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Towards the enhancement of resilience in diverse communities under threat:

A synthesis of the multi-disciplinary theoretical conceptualizations of resilience and its applicability in three distinct and contrasting cases

James Daniel SHORT

This paper will elucidate the various ways that the concept of resilience is utilised across a broad range of fields and the specific objects that are the focus of resilience analysis. It will then describe three distinct cases from diverse regions of the world where it is held that resilience-focused analysis can shed light on practicable ways to support communities that are facing diverse threats.

Introduction

It is well-known that a number of key concepts underline framing, analysis, discussion and subsequent action across a wide variety of fields. In the field of International Relations for example, concepts such as 'national sovereignty', balance of power' and 'collective security' have been employed as lenses to analyse the nature of the international realm and then predict the intentions and future actions of states and other powerful actors for more than two centuries. In the more recent past, in the fields of International Development and Developmental Economics the concept of 'sustainable development' has gained increasing currency since its emergence during the early 1970s through its formal use in United Nations and other policy prescription documents during the 1980s and up until the present day. In essence, the condition whereby such concepts are taken

up and then increasingly employed in various contexts has come about primarily because they have proven themselves *useful* – that is to say they provide valuable guide markers and touchstones for analysis and discussion which can focus attention on the crux of frequently complicated issues in order to promote effective action. In the latter case, the term ‘sustainable development’ provoked protracted debate over its precise definition, particularly with regard to what exactly is understood by the term ‘sustainable’ and to what specific phenomena it did or should refer. This process has ultimately resulted in the concept’s acceptance in both the academic and practical lexicon of the aforementioned fields, and also increasing credence in other fields such as Ecology, Resource Management and the broader field of Economics as a whole. Discourses on the precise meanings and utility of these concepts continue within the academic and practical spheres as a natural element of intellectual and policy-creation endeavours.

A similar phenomenon can be seen in relation to the concept of ‘resilience’, a concept which has gained increasing exposure in academic and practical discourse since the 1970s, but which is unfortunately in possession of a more problematically complex nature. The reason for this is that as a concept, resilience has and is being utilised in a wide variety of fields and frequently refers to widely differing phenomena. As a consequence, it lies in something of a state of theoretical limbo since there is no one catch-all definition of resilience and this severely hampers discourses which aim to elucidate an overall ‘theory of resilience’. In fact, in theoretical terms the situation is actually worse than this and, as will be expounded below, due to its multifaceted uses and conceptualizations across several disciplines, it is held that no one satisfactory definition or overarching theory of resilience exists or is even possible, and therefore efforts to generate such will likely prove fruitless. However, at the same time it is also held that should the concept be considered in terms of the meaning it holds *within* specific separate fields and not in conjunction with all, it can provide a highly valuable tool with which to analyse cogent phenomena. There are clear differences between the various conceptualizations of resilience, but there are also important similarities which can

provide meaningful alternative frames of reference for a number of analytical discussions.

In the following section, Part 1, the author elucidates the variety of conceptualizations of resilience which exist in different fields and identifies the precise object or objects that are being evaluated for their possession or lack of that quality. In Part 2 three frameworks of resilience analysis are introduced which are currently being utilised within a number of fields to evaluate specific phenomena. In Part 3 three contrasting cases are introduced from different regions of the world about which it is held that the application of specific conceptualizations of resilience can provide insights into practicable means by which communities that are facing threats can be supported and strengthened in the future. The three cases in question are taken from Afghanistan, Christchurch New Zealand and northern Scandinavia.

Part 1 : Different conceptualizations of resilience

Since its emergence in a number of fields in the 1970s, resilience as a concept has gained increasingly broad use; some of these diverse fields include Engineering and Material Science, Psychology, Ecology, Disaster Management, and Humanitarian and Developmental Assistance (also referred to as Peacebuilding). As has been stated, generally speaking this has not proved altogether helpful since some of these uses have on occasions overlapped with each other and in others have clashed or proved themselves incompatible, and have frequently focused on very different phenomena. This process has created an overall theoretical landscape that is far from clear. Notwithstanding this lack of theoretical clarity, with regard to the growing popularity of the concept as seen especially during the last two decades, one hesitates to say that it has lost or is in danger of losing its intellectual weight and is slipping to the status of a 'buzzword' or slogan, yet suffice it to say that without clarity about the precise issue in focus – demarcating clearly the boundaries of the phenomena and analysis in question, it can be argued that certain discussions concerning resilience will have difficulty mak-

ing meaningful progress. To address this issue it is held that clarity is therefore essential, hence the perceived pertinence of the following questions. In discussions concerning resilience, with regard to the particular case in question it is held that the following questions should be posed:

- How is resilience defined?
- What conceptualization is relevant in this case?
- What are the objects of analysis?
- What properties indicate the presence or absence of resilience?
- How is this condition being measured?
- On the basis of what ethical or normative principles is it deemed that this condition is desirable?

