The empathic (r)evolution. Lessons learned from Covid-19 to design at the community, organization, and governmental levels.

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ABSTRACT

The pandemic has revolutionized economic, social, and political models and broken down private and public systems, perhaps irreversibly. The gap between top-down and bottom-up approaches has widened, favoring divergences between centralized approaches and distributed solutions. The need to rethink rhythms, places, organizations and governance models emerged, together with the need to rethink the way we design and create relationships. This paper suggests the adoption of an empathic component in the governance of complex ecosystems to make them more resilient to unexpected phenomena such as Covid-19. The aim is to bring a design perspective while discussing the need for an ‘empathic revolution’, namely the adoption of empathy as a lever of innovation for communities, businesses, organizations, and governments. The hypothesis is to adopt empathy not only to understand the users’ needs in the development of new products and services, but to extend its adoption also in organizational changes up to transformative processes. In the first part, empathy is described through an extra-disciplinary observation. The second part outlines how empathy has been adopted in the design field. The third part analyzes - through the empathic component - some phenomena that occurred during the pandemic at a community, organizational, and governmental level.

Keywords: Complex ecosystems, Communities, Design Scenarios, Empathy, Governments, Organizations.

INTRODUCTION

Covid-19 caught us off guard. We have witnessed a global phenomenon that has rapidly changed the economic, social, and environmental scenarios in which we have lived and operated for decades. We have been hit by a huge and unexpected change that has magnified physical distances and social differences. Due to blocking restrictions, many companies and organizations are at risk or bankrupt with the effect of losing jobs for thousands of workers. In the same way, the public administration faces an organizational crisis that falls on all national systems. A few months were enough to break down private and public systems, perhaps irreversibly. As a result, the gap between top-down and bottom-up approaches has widened, favoring divergences between centralized approaches and widespread and distributed solutions. What can we learn from this unparalleled experience? A need to rethink rhythms, relationships, places, organizations, and governance models has emerged together with a need to change the current ways of producing goods and services, of designing and the creating relationships. The paper debates the adoption of an empathic component in the governance of complex ecosystems to make them more resilient to unexpected phenomena
such as Covid-19. Therefore, the aim is to bring a design perspective into the post-Covid-19 debate, discussing the need for an ‘empathic revolution’, namely the adoption of empathy as a lever of innovation for communities, businesses, organizations, and governments.

In the first part, the concept of empathy is described through an extra-disciplinary observation. The second part outlines how the concept of empathy has been adopted in the design field. The third part analyzes - through the empathic component - some phenomena that occurred during the pandemic at a community, organizational, and governmental level.

1. WHAT IS EMPATHY?

Empathy is commonly defined as the ability to step into another’s shoes and observe reality through someone else’s eyes and feelings. To be empathic means understanding feelings, points of view, experiences that are part of another person’s life.

There is no one empathy theory (Pinotti, 2010). The academic and literary world has given great importance to empathy: the concept is at the center of many humanities: metaphysics and aesthetics, religion and ethics, psychology and psychoanalysis, sociology and anthropology, and even art. It is also explored in biology and zoology. In the neurological field, empathy is linked to mirror neurons (Rizzolati & Gomi, 2016) which belong to the empathic brain (Keysers, 2011) which allows us not only to understand the other’s point of view but to anticipate intentions and needs because others are perceived as an extension of ourselves. In more recent times, it has been included in the design vocabulary.

Recent studies describe empathy according to two components. An affective, more instinctive, linked to the subjective experience of the others’ emotions and the cognitive one, described as the ability to understand the others’ motivations (Bernhardt & Singer, 2012; Decety, 2011; Shamay-Tsoory, 2010). In summary, the first refers to the emotional state and perception of what the other feels, for example, automatically responding with a smile to the feeling of well-being. The second is an understanding of what the other is experiencing mediated from an intellectual point of view (Mead, 2015). Therefore, building the right balance between the two components becomes the basis of the very concept of empathy.

In his book, The Empathic Civilization: The Race to Global Consciousness in a World in Crisis, Rifkin (2010) suggests the need to find new tools for sharing and creating interconnections that the author recognizes as the real strengths of the Third Industrial Revolution. In an unforeseen circumstance such as that of Covid-19, or other contexts affected, for example, by natural disasters, we have noticed this even more as the empathic dimension can be extended not only to the anthropocentric sphere but also to the biosphere (Brow et. al., 2019).

