Cooperative bridges: the role of risk perception in construction of resilient communities

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Abstract: This paper discusses the necessity to develop approaches to urban and regional planning and management for climate proof and resilient cities that incorporate the perception of risk associated with climate change. Our paper advocates for seeing community resilience as a process of social learning and highlights how risk perception could play a key role in it, which is crucial for envisioning and learning collectively how to produce more just and resilient socio-ecological urban and regional systems. Public risk perception is usually thought to have overriding importance in community resilience as it plays an important role in shaping community preparedness to risks. Our paper argues that in order to play a relevant role in constructing cities that are resilient to climate change, risk perception should be considered as a socio-cultural construction that embodies citizens' experience of risk and its associated tensions between frames of crises and frames of change. Through a case study we show how the use of the categories that describe the tensions between the frames of crisis and change can be decisive in the constitution of resilient cities and spaces of learning. We call these categories cooperative bridges and discuss their role in building community resilience.

Keywords: community resilience; risk perception; planning and management of risks; floods

Community resilience and risk perception

Risk has become part of our everyday life (Beck, 1986; Douglas, 1992). In a world undergoing a profound metamorphosis (Beck, 2016), dealing with risks associated with climate change involves more than trying to prevent or mitigate them. "Living with risk" requires overcoming the view that risk is a quantifiable and controllable entity, and conceptualizing risk as a complex and fuzzy social construct. For, as underscored by cultural and symbolic approaches to risk, as well as ones that work within Foucaldian or the "risk society" perspectives (Beck, 1992; Giddens 1999), risk and its perception have collective roots, and are not exclusively individual constructs.

The recent years have witnessed the emergence of resilience as a promising conceptual framework for addressing risks associated with processes of urbanization which carry on under climate change. While the notion of resilience has been defined and interpreted in different ways (Costache, 2017), its overarching meaning seems to roughly coincide with a system's ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. As highlighted by Wilkinson (2012) in planning theory and practice resilience helps to analyse cities and regions as complex adaptive systems focusing on the relationships between communities and the environment and the role that cultural and social relations play in the production of local ecology and habitat.

The degree of success which the concept of resilience enjoys within the field of urban planning and management depends on several factors. Its emergence has highlighted the necessity to overcome linear or otherwise static approaches to disaster risk reduction. Such approaches typically rely on engineering solutions to adaptive planning practices that embrace uncertainty, change and complexity, and propose to cope with risks through iterative processes of monitoring, assessment, and scenario making. The emergence of the concept of resilience has also emphasized the role which communities may play in order to strategically reshape unsustainable socio-ecological relationships (Park et al., 2013), and to promote the planning and management of urban adaptation. Overall, resilience has provided a useful conceptual framework for defining concrete and operative actions which are designed to react to the effects of climate change.

Resilience has also been severely criticized for being a depoliticizing concept which allows for the reproduction of unsustainable processes of urbanization (MacKinnon and Derickson, 2012). For example: while self-reliance might be perceived as enabling communities to become better prepared for facing floods, the focus on self-reliance may also allude to governmental disengagement from local intervention, and to government's devolution of responsibilities to community and voluntary groups (Davoudi, 2012). It has also been alleged that what constitutes the resilience of a community is not at all clear, nor is it what helps a community to function well throughout and in the aftermath of disasters, nor again what allows for incorporating their newly acquired knowledge into new practices and strategies such as may foster the survivors' strengths and resilience.

Some studies have adopted a critical approach to resilience. While trying to grasp its positive challenges to planning and management of risks, they have also tried to descry the factors which may affect the resilience of a community. Some of them have foregrounded strong social bonds, local identity, a lively democratic environment and its preparedness to face risks as preconditions for the existence of a resilient community (O'Brien et al., 2014). Opposing the notion of resilience as a community's property, others have argued that community resilience should be conceptualized as a process which consists in coping with a problematic situation (Prati e Pietrantoni, 2006) through which a community is instituted for the sake of identifying, analysing, reflecting, adapting and transforming its frames and practices so as to live in an uncertain world.