The following section outlines the various contemporary fields in which the concept of resilience is being utilised and the specific meaning that it holds within that field. It also highlights the specific issues or questions to which the concept is being addressed in that particular context.⁽¹⁾

1 . Engineering and Material Science

The conceptualization of resilience utilised within the fields of Engineering and Material Science is perhaps the most readily comprehensible. On a fundamental level it refers to the way that certain **materials** respond when stress is placed upon them. More specifically, it describes a measurable physical property of materials such as metals and

(1) The following discussion does not purport to represent a comprehensive overview of every field in which the concept of resilience is currently being utilised; however, it does cover the principal utilisations of the concept which are to be found in the fields of Engineering and Material Science, Psychology, Ecology and Disaster Management (fields numbered 1 , 2 , 3 and 5 in the section below). It draws in part upon a 2011 literature review conducted by Martin-Breen and Marty Anderies on behalf of the Rockefeller Foundation and the work of Dr. Ken Menkhaus carried out in conjunction with the Geneva Peacebuilding Platform.

plastics which determines their ability to resume their original size and shape after being subject to stress. In this case, increased resilience indicates an ability to recover an original form more rapidly following stress and to endure increased stress without incurring irreparable damage. To be resilient is therefore understood to mean the capacity of a material to withstand a large disturbance without changing significantly, disintegrating or becoming permanently damaged. This conceptualization is of fundamental importance in architecture, building and infrastructure construction, product design in a variety of scenarios, and health and safety concerns throughout the home and workplace (Holling, C., 2009). Relevant questions in this context can refer to, for example, the load-bearing potential and weather resistance properties of materials used in road, rail and bridge construction; the heat resistance of materials used in home appliances; the flexibility and unbreakability of plastics used in children's toys and so on.

An additional application of this conceptualization refers to the resilience of specific **mechanical systems** which may or may not be in the possession of back up or fail-safe systems which can ensure continued function or safe shut down in emergency scenarios. Both good and bad examples of this phenomenon can be seen in the consequences of the March 11th 2011 earthquake and tsunami in Japan when the safety systems installed on the JR East rail network succeeded in bringing 27 Tohoku Shinkansen express trains to a safe stop without derailments or injuries.⁽²⁾ In contrast, the failure or insufficient capacity of fail-safe systems installed at the Fukushima Daiichi Nuclear Power Plant caused crippling power outages which led to meltdowns in three of the plant's six nuclear reactors and a huge release of harmful radiation.

2. Psychology

Within the field of Psychology, resilience is understood as meaning the ability of a

(2) Japan Times, Shinkansen quake survivability key selling point (n.d.) retrieved from: <http://www.japan-times.co.jp/news/2011/06/16/national/shinkansen-quake-survivability-key-selling-point/#.VPASjcvhntQ>

person or a group of people to overcome the consequences of a major setback that has occurred in their lives. Such an event could take the form of a severe family or relationship problem, a serious illness or medical emergency, or workplace and financial difficulties; it could include the death of a loved one, or a large-scale catastrophe such as a war, terrorist attack or natural disaster. The American Psychological Association defines resilience in the following way: "Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress.....It means "bouncing back" from difficult experiences."⁽³⁾ In this sense, being resilient does not mean that a person doesn't experience difficulty or distress, since emotional pain and sadness commonly occur in people who have suffered major adversity or trauma in their lives. However, it does mean that a person who has experienced such trauma doesn't subsequently find him or herself severely debilitated by that event and as a result unable to resume a normal life (Werner, E., 1995). In the aftermath of major tragedies there are numerous examples from locations around the world of people who have been able to come to terms with painful experiences and then subsequently regain their physical and emotional well-being. However, there are also similarly numerous cases of people who have been unable to regain their vitality following tragedy, and as a result have continued to suffer severe physical and emotional distress for years and even decades afterwards, suffering from Post-Traumatic Stress Disorder (PTSD). Resilience analysis within Psychology seeks to identify specific coping mechanisms and nurturing environments which can and are being used to enable individuals and groups of people to recover from tragedy. It focuses in particular on the experiences of children who have gone through traumatic events since children are often in a position where they have little access to or are unaware of supportive resources which can be drawn upon to assist in their recovery. Consequently, many resilience studies focus on

(3) American Psychological Association, The Road to Resilience (n.d.) retrieved from: <http://www.apa.org/helpcenter/road-resilience.aspx>

cases of children who have suffered hardships such as bereavement, bullying or emotional or physical abuse (Masten, A., 2001 and Masten, A. & Osofsky, J., 2012). In an example of such a case, a resilient child might initially struggle emotionally following the loss of one or other of her parents, but after a period of time she develops the ability to adapt and function in the manner that she did prior to the loss.

3. Ecology

The conceptualization of resilience utilised within the field of Ecology refers to the capacity of **ecosystems** to recover from or adapt to disturbances caused by natural or man-made factors. Such disturbances can include randomly occurring natural events such as wildfires, floods, major storms and insect infestations, and human activities such as releases of pollution, deforestation and intentional or unintentional introductions of exotic plant or animal species. Major disturbances of this kind can have profound impacts on ecosystems and in extreme cases can alter them permanently to highly detrimental effect. Human activities which severely affect ecosystems such as rapid population growth, clearing land for agriculture and industry and over-exploitation of natural resources have the potential to degrade the broader environment in a variety of ways, including by reducing overall biodiversity. This concept was first introduced by the Canadian ecologist Crawford Holling in a famous 1973 paper⁽⁴⁾ and has subsequently come to be defined in the following two ways: i) the time required for an ecosystem to return to an equilibrium or steady-state following a disturbance⁽⁵⁾; and ii) the capacity of a system to absorb disturbance and reorganise itself while undergoing change in order to retain the same essential functions, structure and identity. The latter definition has been termed 'ecological resilience' since it presumes the existence of

(4) Holling, C. (1973). "Resilience and stability of ecological systems". *Annual Review of Ecology and Systematics* 4: 1–23.