Bringing this discussion back into the design field, we can imagine that designers must acquire knowledge about users, their context and the ecosystems of which they are part (cognitive component) and, at the same time, understand their emotional state (affective component) (Kroupie & Sleeswijk Visser, 2009) of individuals and distributed communities. Therefore, empathy is a concept at the basis of the human relationship and is linked to the design field precisely because both the design process and the resulting solutions are characterized by relationships between people, organizations, and systems. It is precisely through relationships that value is created.
2. EMPATHY AND DESIGN

Understanding users, their experiences, perceptions, and emotions is at the basis of the design process (Sanders & Dandavate, 1999; Battarbee & Koskinen, 2005; Sleeswijk Visser et al., 2005). Design Thinking, Human-centered Design, co-design, and service design include practices derived from user-centered design and participatory design by putting end-users (and their relationship with the context in which they operate) at the center of the process. Similarly, practitioners and companies have learnt the importance of knowing and listening to their customers and users beyond marketing analysis (Battarbee & Koskinen, 2005; Leonard & Rayport, 1997; Sanders & Dandavate, 1999).

Although empathy became central in design, it was first explored in the marketing field when Leonard and Rayport (1997) published the article "Spark Innovation Through Empathic Design" in the Harvard Business Review. The authors describe ‘empathic design’ as a series of techniques able to understand unexpressed needs. This concept was turning point for the idea that the development of new products should be driven by users, generating financial rewards, while modifying the corporate strategy itself. They describe a five-steps process, integrated with market research. It involves observation, data acquisition, reflection and analysis, brainstorming, and prototyping phases, and highlights the importance of the research, prototyping, and testing before the launch on the market. In the business field, empathy is also considered a key element in designing experiences (Pine & Gilmore, 1999) in order to create value for the company, including emotions, values, and meanings as design objects.

Koskinen et al., (2003) define ‘empathic design’ as the ability of designers to meet users’ needs and understand their lives and experiences (putative, potential, or future). Kouprie & Sleeswijk Visser (2009) describe a design framework by analyzing the empathic concept as design quality and outlining some design techniques that support empathic processes such as storytelling, personas, scenarios, storyboards, and role-playing.

In general, designers use empathy in two broad areas: the first as a tool to design, transforming emotions into design attributes, the second to acquire insights through the users’ involvement in order to obtain data to be used in the design process (Gasparini, 2015). Koskinen et al. (2003) offer a point of view on the role that empathy has in the design process through methods and practices. These methods need to be visual and low-tech; they require interpretative and iterative phases and are also characterized by a fun component. Such tools can facilitate the application of an empathic approach in design, in particular, Kroupie & Sleeswijk Visser (2009) identify three classes of techniques: those used in research, those in communication, and those relating to the creative phases. In the first case, they refer to those techniques borrowed from ethnography in which designers come into close contact with users (e.g., contextual interviews). The second area refers to the techniques used to view and share data and results inside a design team when it is not possible (due to time or resources) to have direct contact with users (for example, cultural probes). The third describes how the designers simulate the user experience (for example, experience prototyping). There are numerous examples of tools based on the empathic relationship between designers and external communities that include a wide range of storytelling techniques, role-playing games, bodystorming, and others. The goal is always to fully understand users' behaviors and experiences and build knowledge created beyond numbers and general (or stereotyped) descriptions. Kroupie & Sleeswijk Visser (2009) also outline a design-based framework putting empathy at the center of the process and divided it into four phases: (1) discovery, (2)
immersion, (3) connection and (4) detachment. In the beginning, it is about entering the world of users and understanding its characteristics. The immersive phase is characterized by the designer’s ability to absorb users’ experiences without interfering with them and, therefore, without judging them. The “Connection” phase concerns the moment in which the designer uses the emotional and cognitive component to understand the meaning of what has also been observed through personal experience and memory. In the “Detachment” phase the designer takes a step back in the expert role, giving a design meaning to the knowledge acquired. This process, according to the authors, also highlights three key elements of empathy in design: (1) motivation in adopting empathic processes and techniques, (2) awareness that a degree of elasticity in entering and leaving users’ life is necessary, balancing the emotional components and cognitive reasoning, (3) time as a crucial element of the process, therefore the lack of time is often a barrier to the adoption of an empathic process.

