



University of  
**Salford**  
MANCHESTER

# Community resilience : is it greater than the sum of the parts of individual resilience?

Eachus, P

[http://dx.doi.org/10.1016/S2212-5671\(14\)00949-6](http://dx.doi.org/10.1016/S2212-5671(14)00949-6)

<b>Title</b>	Community resilience : is it greater than the sum of the parts of individual resilience?
<b>Authors</b>	Eachus, P
<b>Publication title</b>	Procedia: Economics and Finance
<b>Publisher</b>	Elsevier
<b>Type</b>	Article
<b>USIR URL</b>	This version is available at: <a href="http://usir.salford.ac.uk/id/eprint/32034/">http://usir.salford.ac.uk/id/eprint/32034/</a>
<b>Published Date</b>	2014

USIR is a digital collection of the research output of the University of Salford. Where copyright permits, full text material held in the repository is made freely available online and can be read, downloaded and copied for non-commercial private study or research purposes. Please check the manuscript for any further copyright restrictions.

For more information, including our policy and submission procedure, please contact the Repository Team at: [library-research@salford.ac.uk](mailto:library-research@salford.ac.uk).



4th International Conference on Building Resilience, Building Resilience 2014, 8-10 September  
2014, Salford Quays, United Kingdom

## Community Resilience: Is it greater than the sum of the parts of individual resilience?

Dr Peter Eachus\*

*University of Salford, School of Health Sciences, Frederick Road, Salford M6 6PU, UK*

---

### Abstract

Resilience is an interesting concept in that it can be applied in similar, but different, ways in a variety of contexts. In this paper I look at the different meanings for the concept with a particular focus on individual resilience examined from a psychological perspective. Individual resilience is compared and contrasted with community resilience in an attempt to answer the question, “is community resilience greater than the sum of the parts of individual resilience found within that community”?

In psychology, resilience research has developed from work looking at how people cope with the negative impact of crisis, disaster or trauma. In recent years this psychopathological perspective has been accompanied by an increasing interest in the positive outcomes that can follow trauma. For example families may grow closer following their survival of a traumatic event. This positive perspective would include work done on Post Traumatic Growth (PTG), Benefit Finding (BF), Positive Psychological Change (PCC) and of course psychological resilience. This paper will examine these different facets of “resilience” from a positive psychology perspective and look at how they may help in understanding the relationship between individual and community resilience. It will also look at how positive psychological interventions may be used to enhance the resilience of individuals and communities.

© 2014 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and/or peer-reviewed under responsibility of the Centre for Disaster Resilience, School of the Built Environment, University of Salford.

*Keywords:* Individual Resilience; Community Resilience; Positive Psychological Change; Post Traumatic growth; Benefit Finding.

---

\*Corresponding author. *Email address:* [P.eachus@salford.ac.uk](mailto:P.eachus@salford.ac.uk)

## 1. Introduction

In the summer of 1996 Manchester was buzzing with the Euro 96 football competition with Russia due to play Germany at Old Trafford on Sunday June 16<sup>th</sup>. Saturday June the 15<sup>th</sup> was a gloriously sunny day and the city centre was packed with thousands of people, shopping and enjoying the fine weather. At precisely 11:17 in the morning all this changed when the largest mainland bomb since the second world war was detonated by the IRA and the centre of Manchester was changed forever.

The bomb contained 3000 lbs of ammonium nitrate fertilizer with a Semtex booster. The army used a robot to try and defuse the bomb but it exploded as they did so. The bomb had a devastating impact, both physically in terms of the buildings in the immediate vicinity of the explosion but also psychologically on people who just happened to be in Manchester on that day. The cost of the damage exceeded £400 million and hundreds of people were injured mainly by flying debris and glass. Fortunately there were no fatalities as a result of the bomb.