(5) There is a similarity between this definition and that utilised in the aforementioned fields of Engineering and Material Science.

multiple stable conditions which exist in the natural world. This will be explained in more detail in the subsequent section.

Resilience analysis in Ecology is primarily concerned with cases in which unique environmental assets are facing threats from the diverse disturbances mentioned above, and the ways and means by which these threats can be reduced or mitigated. Examples of the application of this conceptualization would be analyses of the ability of dry, bushland areas in countries such as Australia to recover their flora and fauna in the aftermath of large bushfires; alternatively, analyses of the ability of coastal ecosystems in storm-prone areas of countries such as the Philippines to recover their biodiversity and population numbers following typhoons such as the huge storm that struck the east of the country on November 7th 2013 – Typhoon Haiyan.

A similar conceptualization of resilience to that utilised in Ecology can be found in the field of **Medicine**, (this similarity precludes the inclusion of Medicine as an additional sub-heading here.) In this case, the area of focus is not the resilience of ecosystems but instead **people** and **human populations**, and the disturbances in question are not natural or man-made upheavals, but bacteria, viruses and other diseases as well as physical trauma caused by accidents or acts of violence. Here a person classed as resilient would be someone who is unlikely to fall prey to an outbreak of an infectious disease or who could recover quickly from it. Similarly, in cases of bodily injury or serious disease such as cancer, a resilient individual would be one who is able to recover quickly from invasive trauma surgery or who is able to overcome cancer by successfully completing difficult courses of treatment such as radio- or chemotherapy.

In the following three cases concerning Economics, Disaster Management and Humanitarian and Developmental Assistance (Peacebuilding), further similarities to the conceptualization of resilience utilised in Ecology can be discerned.

4. Economics

In Economics, resilience is defined as the ability of an **economy** or **section of an econ-**

omy to retain its overall operation, employment conditions and prosperity in the face of major shocks which adversely affect key aspects of its normal function. Briguglio, Cordina, Bugeja and Farrugia (2006) define the concept as “the nurtured ability of an economy to recover from or adjust to the effects of adverse shocks to which it may be inherently exposed.”⁽⁶⁾ Such shocks could take the form of interruptions to lines of supply and demand caused by extreme weather conditions or natural disasters, volatility in domestic or international markets leading to sudden price rises and shortages in basic goods, or turmoil in the geo-political sphere caused by terrorist attacks or violent conflicts. Resilience analysis in Economics is primarily employed to provide explanations as to why economies in certain countries or regions are able to absorb severe shocks and after a relatively short period of time re-establish fairly normal economic activity, whilst in other cases comparable shocks can cause protracted periods of instability and disorder which at worst can lead to broader societal breakdown. Analysing levels of resilience on both the macroeconomic and microeconomic scales, studies have revealed how the overall impacts of shocks have often depended not only on the nature and scale of the disturbance itself, but also on the ability of the economy in question to cope, recover, and reconstruct itself and therefore minimize its aggregate economic losses (Hallegatte, S. 2014).

Examples of the application of this conceptualization would be in analyses of the highly contrasting economic impacts of the 2008 financial crisis on different countries within the Eurozone, countries such as Spain and Germany; alternatively, examining the economic impact of the ongoing conflict between pro-Russian separatists and the Ukrainian military in the country's eastern provinces of Donetsk and Luhansk, or the impact that this conflict is having on the country as a whole.

(6) Briguglio, L., Cordina, G., Bugeja, S. & Farrugia, N., (2006). Conceptualizing and Measuring Economic Resilience. University of Malta, p. 1.

5. Disaster Management

In the field of Disaster Management, resilience refers to the capacity of **individuals, communities and local and national authorities** to prepare for, respond to, mitigate and recover from the impacts of major disasters. The main concern of the field itself is the mitigation of widespread damage caused principally by natural disasters; however, this does not represent its sole focus since the term 'disaster' is also used to refer to the following three serious crises: i) environmental emergencies, often involving the release of hazardous materials; ii) complex emergencies where law and order have broken down, often occurring in cases of violent conflict; and iii) disease pandemics.⁽⁷⁾

As the consequences of a number of disasters which have taken place since the turn of the millennium have revealed, the potential damage to lives and living environments that events such as massive storms, earthquakes and disease outbreaks can cause is enormous. In the aftermath of the 2004 Indian Ocean earthquake and tsunami, in order to reduce the future risk of widespread loss of life and major damage to countries' critical infrastructure, international efforts spearheaded by actors such as the United Nations Office for Disaster Risk Reduction (UNISDR) have focused on identifying ways and means that both communities and governments can prepare for large-scale disasters and establish emergency protocols and back-up relief services which can be rapidly deployed in order to minimise their most harmful effects.⁽⁸⁾ Central to these efforts have been strategies aimed at enhancing the resilience of communities that find themselves facing disaster scenarios in order that as much as possible people develop the capacities to help themselves. In this sense, resilience is seen as a dynamic quality within communities which is commonly developed and strengthened over time through experience. Building disaster resilience is understood as meaning improving the capabilities of individuals, families and communities, as well as that of businesses and gov-

(7) World Confederation for Physical Therapy, What is Disaster Management?, (n.d.), retrieved from: <http://www.wcpt.org/disaster-management/what-is-disaster-management>

ernments to prepare for and respond effectively in these types of crises. Through strengthening partnerships between communities, the non-profit sector, the private sector and various tiers of government, this approach seeks to build upon rather than replace existing capabilities and relief strategies.