When considering design in relational terms, the empathic dimension becomes an essential element to deal with the complexity of processes, solutions, and contexts through diverse approaches and perspectives. What is being proposed in this document is considering the use of an empathic approach in design not only to understand the users’ needs in the development of new products and services (e.g., user-centered design) but extending its adoption also in organizational changes (e.g., co-design, strategic design, design thinking) up to transformative and systemic processes (e.g., transition design, transformation design, design for policy, design for social innovation).

The following sections offer some reflections deriving from the observation of some phenomena that occurred during Covid-19 and on the hypothesis that the adoption of an empathic approach can generate solutions that take into account the complexity and contextual factors, creating value for individuals, communities, businesses, organizations, governments, and environment as well.

3. PHENOMENA OF EMPATHY IN THE PANDEMIC

It will be not easy to forget the date of March 11th, 2020, when the WHO Director-General’s speech announced that the Covid-19 epidemic was a pandemic.

Nonetheless, even before the pandemic declaration, many cities had initiated security measures by closing schools and offices. In Italy (one of the countries most affected by the virus), the first Covid-19 cases date back to June 21st in Lombardy. On the March 5th, all schools have been stopped, as well as commercial establishments, factories, cultural sites such as cinemas and theaters. The same happened to houses of worship, and even all sports initiatives were mostly suspended. Travel and relationships began to resume in early June, but they are still far from returning to a “normal” everyday life. In conjunction with the start of the lockdown, the Borsa di Milano showed a decrease of almost 30% on March 10th, recording the problematic situation of the entire economic system.

The pandemic is a sudden emergency that has revolutionized habits, daily life, economic, social, and political models. A moment of uncertainty, in which people, organizations, companies, governments have had to rethink the way they relate, finding new balances between people, technology, business, and the environment. In the light of such challenges, how do we interpret which products and services are desirable, feasible, and viable? The criteria and processes for creating and measuring value are going through a crisis, underlining the fragility of current socio-economic, political, and environmental systems. These
transformations have highlighted a collective urgency: the overcoming of current social, economic, and production models and the need to implement solutions capable of creating value, starting from relationships and collaboration.

The paper discusses the adoption of an empathic condition to face uncertainty and change, considering the contexts in which we design as complex ecosystems. The following sections describe three scenarios in which empathy can be considered as a crucial element for creating value for communities, organizations, and governments.

4. EMPATHY AT THE COMMUNITY LEVEL

The Covid-19 emergency stressed the importance of the ‘community factor’ so the importance of ties, solidarity, and social cohesion. We have witnessed various initiatives that have built or strengthened communities around a common purpose, both utilitarian and recreational adopting strategies to connect the digital and physical spheres.

New local services have emerged to respond to the communities’ needs. Volunteers distributed goods and medicines to frail people. Collection points have been created to offer food to needy families. Cultural events, involving condominiums or neighborhoods, have been launched, such as cinemas using the walls of buildings or improvised concerts played from balconies. Lessons for playing sports or playing musical instruments have been spread on the web, and new cultural services have also appeared, such as reading fairy tales on the phone to offer children a moment of sociability (www.rodarialtelefono.it). Initiatives to support local communities have spread around the world. One case is the Covid-19 Community Challenge, a group born online during the pandemic to support and create service platforms for the community, offering babysitting services, assistance to the elderly, and other forms of mutual aid.

Another example is the creation of handwashing services for low-income communities in The Gambia. The Gambia Innovation Center has distributed water pumps to be used with the feet for washing hands, ensuring clean water, and procedures to avoid potential infections. In the UK, The Eden Project is based on the belief that connected communities are more resistant to local and global issues and are better equipped to face challenges and bring about positive changes. In addition to the already in place actions, the Community Action Response initiative was promoted to encourage citizens to support their communities, in particular by helping vulnerable and isolated people. To amplify the impact, they provided citizenship and local associations guidelines and communication materials on how to encourage participation and activism during the pandemic and supporting them in putting ideas into practice. These are examples in which empathy has played a fundamental role in recognizing the conditions of others and in promoting (creative) solutions to alleviate loneliness, suffering, marginalization, and to strengthen social relations by sharing material and immaterial resources with and within the community.