Resilience approaches provide communities with the opportunity "to break down silos and barriers, enabling actors to look across sectors and scales" and to rework social power relationships, as the benefits of resilience may not be distributed equally within and between communities (Twigg, and Calderone 2019: p. 6) Overall, community resilience appears to consist in a community's multi-faceted capacity of adapting to multiple long-term future climate change risks, of reducing the impact of climate variability and extremes through preparedness and planning, and of facing—as well as managing—adverse conditions or emergencies within a given social-ecological system.

While relevant resilience and community resilience cannot be taken as a panacea to risks and disasters reductions, Béné et al. (2012) insist that it is necessary to develop such approaches as are oriented to challenging the status quo so as to transform unsustainable socio-ecological systems of relationships. In this case, community resilience is thought of as a space of social learning that activates unexpected interactions between networks of adaptive/transformative capacities (e.g. robustness, redundancy and responsiveness) and local resources. Coping with climate change and its associated risks requires more than resilient communities: it requires utopian, transformative communities. Thus, even upon embracing a transformative perspective toward community resilience, the latter appears to be just one piece of a more complex picture. Becoming resilient should be conceived as one among the several important processes that a community should pursue in order to cope with risks and disasters. As opposed to mere adaptation, community resilience is here seen as a space for learning how to live in a changing and uncertain environment.

Resilience as a relational process should be opened to different actors and assets of knowledge and change knowledge/power relations. As a result, we should accept that community resilience is not immune from being entrapped and manipulated by existing and unjust knowledge/power relationships. Following this last stream of thinking, this article inquiry into the role of risk perception in shaping community resilience seen as a space of social learning which mobilizes different assets of knowledge including citizens knowledge and risk perceptions with the aim of acting together.

While it is often thought to be crucial to enhancing preparedness to facing risk and therefore to activating community resilience, the role of risk perception remains quite underexplored in such field of policies and research. In this paper, we pay heed to the insight that community resilience is a process, a space of social learning, and explore the role which risk perception plays in its constitution. We ask: can risk perception allow for the production of knowledges which are not only adaptive but also transformative? Can it activate transformative processes of knowledge production into an immanent and constitutive search for practices of place making, which may enable a profound and radical transformation of unsustainable processes of urbanization?

In order to achieve this goal, our research draws on a cultural theoretical framework developed by Mary Douglas (1992) which portrays risk as the result of a social process which depends on the conventions that "govern" a settlement in a given territorial context. In this paper we suggest that, if seen as a receptacle of everyday collective experience, risk perception can contribute to identifying categories of cooperation between different worlds of cognitions and actions, such as enable the emergence of new ecologies of knowledge that are both adaptive and transformative. As such, risk perception could help community resilience as social learning by favoring forms of co-evolution and risk management which lie beyond the horizon of current unsustainable processes of urbanization.and managerial perspectives.

Explorations: a cultural perspective on risk perception

Discourses about resilience and risk perception are inescapably interwoven. Within different approaches to resilience, risk perception is often mentioned as a key factor for developing community preparedness and adaptation. However, the meaning of risk perception is just as often glossed over. As a result, it is still hard to envisage how risk perception and community resilience relate to one another. In order to cast some light on this issue, one may choose to follow either of two ways of considering risk perception (Slovic, 2000): an individualistic/psychological approach, or a socio-cultural/collective one. In this paper, we shall consider risk perception as a socio-cultural collective construction which is tightly connected to places and to the formal and informal institutions which surround them.