There are numerous recent examples of the application of this conceptualization of resilience. In relation to natural disasters, disaster management initiatives instigated in the aftermath of Hurricane Katrina in United States and the Queensland floods in Australia; in terms of environmental emergencies, efforts to protect Japan's other nuclear power plants from possible future major seismic events following the disaster at the Fukushima Daiichi Nuclear Power Plant; and in terms of pandemics, efforts to contain and halt the spread of the deadly Ebola virus following the outbreak which occurred in Guinea, Liberia and Sierra Leone in March 2014.⁽⁹⁾

6. Humanitarian and Developmental Assistance - Peacebuilding

Whereas in the case of Disaster Management the focus of attention is primarily on enhancing the resilience of communities that are at high risk from natural disasters, in the

(8) The "United Nations Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disaster (HFA)" represents the accepted framework for making the world safer from natural disasters and building disaster resilience. Adopted in 2005, this framework sets out a ten year plan for the substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries. The HFA has been accepted by 168 Member States of the United Nations and identifies the following five priorities for action: i) Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation; ii) Identify, assess and monitor disaster risks and enhance early warning; iii) Use knowledge, innovation and education to build a culture of safety and resilience at all levels; iv) Reduce the underlying risk factors; v) Strengthen disaster preparedness for effective response at all levels. United Nations International Strategy for Disaster Reduction (UNISDR), (2007), retrieved from:

<http://www.unisdr.org/we/coordinate/hfa>

(9) At the time of writing a major international conference focusing on these issues was taking place in Sendai, Japan: The United Nations World Conference on Disaster Risk Reduction, March 14th-18th 2015, <http://www.wcdrr.org/>

case of Humanitarian and Developmental Assistance (hereafter referred to as Peacebuilding), the focus is mainly on enhancing the resilience of **individuals** and **communities** that are or have been caught up in violent conflict. Even if individuals and communities are not directly involved in actual fighting, it is undeniable that violent conflict has numerous harmful effects on many aspects of societal interaction, including through undermining interpersonal relationships and broader communal trust. Communities in conflict-affected situations commonly face multiple risks, have weaker institutions, and are more vulnerable to additional risks and shocks, both from within and externally. As a discipline, Peacebuilding incorporates a wide variety of strategies aimed at reducing the risk of the outbreak or perpetuation of violent conflict by addressing both its causes and consequences. These strategies can include provisions of emergency economic aid (emergency humanitarian assistance) and peacekeeping interventions involving both military and non-military personnel prior to, during and after the conflict itself. In this context, resilience is defined as the ability of individuals and communities to anticipate, prevent, withstand, adapt to and recover from the stresses and shocks caused by violent conflict, (Menkhaus, K. 2012). With its emphasis on enhancing the capabilities of local communities, the adoption of this conceptualization aims to promote the overall effectiveness and sustainability of Peacebuilding interventions instigated by external actors; resilience thinking emphasizes the provision of support to the systematic self-help mechanisms which already exist within local communities and institutions. It aims to aid individuals and communities in becoming more resilient to conflict, and over the long term strengthen local capacities for managing conflict, building peace and promoting overall social cohesion.

Examples of the application of this conceptualization can be found in ongoing efforts to support community reconstruction, trust-building and reconciliation between the ethnic Hutu and Tutsi populations of Rwanda following the 1994 genocide; similarly, in initiatives instigated between the Moro Muslim and Filipino Christian populations on the island of Mindanao in the Philippines, following the signing of a peace agree-

ment between the formally warring sides in January 2014.

7. Sociocultural Anthropology

The final field addressed in this synthesis of conceptualizations of resilience is that which focuses on the diverse interactions that exist between humans and the environments in which they live, Sociocultural Anthropology. The conceptualization utilised in this case has commonalities with that described in number 3 above referring to Ecology. It refers to the ability of **particular cultures** in different parts of the world to protect and maintain their unique customs, traditions, beliefs and languages – in effect the various aspects of their unique cultural identity, and not be subsumed or swallowed up by a surrounding dominant culture. Many cases from across the globe document how over periods of time particular cultures which found themselves in generally subordinate positions due to a variety of factors gradually lost their unique traditions, languages and ways of life, and in the worst scenarios dwindled to very small populations or died out altogether. As natural disasters and conflicts inflict great damage on societies as a whole, and as aspects of modernity and globalisation such as large-scale modernisation projects, urbanisation, and migration bring about rapid dislocations of people, the protection of cultural beliefs, values, practices, and knowledge, and their transmission to successive generations have become significant international concerns. Many human cultures have unfortunately come and gone, yet others have survived; as a consequence, the longer surviving cultures are held to be resilient. Cultural resilience in this sense is therefore defined as a particular culture's capacity to maintain and develop its unique identity and critical cultural knowledge and practices in spite of the numerous pressures that it faces from the surrounding environment, (Fleming, J. & Ledogar, R. 2008).

Example applications of this conceptualization of resilience can be found in investigations of, and policy strategies to promote improvements in, the overall living conditions and vitality of indigenous societies in many parts of the world, including Native

Americans and Native Canadians in North America, and Maori people in New Zealand.