From a designerly perspective, these experiences can be read as services that are examples of social innovation and sustainability (Manzini, 2007), which take place through widespread design actions. This typology of services, which incorporates an empathic component, can also be interpreted through a particular service configuration, which Cipolla & Manzini (2009) define relational services or solutions that involve intense interpersonal relationships. The characteristic is that of the importance of relationships, in which the personal (empathic) component can prevail over the formal role played within the service. On the relationship
between empathy and design, Cipolla & Bartholo (2014) underlines how empathy is a fundamental component of socially responsible design (SRD) even when applied to the transformation of society by taking up the work of Burns, Cottam et al. (2006) and Sangiorgi (2011) on transformation design and design for social innovation.

In this context, the ability to recognize the value created where everybody designs (Manzini & Coad, 2015) and the solutions adopted by the so-called 'creative communities' (Manzini, 2005) seem to be very current. The empathic component can be considered as a trigger for the development of these actions and as a qualitative element that can connote effectiveness, quality, reliability, permanence of solutions, in which sociality and the common good are crucial. Meroni (2007) states that designers must recognize the value of solutions brought by creative communities to improve their effects and defines - with great charm - these actors as "heroes'. These are people who can take charge of producing results that can improve life contexts. Hero is a term perhaps abused by the journalistic rhetoric that often characterized the most challenging moment of the pandemic, assimilating it to a war. As designers, we understood that it is necessary to also redefine our design metaphors and our language, also in empathic terms. On the pandemic, much has been said, for example, about the importance of avoiding war metaphors. In this direction, Susan Sontag (2005) adopts an empathic approach to represent evil, and the author replaces the metaphor of war with that of citizenship: we belong to a kingdom with dual citizenship, she writes, that of the healthy and the sick. Temporary modification of passports is not a defeat, nor a defect, but a transition from which one can escape. For example, perhaps because of the inability of the media to tell the story of the Covid-19 tragedies with empathy, many doctors have rebelled against being called 'heroes' because they empathically felt that they were 'only citizens'. Solutions can be designed, visualized, and communicated considering all these factors, at the same time, empathy can itself become a design object going beyond the use of the techniques adopted mainly in the research processes.

5. EMPATHY AT THE ORGANIZATIONAL LEVEL

In contemporary organizations, empathy is often associated to emotional leadership, a term derived from Goleman’s thesis (1998), stating that the leaders may be able to manage (also) with their heart. Referring to cognitive and emotional factors, Goleman defines emotional intelligence as the ability to recognize one's feelings and those of others by positively managing one's emotions and social relationships. Empathy is one of the four basic dimensions of emotional intelligence, and they are the basis of any human relationship. In the popular article on Business Week, Bruce Nussbaum (2005) uses the term "empathy economy" to describe the need for companies to produce products and services capable of generating more customer experiences through an empathic approach to solving problems, referring to the design thinking as a tool for a new management. Creating and using empathy to manage organizations is one of the critical skills required of leaders. Indeed, in a complex and networked system, it is essential to work in teams. Among different teams, it is necessary to respond to the challenges posed by the outside world, to support resilient systems, as well as to promote trust between people and collaborators, and between organizations and end-users.

Kotler (2020) analyzes the impact of Covid-19 on consumerism and states that, following the health and economic crisis, new consumption patterns and new habits will connote
consumers. Much more attention will be paid to health and well-being; spending will be more prudent and guided by more conscious choices on the fragility of the planet or environmental issues. Besides, there will be a renewed balance between work, family, and leisure concerning what Kotler calls post-consumerism. In this new scenario, it is useful to reflect on the current organizational and decision-making models and the renewed needs of individuals and communities. Times, spaces, hierarchies, roles, priorities have changed rapidly. The need to rethink values, redesigning strategies, working methods, and skills is evident. The inclusion of the empathic dimension as an element to connoting the transformation could support new businesses and innovation trajectories based on the capacity to listen to the ecosystem’s needs and on collaborative solutions.