Cultural approaches do not aim at denying that risk and dangers exist as rational entities and psychological individual constructions. They rather underscore that risk is also socially constructed, and that as such it can be re-constructed, based on an examination of the beliefs and rationalities of the various actors which participate in its making (Douglas 1992). The use of a psychological or technical-scientific understanding of risk seems insufficient for grasping its complexity as social construct. Furthermore, using risk as an abstract category amounts to severing the ties between community and territory, risk and territory, hazard and politics within socio-political reality (Doulgas, 1992). By forgetting that risk is the result of a particular social and economic order, the technical-scientific vision of risk downplays its political and cultural roots. This helps to maintain the existing dominant boundaries between different cognitive structures, to preserve the status quo underlying unsustainable processes of urbanization, and to avoid removing the causes producing risks. Thus construed, risk depoliticizes decision-making processes. By contrast, if approached as a collective experience of risk, in spite of its emotional and irrational features, risk perception incorporates common knowledge, social memory, processes of knowledge production, local populations' fears, as well as their understanding of existing knowledge/power relationships. The perception of risk, observed as a socio-cultural construct which lies at the crossroads between structures of power, private life, and social interaction, embodies a network of meanings that exists and is shaped in the public and social dimension of life through a process of constitution and transformation (Geertz, 1998).

The socio-cultural perspective opens up some possibilities of inquiry into the role that risk perception plays in community resilience, understood as a space of social learning. From a socio-cultural perspective, risk perception embodies the social memory and challenges taken-for-granted categories and dominant points of view. Thus, risk perception may allow to recognize the tension between the frames of crisis and frames of change, through which members of a community develop strategies of risk-management by drawing on their everyday experience of risk.

Inquiry into community resilience as a space of learning: a methodological approach

Taking risk as a socio-cultural construct, we aim to examine which role, if any, risk perception plays in building community resilience, understood as a space of learning in which people produce strategies for coping with risks associated with climate change. To do so, our research focuses on risk perception as an embodiment of frames of crisis and frames of change. In order to grasp these, our research builds upon interviews of citizens and local stakeholders, and upon the participatory observation of formal plans and programs, as well as of self-organized groups of action in which citizens try to manage flood risks. Our objective is to discover shared frames of crisis and change, and to shed light on their underpinning categories by describing tensions and dialectics between crisis and change. Our research is centred upon storytelling: we pay attention to narratives of crisis and of change that people develop in order to express their own experience of risk in relational terms.

Storytelling builds narrative mechanisms by following which individuals are led to self-identify with certain archetypes and to conform to determinate standards of social practice. Each story unfolds in a place, at a given time and within a culture. It also fulfils a certain political purpose: it stages a definite reality for the sake of countering other statements, whether these be implicit or explicit. Each story is thus intended to fulfil definite purposes, to communicate a set of values, spur feelings, and suggest certain behaviours. What remains to be determined is the degree is a story's effectiveness, and people's ability to recount it and to make it memorable. In what follows, we report the results which we obtained in two different contexts where local populations experienced the impacts of extreme rainfalls. We seek to illustrate local populations' awareness of risks and its correlations with risks and resilience.

We complement the ethnographic research with the analysis of scientific and political reports and documents as well as newspaper articles and other materials available through social media. Interview and research materials are collected by using the factors that characterize cultural risk perception (Renn and Rohrmann, 2011). The questions which were asked throughout our interviews concern five topics: collective and individual heuristics that individuals and groups employ when forming judgments about risks; cognitive and affective factors that influence their perception; the social and political framework in which individuals and groups operate; the cultural context in which socio-ecological relationships unfold. Through a qualitative analysis of the content of the interviews, we interpret the interviews and seek to identify local frames of crisis and of change, as well as the tensions between these.