Part 2: Frameworks of resilience analysis

In the previous section outlining the various conceptualizations of resilience utilised in different fields the specific object of evaluation in that context was highlighted in **bold text**. To reiterate, the objects of the particular fields are as follows:

- Engineering and Material Science – materials such as metals or plastics; mechanical systems
- Psychology – individuals or groups of people
- Ecology – ecosystems
- Medicine – individuals or human populations
- Economics – particular economies or sections of an economy
- Disaster Management – individuals, communities, local or national authorities
- Humanitarian and Developmental Assistance (Peacebuilding) – individuals or communities
- Sociocultural Anthropology – particular cultures.

It is clear that many of these objects of evaluation are quite different from each other in both nature and scale which highlights an additional reason why it is not possible to generate one all-encompassing theory of resilience. However, on the other hand several of the objects are very similar to each other if not identical, which at the same time points towards the existence of analytical approaches to assess resilience which can be employed across more than one field. Essentially, the objects of evaluation fall into one of three frameworks of resilience analysis which are of increasing complexity and are defined as follows: Engineering Resilience (also known as ‘common sense’ resilience), Systems Resilience and Complex Adaptive Systems Resilience. These frameworks originate from specific fields but certain phenomena can be analysed in accordance with more than one framework as will be illustrated below.⁽¹⁰⁾ The three frameworks will now be described in turn.

Engineering Resilience

As was the case with the first of the conceptualizations of resilience outlined in the previous section in the fields of Engineering and Material Science, this framework is the most straightforward (hence the bracketed subtitle in the list above referring to ‘common sense’ resilience). It is straightforward plainly and simply because of the fact that the objects of evaluation analysed within the framework of Engineering Resilience are precisely that – objects. That is to say they are **physical items**, non-living things such as metal girders or plastic fittings used in home or business construction which can be assessed in accordance with fairly standard criteria for their physical properties. For example: how much weight can a steel girder bear before it starts to buckle? In such a scenario, what degree of buckling represents a condition where its structural integrity has become dangerously compromised? What amount of force can be applied to a plastic fitting before its shape or form is changed or damaged permanently? As has been stated, questions such as this permeate the realms of engineering and construction in a myriad different ways and where they pertain to health and safety concerns, that is to say the protection of people’s lives, they are clearly of paramount importance.

An important distinction should be made at this point with regard to the second conceptualization of resilience utilised within the fields of Engineering and Material Science, that referring to the resilience of specific *mechanical systems*. This conceptualization does not fall within the framework of Engineering Resilience but to the second of the three, Systems Resilience.

Systems Resilience

The objects of evaluation which fall under the second framework of resilience analysis are far more complex entities than the materials which make up transport infrastructure or building construction. In this case the ‘system’ in focus consists of a large number of

(10) Martin-Breen & Marty Anderies, (2011), p. 5.

interacting individual parts which together contribute towards the production of a specific function. Taking examples once again from the field of Engineering, considering a mechanical system, this could denote a **vehicle engine** which relies on many interacting parts such as gears and axles to produce the function of motion, propelling a vehicle in a particular direction. On a more complex level, a larger mechanical system could incorporate any number of individual machines plus the surrounding infrastructural environment in which they operate that collectively serve to produce an additional function, such as that cited in the aforementioned example of the **safety system** which succeeded in preventing any serious accidents across Japan's Shinkansen rail network following the massive earthquake on March 11th 2011. In these cases, a mechanical system that is seen as resilient would be an engine that is reliable and does not break down and which is capable of continuing to produce its designated function of vehicular motion irrespective of weather conditions. Alternatively, a resilient safety system would be one that is able to fulfil its function in a wide variety of abnormal or emergency scenarios, and one which is likely in possession of one or more back-up systems which can immediately take over operation automatically should the primary system fail; in Engineering parlance this is known as possessing *redundancy*.

The analytical framework of Systems Resilience can also be applied in other fields where the scale of the object in question is considerably larger. In order to increase the resilience of particular regions to the devastating consequences of natural disasters, a major issue of concern within the field of Disaster Management is the up-to-the-minute accurate data which local and national authorities across the globe can draw from **early-warning systems** of earthquakes and tsunamis. Data drawn from permanently positioned seismometers and GPS meters in earthquake-prone zones, and also from buoys located far out to sea can provide vital warnings which can enable inhabitants in vulnerable coastal communities to escape from potentially killer waves. In a similar fashion, real-time data that can be drawn from geosynchronous weather satellites can inform local communities and emergency services of the scale, location and possible

impact of major incoming storms such as that which struck the Pacific island chain of Vanuatu on March 14th 2015. Analyses of this nature focus on the specific capabilities of early-warning systems, particularly with regard to the amount and accuracy of data to which they have access, and the methods by which detailed warnings based on such data can be propitiously communicated to the public.