During the pandemic, several organizations have already accepted the shift in this direction, redefining or adapting their business to support the system and in response to the emergency, activating new relationships, and enabling new skills. Many businesses have reconverted or modified their productions to support health services and charities. Physicians from University College London Hospital (UCLH), engineers from University College London (UCL), and the engine division of the Mercedes F1 team have jointly developed an innovative and less invasive device for breathing. The small business ISINNOVA has collaborated with Decathlon to transform - through 3D printed components - snorkeling masks into ventilator masks to be distributed in hospitals. Lamborghini has shifted its production to surgical masks and medical equipment. The University of Aveiro has joined the 3D Mask Portugal Project to produce safety devices using open-access 3D models. The Politecnico di Milano produced the Polichina, a disinfectant distributed in hospitals and prisons. On a different level, many companies and organizations have allowed free access to software, programs, and contents, showing a predisposition (beyond mere market issues) to contribute making the lockdown experience more bearable. These are practical examples of an empathic approach at the organizational level, demonstrating that business objectives are not separate from personal ones and underlining the important role (not only economic) that organizations play in the society. Therefore, they are part of interconnected and complex systems whose relationships and ties have proved to be very fragile. Organizations will need to redesign internal and external processes taking into account the renewed needs of their employees, the use of technologies, the hybrid home-work spaces, the redefinition of life priorities, and at the same time, they will need to empathize with other organizations and networks to foster collaborations. In this arena, designers can play an important role; there is a large room to design new ways of working, new ways of interacting, new commercial developments, and paths for personal growth in which empathy can be one of the fundamental keys to building ‘better’ solutions provided by ‘better’ organizations.

At this time, the integration of design into decision making and strategic processes in organizations is becoming increasingly important. Strategic design and service design can be an integral part of a new way of doing business, of being part of a socio-economic system in which the personal and relational spheres are not subordinated to work or vice versa. The individuals and the organizations to which they belong are an integral part of an ecosystem that must also be redesigned in terms of relationship, resilience, and collaborative skills. New languages are needed, new management models, new practices that break down the internal and external organizations’ silos. A model that integrates an empathic component to encourage innovation at organizational level, therefore, considers the relationships between the people and the actors involved as complex elements of complex systems. We can redefine
a new conceptual space for innovation, understanding the hidden meanings beyond behavior, going beyond the traditional models of the user empathy or empathy market.

6. FOR THE USE OF EMPATHY AT THE GOVERNMENT LEVEL

The pandemic revealed the urgency of governments to react promptly to situations of full uncertainty and be prepared to manage very complex decision-making processes, taking into account not only local dynamics but contingent aspects connected to the international context on a global scale. On the government front, we have witnessed mainly top-down rather than collaborative strategies, fuelling, in most cases, the mistrust towards institutions and dedicating no space to collaboration and co-creation (probably also due to the rapidity with which Covid-19 spread, finding everyone unprepared, both technically and emotionally).

From a design perspective, the perception is that some opportunities to implement more experimental practices have been missed, at the same time, reinforcing the need to put into practice new forms of policymaking. In recent years, the design community's interest in policymaking gained momentum (Bason, 2014; Junginger, 2017; Kimbell, 2016; McGann et al., 2018), and policymakers and civil servants have started to consider design processes and tools for the policies development, giving meaning to the citizens’ needs. Examples such as the co-creation and co-design practices developed at DEMOS lay the foundations for new forms of more participatory and open policies. The World’s Basic Income Experiment is the first initiative in the world on such a topic: it involved more than 2000 people, each of whom will receive 560 Euros for being active in the society again, after losing their job or going through bankruptcy.

Such initiatives inevitably opened to reflection on how actors with different disciplinary skills and backgrounds can collaborate to support policymaking to deal with what Bason (2014) defines as ‘super-wicked problems’. This reflection implies that complexity is an embedded element in the design and policymaking processes in which innovation arises from the complex interactions between subsystems, which are themselves wicked problems. Bason (2010) proposes the concept of ‘professional empathy’ in the context of public sector innovation. First of all, the author recognizes the importance of involving citizens as an active part in outlining future visions. He supports the citizens’ involvement in democratic processes and decision-making, design, and creative ones. “The point is that public sector organizations desperately need citizens’ participation to better understand what they experience, how they experience could be improved, and their behavior might be changed (author’s italics)” (p. 154). Bason outlines a framework for building collaboration capacity in government through four areas of intervention: the courage to lead, co-creation as the capacity to orchestrate the process, the capacity to support innovation, and consciousness to create a new design language. The pandemic and its repercussions in social and economic terms lead to a substantial reconsideration of the importance of placing the citizen at the center of the political planning, in which civil servants can, therefore, apply a ‘professional empathy’, support policy co-creation, and approaches based on prototyping and iteration, and use them for processes and outcomes evaluation.