In May 2014, some 18 years after the event, the BBC broadcast a TV drama, "From There to Here", about that terrible day and the affect it had on two families. In the lead up to this programme, victims who had featured in the original reporting of the bombing were interviewed by reporters from the Manchester Evening News about the events and how they felt now, many years later (Killelea, 2014). As might be expected the way people coped differed significantly. Some reported that they felt it impossible to go back to the city centre for many years after the bombing, others were more resilient and were back to look at the devastation the very next day. The city itself has shown an incredible level of resilience and the city centre is now a vast improvement over that that was destroyed by the IRA. A frequent comment heard when discussing these events is that the bombing was the best thing that ever happened to the centre of Manchester. The city has undoubtedly shown a high level of resilience, the people resilience to varying degrees. In this paper the relationship between physical, individual and community resilience will be examined.

## 2. Resilience

The concept of resilience may be defined in many ways for example the Collins School Dictionary (1989) defines resilience as "the ability to recover from unpleasant or damaging events." Similarly, more recent online definitions define the concept as "The ability of a substance or object to spring back into shape; elasticity." (Oxford Dictionaries.Com (2014). It can be seen that in the context of the physical world these definitions are reasonable. If we have a steel beam that can recover after a load is applied then that steel beam could be said to be resilient. The same term is often used to describe the way people "bounce back" from the experience of trauma or serious illness (American Psychological Association, 2014). However research on resilience in people has shown that rather than simply "bouncing back" to where they were before the crisis or trauma, resilient people often become more resilient after the event. They experience what has been called positive psychological growth (Seligman and Csikszentmihalyi, 2000). Thus it can be seen that the concept of resilience differs depending on the context in which it is used and it is these differences that are explored in this paper.

Within the built environment resilience usually refers to the ability of buildings to withstand the forces of nature, e.g. weather, earthquakes, floods or even man-made disasters such as terrorist attacks. Resilient buildings would be expected to recover and function normally soon after the "trauma" imposed by the external forces. However in the case of the built environment what we would probably not expect is to find is that the resilience of the building actually improves following the trauma. Generally an earthquake resistant building does not become better at resisting earthquakes following one although of course we might expect it to maintain its resilience. Whether this will be the case in the future remains to be seen. The idea of intelligent buildings that can and do adapt to their environments is not a fanciful idea (Clements-Croome, 2004).

In the natural environment things are slightly different in that resilience refers to the ability of that environment to survive and recover from some trauma, be that natural or man-made. For example the ability of a forest to regrow following a fire would be a measure of its resilience. However in this case the forest may actually benefit from the

fire in that all the dead wood is destroyed leaving more room for healthy trees and thus improving the overall condition of the forest. Resilience in individuals and communities is more akin to this type of resilience.

### 3. Individual Resilience

Throughout their life human beings are exposed to stimuli that have a range of intensity varying from minimal and thus hardly noticeable up to levels that are so intense they threaten the viability of the individual. How people are able to cope with these differing levels of stressor has been subject to much research by psychologists over many decades. The fundamental question that has challenged many disciplines is why is it, when faced with the same challenge, some people will succumb physically and mentally, whereas others will rise to the challenge and come out as better people, as a result? The question is easy but answering this question has taken decades of research by psychologists, sociologists, anthropologists, psychiatrists, counsellors and many others. Although the answer to this question is not yet fully understood the change in emphasis from pathogenic to salutogenic approaches, i.e. a focus on the cause of disease (the former) to a focus on the origins of health (the latter) has to be good. The main proponent of the salutogenic approach is Antonovsky, (1987) who worked with holocaust survivors to develop his Sense of Coherence (SOC) scale. Based on existing constructs like hardiness and self-efficacy Antonovsky was able to show the limitations of approaches that were pathogenic, i.e. concentrated on finding the causes of illness. In effect he turned the question on its head and said we should be researching not why people became ill but rather why they remained healthy. To this end he developed the SOC scale which has now been used extensively to measure individual resilience in this type of research.

Antonovsky (1993) further developed the concept of salutogenesis suggesting that health is promoted by a sense of coherence that comes from a generalised sense of confidence that stimuli/stressors deriving from both internal and external environments are structured, predictable and explicable. Further, one has the resources to meet the demands of these stimuli/stressors; and finally these challenges are worthy of your efforts to master them. In short it is individual resilience that is responsible for post traumatic growth (PTG) we sometimes encounter in people who have managed to survive a crisis, disaster or trauma.