Further applications of this framework can be found in the fields of Peacebuilding and Economics, and a considerable degree of overlap is discernible in analyses of this type. In the former case, in situations where violent conflict has or is currently occurring, in order to promote the overall resilience of a society that is facing such circumstances, attention is focused on the capacity of **specific systems within that society** to fulfil the vital functions which support normal life – functions such as the provision of food and clean water. Questions addressed in such analyses could include the following: if a vital asset within a community such as a water treatment plant or food refrigeration plant were to suffer serious damage in an attack carried out by an external enemy or a terrorist cell operating within that community, what would be the likely impact of that attack on the inhabitants of that area? Could the loss of such an asset lead to a significant humanitarian emergency or does sufficient capacity exist within that community to quickly restore essential services and thereby avert a crisis? Such analyses can potentially enable communities that are suffering from or are at risk from violence to prioritise limited resources in order to protect or provide back-up capacities for vital service provision or infrastructure assets. In addition, such information can also be utilised by external humanitarian actors to increase the effectiveness of peacebuilding interventions through the targeting of emergency assistance towards the specific objectives that will produce the most immediate benefit for people in danger.

Systems Resilience analysis carried out within Economics commonly addresses adverse scenarios which affect whole economies or sections of economies, including those caused by natural disasters, extreme weather events or violent conflict. Such analyses can run separately but in parallel with those carried out in the fields of Disas-

ter Management and Peacebuilding or can be part and parcel of a broader multi-disciplinary analysis of one specific case. An example of a particular area of focus would be an examination of the impact that major damage sustained by the **transport system** within a region could have on the wider economy. Alternatively, focusing on a region's **banking system**, assessing how the effects of adverse conditions such as turmoil in financial markets, a credit crunch or the collapse in value of a nation's currency followed by a run on banks, could be contained or mitigated within a particular geographical area without contributing towards a broader economic slump. Analyses would consider whether a country or region's transport network or financial system was robust enough to absorb and after a period of time overcome a destabilising scenario such as this. In other words, does the systems in question possess the resilience to weather such a crisis, and if not what can be done internally or by external actors to shore up the system in order to prevent further negative consequences which could potentially affect millions of people?

Complex Adaptive Systems Resilience

The principal difference between the second and third frameworks of resilience analysis is that the latter is principally concerned with complex systems that contain *living actors*. In cases where the objects of analysis that can be evaluated under the framework of Systems Resilience also contain human actors, such as in the case of JR Shinkansen trains which are of course driven by people, the framework of Complex Adaptive Systems Resilience is also relevant; this represents a case where the resilience of the rail network's safety system can potentially be evaluated in accordance with two frameworks. However, in cases where the principal object of concern is a living organism or many types of plant and animal organism which go together to form an ecosystem, or alternatively an individual person, a group of people or even a whole culture, then there is a need for a separate analytical framework which can address this great potential increase in complexity.

A fundamental property of the phenomena analysed under this third framework is the natural ability of living things to adapt to changes in their surrounding environment, be they good or bad; this property represents a clear contrast between the objects analysed under the first and second frameworks. To extrapolate, in cases where particular materials are subjected to stresses beyond the limits that they can endure, it is highly likely that they will fail or break and thereafter remain in that broken state until either repaired or replaced. Similarly, if the individual parts of a mechanical system are subjected to excessive stresses then they will likely also fail and the system itself will no longer be able to perform its designated function: vehicle engines will stop, water will no longer be pumped to homes and businesses and bank ATMs will no longer dispense cash. Without targeted human interventions these systems will remain inoperative and unable to perform their normal functions. However, living things possess the innate ability to respond to changes in their surrounding environments and thereby adapt to new conditions in order ultimately to survive. This ability represents the manifestation of resilience that is the focus of analysis under the framework of Complex Adaptive Systems Resilience (hereafter referred to as CASR).

The key feature that distinguishes Systems Resilience from Complex Adaptive Systems Resilience is adaptive capacity or adaptability. It is not just adaptation – change – in response to conditions. It is the ability of systems – households, people, communities, ecosystems, nations – to generate new ways of operating, new systemic relationships. If we consider that parts or connections in systems fail or become untenable, adaptive capacity is a key determiner of resilience. Hence in complex adaptive systems, resilience is best defined as the ability to withstand, recover from, and reorganise in response to crises. Function is maintained, but system structure may not be.⁽¹¹⁾

(11) Martin-Breen & Marty Anderies, (2011), p. 7.

In Psychology, as stated above, the objects of analysis are **individual people or groups of people** and attention is focused on how these individuals or groups respond to highly traumatic events. It goes without saying that all individuals are both highly complex entities and are unique, which precludes the creation of hard and fast rules that determine how particular people will respond to tragedies such as the loss of a loved one, the onset of serious illness or being caught up in a terrorist attack. However, depending on the specific circumstances of the individual or group in question coupled with the particular nature of the tragedy, investigation can reveal certain patterns of behaviour, and these patterns can point towards appropriate supportive strategies which can subsequently be employed to promote healing and recovery. Generally speaking, people respond to tragic events that occur in their lives by adapting to the changed circumstances in a variety of ways; however, this process of adaptation by no means guarantees that the outcome will be a positive one for the person concerned. For example, in cases of family bereavement, it is most unlikely that a formerly healthy individual, particularly a child, will go through such an experience largely unmoved and then carry on with life as if nothing has happened. Yet rather than going through what might be termed as something of a 'normal process' of grieving for the lost loved one and then slowing coming to terms with life without him or her, some children show a tendency to become introspective and withdrawn, or engage in anti-social or self-destructive behaviour, or exhibit complete denial of what has happened. In cases such as these where a process of recovery seems not to be taking place following a tragic event, in other words when a child is seen to lack the resilience to recover his or her former vitality, family members or other surrounding care-givers can take the decision to seek additional specialist support from health care professionals.