Coping with floods in a semi-arid region

During the last ten years, several small and medium towns, urban and rural areas in Apulia—a semi-arid region in Southern Italy—have experienced unusual pluvial flooding events determined by the extreme rainfalls caused by climate change. In urban areas pluvial flooding is generated by overland flows before the runoff enters any watercourse or sewer. In rural areas flooding is caused by the inappropriateness of hydraulic systems and profound transformations of the territory which were carried out in order to transform humid lands into agricultural or urbanized ones. A series of events including hurricanes, haling, rainfalls, flash floods have been occurring since the early 2000's in several places in the Region . These events have been consistently followed by long periods of draught characterized by high levels of humidity, usually above the seasonal mean value. As highlighted in several studies (see i.e Boenzi et al. 2007) the increased frequency of rainfalls has been accompanied by a decrease in the number of rainfalls during the year. The reduction of daily rainfall is particularly problematic for the recharge of the local groundwater system. Hurricanes are a result of the rapid tropicalization of the Mediterranean sea.

The occurrence of extreme rainfalls, an unusual event in a semi-arid region, has been catastrophic for agriculture and for the built environment in urban settlements. In urban areas, local administrations have typically reacted to such events by carrying out adjustments of urban drainage systems to the new meteorological regime, for the sake of reducing any future risk of flood. Until a couple of years ago, the resilience of local communities has not been a relevant topic for policy-oriented discussions on climate change in Apulia. More recently, resilience has come to be associated with a scientific-technical intervention aimed at reducing hydrogeological instability.

Ginosa

Ginosa is a small town with around 22.500 inhabitants. It is a rural town in the middle of the Western Arco Ionico, a territory which underwent reclamation works at the outset of the 1900's in order to provide poor people with agricultural lands of which they would themselves be owners. The morphological elements characterizing Ginosa are ravines, deep erosive valleys of karstic origin carved by ephemeral streams. The town is indeed delimitated by the two streams of Gravinella e Lagnone Tondo. Its oldest settlement was built upon the slopes of the ravine in which the Gravinella 'flows'. Therefore, the settlement is highly vulnerable. Due to the geological and morphological configuration of the territory, and to the ephemeral nature of its water regimes, the ravines are naturally subject to hydrogeological instability, when certain thresholds of intensity and rainfall duration are exceeded. The existence of cave settlements in artificial or natural cavities further increases the degree of vulnerability of the ravine and of the town which was built upon it. The greater part of these cavities lie in a state of abandonment and their stability is precarious at best. That is both due to the lack of human maintenance, and to the natural degradation of the mass of rocks which is caused by aggressive humidity, by meteorological agents, and by the presence of fractures, some of which facilitate the infiltration of water. The presence of man-made cavities was a matter of common knowledge, as some of these were owned by local citizens themselves, and entrances thereto were visible from the ravine's riverbed. Still, in spite of the territory's great geological complexity, no study was carried out until 2013 in order to map the exact distribution and the degree of stability of the cavities which lie beneath the town's centre, which rests upon a vast surface of calcarenitic rocks.

In 201,3 extreme rainfalls (in October and December) produced an unexpected flow of water in the Gravinella that caused 4 victims and swept away any object or people on its way and the fall of a par of the old city which was built on the ravine's slope. After these floods, which also damaged hectares of vineyards, the public was interdicted from accessing the urban areas surrounding the collapsed buildings in the old town. In order to protect the local population from future pluvial floods, hydraulic and infrastructural works were carried out, and some were designed in order to draw new funds. Some of the works that were proposed in order to restore the area, as well as to mitigate the future risk of further hydrogeological instability, included the consolidation of the slopes of the ravine characterized by the high density of cavities, the development of a monitoring system of the microclimatic conditions of hypogeum, the demolition of ruins and collapsed buildings, and the elimination of all relevant interactions between liquids and rock mass.

A story of flood: interpreting the research materials

As a first step, we analyse the content (fig. 3) of the interviews. By compounding the interviews with other research materials, we seek to reconstruct the story of flood as it took shape through the interplay between the local frame of crisis and frame of change.

Frame of crisis

Citizens perceive climate change as a series of adverse situations ranging from heat waves to extreme rainfalls.