This type of positive psychological change (PCC) has other forms as well being derived initially out of research into the impact of stress on physical and psychological health. Early research had focused on the illhealth that could result from stress and trauma so it was something of a surprise to find that some people actually seemed to benefit from these types of experiences. Benefit Finding (Tennen and Affleck, 2002) encompasses a broad range of positive changes that emerge following stress or trauma. Early research on benefit finding focused on documenting and characterizing the positive changes that were reported in response to stress and medical illness. In one of the first studies Affleck, Tennen, Croog, and Levine (1987) surveyed heart attack survivors and found that 50% of them reported examples of positive change that had resulted from the heart attack. These benefits included learning the value of preventative health measures, enjoying life more and changes in philosophy and values. Research has now demonstrated benefit finding as a response in some people to a wide variety of illnesses and trauma including HIV-AIDS, heart attacks, breast cancer, stroke, hepatoma and even in some chronic conditions such as rheumatoid arthritis, (Bower et al 2008).

It can be seen from this brief discussion of individual resilience that, at least in the salutogenic form, it does differ conceptually from the resilience of structures. If we were to apply this approach to the built environment then we would not ask the question why did the structure fail following the trauma, rather we would be looking for ways in which the resilience of buildings could be improved as a result of the trauma.

### 4. Community Resilience

The definitions of community resilience are not unlike those for individual resilience. Joerin et al (2012) in a study that assessed community resilience to climate related disasters in Chennai, India defined it as the community's ability to absorb, manage and bounce back after a disaster. In a report by the Community and Regional Resilience Institute (CARRI) looking at definitions of community resilience there were no less than 25 different definitions of

community resilience produced by a variety of individual researchers and organisations. At the end of this report CARRI adopted the following as a definition of community resilience:

*" Community resilience is the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change. "*

In the same way that individual resilience has a number of contributing factors, for example self-efficacy, locus of control, sense of coherence and so on, so likewise does community resilience. Many factors that have been identified as contributing to community resilience. For example Joerin and Shaw (2011) have produced a Climate Disaster Resilience Index (CDRI) that incorporates five dimensions (physical, social, economic, institutional and natural). Physical dimension includes such things as electricity, water and sanitation. The social dimension is quite wide and includes health, education and awareness, as well as social capital and preparedness. The economic dimension includes income and employment, household assets and savings. The institutions within a community play an important part and these might include local government as well as community groups. Finally the natural environment will be important to a community as we saw only too well in the 2014 floodings in the Somerset Levels in Southern England. Whatever definition is used the CARRI report suggests the following core concepts should be embodied:

- Resilience is an inherent and dynamic attribute of the community. This means that it exists throughout the life of the community. Potentially it can either be determined absolutely, or at least changes in a community's resilience can be detected.
- Adaptability is at the core of this attribute. Adaptation can occur either in response to or in anticipation of a crisis.
- Any adaptation must improve the community, i.e., must result in a positive outcome (positive trajectory) for the community relative to its state after experiencing adversity. This can best be detected by considering the level of functionality of the community after a crisis.
- Resilience should be defined in a manner that enables useful predictions to be made about a community's ability to recover from adversity. This will enable communities to assess their resilience and take action to improve it if necessary.

Ultimately of course communities are made up of collections of individuals they do not exist in isolation. Therefore the resilience of a community, however that is defined, will be determined by the resilience of individuals. If a significant proportion of individuals within a community lack resilience themselves then it is very unlikely that the community will be resilient either. However it should be noted that communities can provide resources and support structures that can promote the resilience of individuals and thus the community and it is to this that we will now turn.

## **5. Individual versus Community Resilience: Is the whole greater than the sum of the parts?**

In the built environment, a building is resilient because the component parts work together to produce a structure that is able to resist the forces that act upon it. Similarly an individual's resilience will be the result of a number of components such as personality, sense of coherence, self-efficacy, social support and life events. It is the optimal combination of these different components that results in an individual who is able to withstand the rigors of life and "bounce back" from extreme challenges.