During Covid-19, the UK Policy Lab focused its initiatives to responding to the emergency, testing their ‘Government as a System’ toolkit. It describes fifty-six actions that policymakers can use to influence different outcomes, adopting top-down or bottom-up approaches through seven areas of application: influence, engage, design, develop, resource, deliver, and control
(Siodmok, 2020). The result is a reflection on how to react to Covid-19 and, in particular, how design skills, ethnographic, and design scenarios can support policymakers across governments. They propose three design areas, which incorporate aspects previously discussed in the paper: (i) design in terms of future policy scenarios, namely anticipating, exploring and communicating future policy scenarios to enable future strategies to pivot between different possible futures; (ii) use data (also in ethnographic terms) as a design tool to adopt evidence-based solutions; (iii) adopt a systemic approach also in terms of leadership to promote solutions that are coordinated within different networks and platforms. To date, empathy is especially applied to the use of AI in digital services. In UK, the Empathy Lab was opened precisely to improve the accessibility and usability of e-services, thus acting on the scale of the artifact rather than in terms of systems.

However, going beyond the technical aspects, we know that citizens’ choices are not only driven by basic needs but are always emotional choices. If we ignore this factor, we might witness a growing gap between governments and citizens, which might cause a weakening of the institutions. The design contribution can also evolve in this sector. Anticipatory governance represents, for example, an interesting challenge for policy design (OECD, 2020; Maffei et al., 2020; Kimbell & Vesnić-Alujević, 2020) in imagining collaborative and participatory ways to face the future of governments and public services by including citizens’ perspective. Strategic foresight, futures thinking, speculative design, can reduce uncertainty by learning new possibilities on how the future could unfold (Roberts, 2018). The design discipline brings to the decision-making process the iteration-based approach and prototyping as a verification tool, hands-on processes in which collaboration is part of the process, and a mindset focused more on the problem setting and less on problem-solving (Schon, 1993).

Furthermore, using an empathic approach for policymaking can support alternative visions of the future which are not exclusively based on economic factors. The experiences of futures designing in government (Wilkinson, 2017; OECD, 2020) and the service design initiative in policymaking (Kimbell, 2016) open up a more collective and collaborative vision for the orientation of new policies, to imagine policies and services that go beyond the ‘technological solutionism’ (Morozov, 2014). The scenarios for new trajectories of policymaking are already traced. The ability to design scenarios, visualize and communicate them clearly can be used by designers to support the commitment to improve our society and build empathy towards the future, to have the courage to act even in extremely difficult conditions (Bason, 2020). In this context, there is a large room for experiments, and post-Covid policymaking activities can be a fertile ground to work on.

7. CONCLUDING REMARKS

This paper speculates on the adoption of an empathic component in the governance of complex ecosystems. Empathy, both in the affective and cognitive component, is proposed as a lever to promote innovation at all levels of society, from communities to organizations up to the governments, and as a tool to drive change. All of us are called to make decisions in different fields. We could all learn to be ‘empathic leaders’, we are Homo Empathicus, but our potential for empathy to support social and political transformation is underutilized (Krznaric, 2015). Barack Obama (2006) in ‘The Audacity of Hope’ argued that the United States suffers from an ‘empathy deficit’ and asked for a stronger sense of empathy to tilt the balance of the
politics in favor of those people who are struggling in the society. In the Covid-19 time, we perceived the urgency to think (and design) in systemic terms in which complexity is part of the context in which we live and operate (Li, 2002; Liem, 2012; Sevaldson, 2010; Valtonen, 2010). By its nature, design is a holistic, strategic, and systemic approach. Today it is a matter of designing complex relationships that need - as discussed in the paper - a refocusing on an empathic dimension, going beyond functional and rational aspects. It is necessary to think of unconventional 'care' models (de la Bellacasa, 2017) and, by integrating the empathic component, we can imagine new service aesthetics, new design models, new tools, new rules, and a new design language. It is also necessary to educate the new generations to do it, as designers and as citizens. "What we need is a new design culture able to catch the profound sense of sociality" (Manzini 2015; p.172), and we have to turn empathy into a form of social action harnessing its power for social and political change to create an empathy revolution (Krnaric, 2015), a revolution of human relationships.

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