> *"There is a huge problem: the tropicalization of the climate. I have been fishing in the Galaso river since I was a little child but it had never happened to me to find orange or yellow crabs."*
>
> *"In recent years events have become extreme: hailstorms, air horns, more frequent snowfalls. Citizens are not very aware of this, perhaps farmers a little more, but we have now adapted."*
>
> *"After 2013, when it rains people does not feel longer to be safe…they are afraid."*

Cultural context

The ravine is beautiful
The town old city was a paradise
Now it looks desolate
Abandoned
We did not expect the hailing
We cannot defend ourselves
The countryside gets flooded
Frequent extreme weather events due to climate change and to the vulnerability of the territory
Damages to local agriculture

Socio-political

The territory does not care about political factions
The issue is the economy
The problem weighs upon everyone
Significant damage
One cannot stay still when it rains
Weak economy
Slow and ineffective institutional action
Protect the town's center

Heuristics

They have not built it back
Willful disinformation
Projects to draw funds

Cognitive - affective

Who lives here fails to perceive
People are indifferent
Man destroyed everything
People lose interest
We have lost our old attachment
Lack of awareness
We adapted

Figure 3: Field work: the analysis of content of the interviews

Awareness about the nature and effects of climate change diminishes with the age of interviewed as well as the interested in the risks. When interviewed, elderly citizens replied:

> *"We do not know much about climate change."*

or limited themselves to remarking that:

> *"It is sad when it rains. When the sun shines you feel better."*

By contrast, adults are deeply aware and afraid of the increased frequency of extreme events following climate change because such events will increase the risk that disasters such as the ones that occurred in 2013 will reoccur. The most recently built areas of Ginosa seem to be safer than the most degraded parts of the old city and than the rural areas where floods are quite recurrent. The local population does not feel responsible for the disasters caused by climate change. They rather identify local cultural and socio-political factors as the source of risks associated with disasters.

> *"Climate change does not depend on us, we cannot do anything to oppose the occurring of extreme events"; "humans are at the base of disasters".*

The origins of risk also tend to be identified with the self-interested behavior of citizens, which threatens the existence of a political community capable of acting and envisioning its future, and in the lack of appropriate public information:

"The local community is divided: the majority are not interested in dealing with the effects of climate change. The ones who are concerned about climate change would like to be heard by public administrators, but exercize no influence whatsoever on local policy making and politics".

"I have lived abroad for several years so I can see what local inhabitants are unable to see or perceive. If you go and visit the old town you can understand the origin of the problems…Here is the reign of indifference".

"Human beings have destroyed everything! Nobody takes care of the land and young people leave…".

"Citizens' indifference also depends upon the fact that the local administration has not involved and informed the local community so as to explain what happened in 2013. After the disaster, it commissioned several technical-scientific studies in order to mitigate the hydrogeological risks and protect the local population. After the collapse of buildings in via Matrice the administration did not explain to the local population what had occurred and why. It assured citizens that public works would commence immediately in order to restore the damaged areas…Misinformation is planned…Nothing has been rebuilt until now."

Five years after the collapse of via Matrice, the following evictions of local inhabitants, and the ban from accessing two portions of the historical center have brought about a ghostly silence and fostered the abandonment of this area. And even when citizens' attachment to these places seems to emerge, it is not accompanied by attachment to the rural area.

"Last Sunday a hailstorm occurred. The countryside is now flooded, it's raining this morning. Young people do not care! Here the problem is the economy. People become disinterested, they no longer feel the same attachment that they had in the past and they move away.

The countryside is completely abandoned. Agriculture suffers from extensive damage from climate change, but then the problem weighs upon everyone".

Detachment is accentuated by a non-connected and non-connective community that feels deprived of shared perspectives, values, and vitality. Furthermore, grassroots participation in the preparation of actions for the mitigation of hydraulic instability was very low, as the owners of the collapsed houses and the evicted were the only citizens who took part in these projects. As a result, the institutional and technical-scientific world had limited chances, if any, of communicating with the local community.

Frame of change

This frame involves the projecting of crucial operations, including: the mitigation of risks of hydrogeological instability, the attempt to contrast of abandonment by regenerating the old town, the protection of rural areas and a new approach to the local economy.