Communities exist both physically and psychologically. Physically in terms of the built environment that of course exists within an ecological environment both of which have a degree of resilience built into their respective systems. The essence of a community is not its buildings nor where they stand but rather it is drawn from the people who inhabit that community. It is the resilience of these individuals interacting with their environment through the relevant institutions, for example local government or community groups, that gives a community resilience.

The link between community and environment has been described by Norgaard (1994) as synergistic and co-evolutionary. Thus the resilience of the community is inextricably bound up with that of the environment in which it is located, though the nature of this relationship is not always clear. Norgaard (1994) suggests that this relationship is most clearly seen when the community is dependent on a single ecosystem or resource. For example the resilience of a small fishing community will be highly dependent on the accessibility of fish stocks. If the fish stocks are severely depleted for some reason then the very existence of that community may be threatened. Communities that are resilient and in this example it may mean a change in fishing methods or even the development of other industries such as tourism, may well be able to survive. But for those communities who are unable to adapt, this change in the ecosystem may be catastrophic. This is an example of what Adger (2000) calls resource dependency and this demonstrates the co-evolution of community and environmental resilience.

Capturing the relationship between community resilience and individual behaviour is not easy because the factors associated with community resilience can only be observed indirectly. Machlis et al. 1990 studied community resilience by examining the social impact of resource dependency in terms of marriage and employment. In one small mining town called Wallace, they were able to show a direct correlation between the amount of gold produced and the number of marriages in the town. Similarly in another town, Orinof, there were direct parallels between the amount of timber produced and the number of people employed in the town. In both these situations the dynamic nature of resilience can be seen as it fluctuates with the markets for gold and timber. Small communities like these are extremely vulnerable to changes in the demand for their products and resilience in this context could be equated to diversification within the economy.

As with ecological systems the key factor for community resilience appears to be diversity (Tilman 1997). It is argued by many ecologists that resilience is the key to biodiversity conservation and that diversity itself enhances resilience. Using this analogy we would expect diverse communities to be more resilient but what does diverse in this context actually mean. From the above examples it can be seen that economic diversity is likely to lead to enhanced community resilience. Over reliance on a single form of employment, for example motor car manufacturing or coal mining may provide individuals and communities with an inflated sense of resilience while times are good, but of course these communities are extremely vulnerable at times of economic downturn.

Post traumatic growth (PTG), (Tedeshi and Calhoun, 2004) is usually thought of as a characteristic of individuals but there is some evidence that communities can also experience something similar to PTG though how long this will last is open to debate. The majority of people who are exposed to a trauma, over time, will make a full recovery; only a very few will go on to develop post traumatic stress disorder (PTSD) and some will even emerge feeling much better about themselves and having a very positive outlook on life that can be directly attributed to the trauma they have suffered.

Immediately after a disaster, victims, professional aid workers, family and friends often come together to help each other cope with the trauma (Kaniasty and Norris, 2004, 2009). Many studies have identified this mutual helping as a feature in the immediate aftermath of a disaster (Kaniasty & Norris, 2000; Tyler, 2006). This phenomenon goes by a number of highly descriptive phrases, for example *democracy of distress* (Kutak, 1938), *postdisaster utopia* (Wolfenstein, 1957), *stage of euphoria* (Wallace, 1957), *altruistic community* (Barton, 1969), or *heroic and honeymoon phases* (Frederick, 1980). It is suggested here that a further term should be added to this list namely Community Post Traumatic Growth (CPTG).