In of itself the process of adaptation reveals an additional difference between the resilience analysed under CASR and that of the first two frameworks. Whereas in the cases of specific materials or mechanical parts which are over-stressed and then fail, through human intervention these can obviously be removed and replaced with new versions

like for like or with improved versions, thereby enabling the overall structure or mechanical system to resume its original function. However, with regard to the objects of CASR analysis, these are living things which of course cannot be simply replaced with newer versions, and they themselves also change as a consequence of the disturbance that they undergo – in effect to a certain degree they become intrinsically different to how they were prior to the experience. In cases of experiences of trauma, this change can take the form of an individual feeling profound sadness, dislocation and lacking in energy for a prolonged period of time (which are of course symptoms of PTSD). However, conversely it can also lead to people developing resources within themselves such as hope and determination to overcome the tragic event and eventually ‘bounce back stronger’, a phenomenon that is known as Post-Traumatic Growth (Dekel, S., Ein-Dor, T. & Solomon, Z. 2012).

Ecosystems which are the objects of CASR analysis in Ecology are highly complex integrated systems of plant and animal life that are by their very nature in a constant state of change. In many and varied environments throughout the world countless individual organisms live and die in a never-ending struggle for survival following the laws of natural selection, and the surrounding earth, water and air are constantly affected by local weather patterns and by the changing of the seasons which are taking place on a global level. Within this natural milieu, CASR analysis evaluates the resilience of specific ecosystems on a number of temporal levels. Over and above the fundamental assumption that no terrestrial ecosystem is in possession of an entirely static, unchanging state, this analysis focuses on the ways that particular natural environments adapt to changes which occur within them on a short-term, medium-term and long-term basis.⁽¹²⁾

Regarding short-term changes, this can refer to the impact of natural disasters such as the aforementioned wildfires, floods and massive storms; on a medium-term level this

(12) In a similar vein to its usage in the field of Psychology, with regard to the survival and biodiversity of the plant and animal species living within it, the term ‘adapts’ here can have both a positive and negative connotation for the particular ecosystem in question.

can refer to the effects of deforestation or a sustained release of industrial pollutants into lakes and rivers; regarding long-term changes, the issue which has been the principal concern for many ecologists, environmental and climate scientists and also some private foundations for almost two decades has been the effects that anthropogenic climate change is having on a number of vulnerable ecosystems.⁽¹³⁾ Issues addressed in analyses such as these could include the following: to what extent can the vulnerable coastal ecosystems of Pacific island nations recover their flora and fauna in the aftermath of major storms?⁽¹⁴⁾ What are the impacts on the biodiversity of inland water systems of the release of large quantities of industrial and domestic pollutants, such as has been occurring in recent years across parts of northern China? What are the effects of rising sea water temperatures on the biodiversity of large coral reefs such as Australia's Great Barrier Reef?

With regard to CASR analysis carried out within the field of Sociocultural Anthropology, in a similar respect to Ecology the objects of evaluation are highly complex systems which in this case incorporate numerous both living and non-living elements – **particular cultures**. Analysis of these cultures can utilise a historical or contemporary focus, examining their unique features and investigating the reasons why some have managed to survive and maintain their traditions and ways of life in the face of the many pressures of modernity, whilst others have dwindled or died out. In addition to

(13) One example of this is initiatives carried out by the Rockefeller Foundation. Building resilience has been a central goal of the Foundation for almost a decade in both its initiative work and for the organisation as a whole. In 2007 it announced the creation of a large-scale project entitled the "Building Climate Change Resilience Initiative", which aims to boost communities' resilience to the effects of climate change with a particular focus on poor and vulnerable people around the world. This initiative frames resilience as the capacity over time of a system, organisation, community or individual to create, alter, and implement multiple adaptive actions in the face of unpredictable climatic changes. <http://www.rockefellerfoundation.org/our-work/current-work/climate-change-resilience>

(14) At the time of writing this issue was being discussed as a matter of considerable urgency at the aforementioned Disaster Risk Reduction Conference in Sendai, following the devastation wrought by Cyclone Pam to the Pacific island nation of Vanuatu.

focusing on the specific features of the people in question including aspects such as ethnicity and physiology, analysis also commonly examines the natural environment in which they live, the symbiotic relationship they have with that environment, their religious beliefs, their dress and in particular their language. It is clear that over long periods of time the unique cultures which have survived in various locations around the world have managed to do so by adapting themselves to the conditions that exist vis-à-vis the dominant surrounding culture. As a consequence, an additional element of CASR analysis carried out in this vein examines the means by which they have managed to achieve this and whether certain aspects of their traditional lifestyle have been lost in the process. Members of these cultural groups face the perennial challenge of identifying appropriate means by which their unique traditions can be passed on to succeeding generations, and this explains why much external attention is directed towards investigating the specific threats that these cultures face. Analysis thus focuses on issues such as overall employment and housing conditions, the content of school curricula particularly relating to classroom content that is delivered in the vernacular, the existence of engaging cultural opportunities for the young, and other problems such as alcoholism, drug abuse and depression.