The mitigation of risk has been dealt with by scientific and policy experts. Geological and hydraulic technical-scientific studies that aim at consolidating the slope of the ravine (Rapporto CNR IRPI, 2014; Spilotro, 2016) have been produced and conferences have been organized in order to debate issue concerning "Territorial fragility: from hazard to risk".

The studies which have heretofore been carried out have cast light on how ongoing changes in the climate and their effects, including floods, disrupt the delicate territorial equilibrium and lay bare the fragility of the territory, which is both due to its hydro-geomorphic characteristic and to intense anthropization. These studies suggest that a one-sided vision is insufficient. Acting on the territory without considering the local impact of climate change would constitute a failure to analyse the potential feedbacks that ensue from the increased frequency of extreme weather events. Conversely, focusing solely on the global dimension of climate change would result in an immobilization and the removal of responsibility of institutions and citizens. It is necessary to develop an integrated vision of climate and territory since the effects which climate change will yield at the local level will increasingly challenge populations to learn how to produce resilient socio-ecological systems and to protect dwelled environments. Ignorance, or poor knowledge of the complexities and weaknesses of a territory will make for its population's incapacity to manage the risks associated with extreme weather events.

While studies and expert reports underscore the necessity of mitigating future risks, popular voices in Ginosa suggest that the rebirth of the local community should set off with the mobilization of the local memory which is embedded in the old town and in the latter's ties to the ravine, as well as a renewed interest in agriculture and economic innovation. The current state of abandonment in which the old town lies well reflects the opacity of its inhabitants' vision of the future of Ginosa and of its territory.

> *"When the old town was all inhabited, living here felt like being in paradise. Nowadays we are in a desolate landscape which is abandoned to itself. I call on our politicians to protect our historical centre by preparing and submitting projects for funding to regenerate it."*

A key step toward contrasting urban decay and abandonment consists in contrasting the flooding of rural areas. Thus, a renewed interest in local agriculture should be promoted.

> *"We did not expect the hailstorm, we cannot defend ourselves from extreme rainfalls but we can try to understand that everything is connected here: if the rural areas are also flooded we cannot survive as butchers, fruit vendors, or bakers."*

In order to reach these goals, a new idea of Ginosa as a political community should emerge out of the prevailing indifference.

<u>Tensions</u>

Comparing the local frame of crisis and frame of change related to the disasters provoked by floods occurred in 2013 and thereafter leads to highlight certain key tensions. The paralysis which characterizes Ginosa is a result of an ongoing transformation in the processes of local urbanization. The occurrence of this change has not been accompanied by the flourishing of any debate about it. On the other hand, it is underpinned by significant changes economic relations. For while the depopulation of old towns in Apulia carries on side by side with the erosion of local agricultural economies, the coastal areas of those same municipalities become destinations for tourism. Citizens of Ginosa are aware of these transformations, and perceive the risks of flood which are associated with climate change to have facilitated them. Indeed, the abandonment of Ginosa is itself a sign of the transformation affecting the relationships between the territory and the local population and, at the same time, constitutes a dynamic which increases the risk of floods. In a municipality where people forget their relationships to the historical places citizens feel helpless and incapable of taking action for the sake of solving the problem. In a territory where agriculture has traditionally constituted the focus of territorial development and the fulcrum of natural ecological dynamics, floods facilitate the structural abandonment of rural areas. The protection of the environment is perceived as something out of people control. Surely, the ravine should not be seen as a threat to, but a symbol of the dynamic combination of water, karst landscape and human settlements. It is necessary to work on issues which concern how to dwell in the territory in a responsible and synergetic—as opposed to predatory—way, aimed at preserving and recreating a connection with places.