Bonanno et al (2010) suggests that the most distinguishing features of CPTG are likely to be “heightened internal solidarity, a sense of unity, a disappearance of community conflicts, a utopian mood, an overall sense of altruism, and heroic action” (pp25). It can be seen that these features are psychological characteristics of individuals as well as social components of communities. In the same way that PTG results in individuals who feel they have actually benefited positively as a result of the trauma, with CPTG is the whole community that rebounds positively going beyond a merely resilient response. It is this community response in terms of overt communal sacrifices that seems to mitigate the psychological damage that we might expect following a disaster. This notion of the therapeutic community has been discussed elsewhere (Drabek and Key, 1984; Bonanno et al, 2010) and although it is not uncommon, it does not always occur. In the Drabek and Key study (1984) survivors of a tornado were compared to a control group who had not been exposed to the tornado. The findings revealed that the tornado had an adverse impact on the marriages of survivors, their interactions with neighbours and feelings of attachment with their neighbourhood. More positive outcomes for the tornado survivors, included stronger links with relatives and friends

and for those who had religious beliefs an increase in church attendance was observed. Other studies have confirmed these mixed findings on social relationships in a variety of disaster settings. Bolin, (1982) reported similar findings following another tornado in Texas. Norris et al (2005) studied survivors of floods and a mudslide in Mexico and Kaniasty, K. (2003) studied flood victims in Poland. The general findings appear to show some deterioration in social relationships and perceived social support follows disasters and therefore it would be wrong to always expect to find CPTG following a disaster. This is exactly analogous to what we find when we look at the research on PTG responses in individuals..

The explanation for this deterioration in social relationships is undoubtedly multifaceted and complex but as Bonanno et al (2010) have suggested some of the reasons are quite obvious. Following a major disaster such as a flood or tornado survivors may well have lost contact with those who might be expected to provide support through death, injury or relocation. When whole neighbourhoods are destroyed victims may well not want to return and rebuild their lost homes and so their ties with neighbours and friends will be at risk. Even where support is provided by aid agencies there are often delays and frustrations before people have their lives restored to anything like it was before the disaster. These experiences are likely to exacerbate individual psychological problems making the development of new relationships or even the sustaining of existing ones, problematic. Under these circumstances it would be surprising to see the consistent development of CPTG following serious disasters. Further research is required to identify where and how CPTG develops and what can be done to encourage this development. Some work in this area has already been undertaken and the excellent Rand Health Report (2011) on “Building Community Resilience to Disasters” provides users with roadmap for building community resilience. Although a detailed set of guidelines are provided in this document it is acknowledged that because it is new, much of the guidance is untested and will require further research and refinement.

## References

- Adger, W.N. (2000) Social and ecological resilience: are they related? *Progress in Human Geography*, Vol 24, 347.
- APA.org (2014) The Road to Resilience. (<http://www.apa.org/helpcenter/road-resilience.aspx>. Accessed 24.5.2014).
- Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass.
- Antonovsky, A (1993). The Structure and Properties of the Sense of Coherence Scale. *Soc. Sri. Med.* Vol. 36, No. 6, pp. 125-733.
- Barton, A.M. (1969). *Communities in disaster*. Garden City, NJ: Doubleday.
- Bolin, R. (1982). *Long-term family recovery from disaster*. Boulder: University of Colorado.
- Bonanno, G.A., Brewin, C.R., Kaniasty, K., and La Greca, A.M. (2010) Weighing the Costs of Disaster :Consequences, Risks, and Resilience in Individuals, Families, and Communities. *Psychological Science in the Public Interest* 11(1) 1–49.
- Bower, J.E., Low, C.A., Moskowitz, J.T., Sepah, S., and Epel, E.(2008).Benefit Finding and Physical Health: Positive Psychological Changes and Enhanced Allostasis
- CARRI (2013) *Definitions of Community Resilience: An Analysis*. Published by Community and Regional Resilience Institute.
- Clements-Croome, D. (2004). *Intelligent Buildings: Design Management and Operation*. ICE Publishing (15 Sep 2004).
- Collins School Dictionary (1989) Definition of resilience, pp 597. Published by William Collins and Sons, Glasgow.
- Drabek, T.E., and Key, W.M. (1984). *Conquering disaster: Family recovery and long-term consequences*. New York: Irvington Publishers.
- Frederick, C. (1980). Effects of natural vs. human-induced violence upon victims. In L. Kivens (Ed.), *Evaluation and change: Services for survivors* (pp. 71–75). Minneapolis, MN: Minneapolis Medical Research Foundation.
- JoerinJ,ShawR.Mappingclimateanddisasterresilienceincities.In:ShawR,SharmaA,editors.Climateanddisasterresiliencein local governments.London:EmeraldPublishers;2011.p.47–61.
- Joerin, S., Shaw, R., Takeuchi, Y., and Krishnamurthy, R. (2012) Assessing community resilience to climate-related disasters in Chennai, India. *International JournalofDisasterRiskReduction*1(2012) 44–54.
- Kaniasty, K., & Norris, F.H. (2000). Help-seeking comfort and receiving social support: The role of ethnicity and context of need. *American Journal of Community Psychology*, 28, 545–581.
- Kaniasty, K. (2003). Kleska zywiolowa czy katastrofa społeczna? Psychospoleczne konsekwencje polskiej powodzi 1997 roku [Natural disaster or social catastrophe? Psychosocial consequences of the 1997 Polish flood]. Gdansk, Poland: Gdanskie Wydawnictwo Psychologiczne
- Kaniasty, K., & Norris, F.H. (2004). Social support in the aftermath of disasters, catastrophes, and acts of terrorism: Altruistic, overwhelmed, uncertain, antagonistic, and patriotic communities. In R. Ursano, A. Norwood, & C. Fullerton (Eds.), *Bioterrorism:*

