute to well-being, sample research questions to examine their roles for sociability and conviviality are depicted under "What for?".

1. "What is it?" research questions
   Grounded theory research questions: How do professional designers experience empathy in their creative practice? What are the connections that designers and design students recognize in their practice or education between empathic and creative traits? What distinguishes designers and design students from other people in their integration of empathic and creative characteristics? How do personal, demographic, or cultural factors shape empathic and creative characteristics of designers? What are the constructs and indicators that are appropriate to measure empathy and creativity capacities in design?

2. "How to measure and learn it?" research questions
   Questions about learning: What are effective teaching strategies and practices for empathy and creativity across contexts? How to better teach both capacities in tandem, and how may order effects shape the learning of these capacities? How may we distil or extract the learning value from more conventional art and design interventions to teach empathy and creativity? What learning technologies are more appropriate to teach these competencies in design? How may strategies based on narrative, gaming, or Kohlbergian dilemmas be used in the design studio to teach these competencies (Runco & Nemiro, 2003)? What makes community and place-based education effective to teach and apply empathic and creative design? How may the ordering of learning empathic and creative competencies affect their learning in design? What are the control mechanisms to regulate empathetic skills throughout the creative process?

3. "How do they relate?" research questions
   How do creative designers vary in their empathic capabilities (Elsbach & Flynn, 2013)? How may an emphasis on empathy lessen or augment creative ideas? How do individual or cultural empathic traits determine creative behavior in ways similar to personality and domain factors? How to foster creativity in design without encouraging unempathetic attitudes (Baucus et al., 2008)? What are the effects of conflict and "fruitful asynchrony" in the design process and what are the roles of empathy and creativity to manage the type of conflict conducive to creativity (Gardner, 2011)? How do cognitive and meta-cognitive approaches to empathy and creativity interact?

4. "Risks and opportunities" research questions
   What are the power imbalances in empathic discourses in design? How is otherness defined in empathic design? How may creativity be applied to identify and redefine the other in design? (Forlano, 2017). How may systemic analyses help identify and tackle the risks and trade-offs of empathic and creative design? How may simplistic and biased approaches in empathic design backfire resulting in paternalistic or ableist design decisions? What methods are more appropriate to empower users to elicit their own affective states, rather than for designers to try to get inside the mind of others? What design processes may lead designers towards condescendence when they target users with the intention to change their affective states? How may empathy and creativity be effectively applied to design for inclusiveness (Langdon, Clarkson, Robinson, Lazar, & Heylighen, 2012)? How may empathy help the advancement of non-dominant (Western) paradigms of design (Akama, 2017)?

5. "What for?" research questions
   What empathic dimensions affect the transition from mono-disciplinary to multi and cross-disciplinary collaborations (Fruchter, 2001)? How may empathy be used by designers to support reflective practice? What "Faustian bargains" are made by professional designers?

The research questions sampled here lead to a universe of research methods to meet the required heterogeneity and variation desired when studying complex realities (Law, 2004). Some of these methods prioritize inductive approaches that yield rich qualitative insights to augment definitions, reveal critical themes, and formulate new theoretical groundings. Others support deductive approaches where variables are defined from existing theory and their effects measured objectively. A comprehensive research programme for the advancement of empathy and creativity in design requires diverse and highly inventive approaches to knowledge (Law, 2004). Design researchers are encouraged to draw from their professional and personal areas of expertise to imaginatively define, plan, and execute their journeys of inquiry by mixing, adapting, and prototyping methods.

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