Citizens'ideas of adaptation to climate change and rainfalls in Ginosa speak of a widespread resignation to the impossibility of constructing a different way of inhabiting the local territory. No committee or group of citizens has been set up in order to address the risk of floods, even in spite of the fact that climate change permeates their own daily life. In short, no collective strategy such as might target the flood problem has heretofore emerged. That means that, in Ginosa, it is not possible to speak of community resilience as a form of adaptation. Neither is it possible to speak of community resilience, if we consider resilience as a property, or if we consider it as a process without dealing with the tension among frames. Were we to approach resilience in such terms, floods would merely be considered as events to be controlled and mitigated through technical solutions.

Cooperative Bridges

In the case of Ginosa, the tensions between the two frames of crisis and of change can be described through some categories. Some of them are already known, including change of governance, change of knowledge/power production, and so on and so forth. However, in dissecting risk perception as a tension between frames of crisis and frames of change, we have seen some specific and crucial conceptual categories emerge, which are key for opening up spaces of social learning concerning floods. These are: re-appropriation of place, knowledge (re-)generation, and environmental citizenship.

We call these categories cooperative bridges. Each of them embodies the complexity of the meanings involved in the experience of risk of the local population and reflects a category of connection between thinking and action, which is necessary for activating the local community with respect to issues associated with the risks of floods. We call these categories cooperative bridges because they are bridges between knowledge and action, citizens and local institutions, and community knowledge and scientific and technical knowledge.

The re-appropriation of a place is a way of rethinking the life cycle of a city and of reinserting places within it (Cellamare & Cognetti, 2014). As a place-based perspective, it helps to understand the capacity of communities to withstand or adapt to change or, alternatively, to change its own ways of living. It includes multiple forms of urban life which are based on self-organization as well as a necessary organizational change, which is meant for adapting the structure of institutional governance to risks and disasters (Carson, 2011). This is not only a problem concerning the inclusion or exclusion of actors in a governance process but implies a rethinking of the very idea of the organization of a small community, which is necessary for triggering the latter's creativity, improving or changing unsustainable socio-ecological relations, and promoting social and environmental justice. From the perspective of re-appropriation, knowledge (re-)generation is key to community resilience. It involves the integration and co-production of knowledge, as a way of challenging and redrawing well-established boundaries which delimitate different assets of knowledge, and lie at the base of risks associated with climate change. Re-generating knowledge aims at valorizing existing cognitive, environmental, organizational and relational resources, and above all, at reconnecting them by overcoming silo approaches. Finally, environmental citizenship is a first step to rewrite in a more responsible way the stories of places.

Conclusions

Cooperative bridges are key to developing a place-based perspective to resilience (Mehmood, 2016): they enlarge the horizons of understanding of—and of action upon—risks, and expand the opportunities for defining place-based efficient actions (Frisullo, 2015) so as to nurture social learning. If community resilience is about local communities learning to adapt and transform under change, guidelines and procedures to facilitate the social learning processes are necessary. And yet, it is difficult to see if these processes can foster the learning of categories of cognition and of action that generate practices of management of risks which may transform unsustainable socio-ecological relationships.

One month after we terminated our fieldwork, the Apulia Regional Government funded the project aimed at mitigating the risk of hydrogeological instability and the reconstruction of via Matrice in the municipality of Ginosa. This event suggests that—when mobilized—risk perception can propel local administration to acting for the sake of coping with climate change. At the same time, by ignoring risk perception as embodying cooperative bridges, the mitigation actions built new obstacles to the opening of spaces of social learning and to the emergence of a resilient community. From our point of view, the opening of such spaces is crucial for opposing the political desertification and the abandonment of small, rural towns. If considered as socio-cultural constructs, cooperative bridges and risk perception may offer a key to avoiding the depoliticization of risk-mitigation (Douglas, 1992) in Ginosa and to activating processes of planning and management such as may trigger community resilience. Using the cooperative bridges which are embodied in risk perception can help to manage risks in resilient cities by considering issues of democracy of places, social justice and environmental protection as a compass for community learning and resilience.

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