- Psychological and public health interventions (pp. 200–229). Cambridge, England: Cambridge University Press.
- Kaniasty, K., & Norris, F.H. (2009). Distinctions that matter: Received social support, perceived social support, and social embeddedness after disasters. In Y. Neria, S. Galea, & F.H. Norris (Eds.), *Mental health and disasters* (pp. 175–200). New York: Cambridge University Press.
- Killelea, A. (2014) Blast serves as a warning, says bride. *Manchester Evening News*, pp4, May 22nd, 2014.
- Kutak, R.I. (1938). The sociology of crises: The Louisville flood of 1937. *Social Forces*, 16, 66–72.
- Norgaard, R.B. 1994: *Development betrayed: the end of progress and a coevolutionary revisioning of the future*. London: Routledge.
- Oxford Online Dictionary (2014) Definition of resilience. ([http://www.oxforddictionaries.com/definition/american\\_english/resilience](http://www.oxforddictionaries.com/definition/american_english/resilience). Accessed 25.5.2014).
- Norris, F.H., Baker, C., Murphy, A., & Kaniasty, K. (2005). Social support mobilization and deterioration after Mexico's 1999 flood: Effects of context, gender, and time. *American Journal of Community Psychology*, 36, 15–28.
- Rand Health Report (2011) *Building Community Resilience to Disasters: A Way Forward to Enhance National Security*. [http://www.rand.org/content/dam/rand/pubs/technical\\_reports/2011/RAND\\_TR915.pdf](http://www.rand.org/content/dam/rand/pubs/technical_reports/2011/RAND_TR915.pdf) (Accessed 25.5.2014)
- Seligman, M. and Csikszentmihalyi, M. (2000). Positive Psychology: An Introduction. *American Psychologist*, Vol 55. No. 1. 5-14.
- Tedeschi, R.G., & Calhoun, L.G. (2004). *Posttraumatic Growth: Conceptual Foundation and Empirical Evidence*. Philadelphia, PA: Lawrence Erlbaum Associates.
- Tennen, H., & Affleck, G. (2002). Benefit-finding and benefit-reminding. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 584–597). London: Oxford University Press.
- Tyler, K. (2006). The impact of support received and support provision on changes in perceived social support among older adults. *International Journal of Aging and Human Development*, 62, 21–38.
- Wallace, A. (1957). *Tornado in Worcester (Disaster Study No. 3)*. Washington, DC: Committee on Disaster Studies, National Academy of Sciences, National Research Council.
- Wolfenstein, M. (1957). *Disaster: A psychological essay*. Glencoe, IL.: Free Press.