A final point of note within this section relates to the fact that in many cases the analyses which utilise the framework of Systems Resilience in the fields of Disaster Management, Peacebuilding and Economics are often supported by or work in concert with concurrent analyses that evaluate CASR. For example, automated early-warning systems which guard against incoming tsunamis are installed, maintained and upgraded by human actors as a direct result of specific policy that is promulgated by countries' national and local leaders. Contingency plans drawn up to respond to or pre-empt water shortages that may come about as a result of attacks on key water installations are created by infrastructure experts and then receive funding approval from senior government officials. Emergency injections of funds placed into the reserves of struggling banks in order to calm depositor fears in times of economic turmoil are authorised by

central bank officials, normally with the blessing of government ministers. These cases illustrate the great importance of considering specific human action that is taken to avert crises, and therefore the value of conducting simultaneous analyses which utilise the frameworks of Systems Resilience and CASR.

Part 3: Applications of different conceptualizations of resilience: three contrasting cases

With regard to the three contrasting cases introduced in the following discussion, it is held that the application of specific conceptualizations of resilience which are utilised within four of the fields discussed above can shed light on practicable means to support communities that are facing a variety of threats. As stated previously, the three cases are taken from Afghanistan, Christchurch New Zealand and northern Scandinavia.⁽¹⁵⁾

The proposed conceptualizations of resilience are those which are utilised in the fields of Peacebuilding, Psychology, Disaster Management and Sociocultural Anthropology. The author proposes the application of these conceptualizations to the three cases in the following way: i) regarding Afghanistan, the conceptualizations utilised in Peacebuilding and Psychology; regarding Christchurch, those utilised in Disaster Management and Psychology; iii) regarding northern Scandinavia, that utilised in Sociocultural Anthropology. The cases are now introduced in turn and an explanation presented of why it is held that the application of the specific conceptualization or conceptualizations of resilience is appropriate in that case.

Case 1 - Afghanistan

For more than 30 years the country of Afghanistan has been beset by violent conflict. Stretching back to the Soviet invasion of the country in 1979, Afghanistan has been severely affected by long periods of turmoil and violence, especially prior to and during

(15) Each of the cases introduced here will be examined in greater detail in forthcoming research papers.

the rule of the Taliban from 1996-2001. In the aftermath of the simultaneous terrorist attacks launched by Al-Qaeda within the United States on September 11th 2001, a US-led invasion of the country took place which was aimed at removing the Taliban from power as it was found that the regime had been sheltering many Al-Qaeda members for several years, including its notorious Saudi-born leader Osama Bin-Laden. The fall of the Taliban in 2001 unfortunately did not succeed in bringing peace to Afghanistan since a number of warlords subsequently sought to take advantage of a power vacuum and establish their own quasi-fiefdoms in various regions of the country. In the intervening decade, thanks in no small part to the continued presence of large numbers of military personnel provided by the US and other nations, and also to great influxes of external development assistance, the government of Afghanistan has managed to bring stability to large parts of the country and repair much of the damage caused by over three decades of war. However, the country still faces huge challenges, not least represented by a partially resurgent Taliban which is now active both in the southern province of Kandahar and along the eastern border with Pakistan, a far from satisfactory security situation in which terrorist attacks remain an ongoing threat particularly in urban areas, and a thriving narcotics trade which has seen Afghanistan become the world's largest producer of opium.

The impact on the people of Afghanistan of over 30 years of war, coupled with ongoing security concerns and a far from robust infrastructure has been severe. The continuation of these conditions has and continues to provide the motivation for the sustained provision of external assistance to the country by members of the international community. With regard to large-scale Peacebuilding initiatives implemented by external actors in the post-Cold War era, in many respects Afghanistan represents an archetypal case. This is due to the fact that for a number of years the country represented an almost failed state whose population found itself in great need of large quantities of aid across multiple sectors. As a consequence, as part and parcel of diverse efforts on the part of both Afghan people themselves and their external partners to address the great

challenges facing the country, it is held that the conceptualization of resilience utilised within the field of Peacebuilding has been and continues to be highly relevant to this case. Considering the highly problematic recent history which the country has endured, in these circumstances what represent the most appropriate strategies that can be employed to promote resilience in Afghanistan? In other words, incorporating the terminology of the Peacebuilding conceptualization, how can the country's diverse communities withstand, adapt to and recover from the great stresses and shocks that long periods of violent conflict have caused, and also with regard to the country's future, how can its people potentially anticipate and prevent further conflict?

In addition, it goes without saying that over and above the great damage that prolonged conflict has inflicted upon the infrastructure of Afghanistan, including to its transport system, government buildings, schools, hospitals and other brick and mortar assets, its people have also suffered greatly and as a result many have been and continue to be traumatized by their experiences. Consequently, in addition to the proposed relevance of the Peacebuilding conceptualization, in order to promote the emotional healing and recovery of Afghanistan's many traumatized citizens, it is further held that the conceptualization of resilience utilised in Psychology is also highly relevant to this case. In this context there is a clear and ongoing need to identify and implement appropriate strategies which can assist Afghan people in adapting to the adversity, trauma and tragedy that they have experienced as well as the continued significant sources of stress which exist in their lives. It is therefore hoped that endeavours carried out in this regard can promote emotional healing and recovery, and thereby potentially enable a significant number of Afghans to 'bounce back' from their traumatic experiences to achieve Post-Traumatic Growth.

Case 2 – Christchurch, New Zealand

The second case is taken from the city of Christchurch in New Zealand and concerns the impact on the city and its surroundings of two major earthquakes which occurred in

2010 and 2011. The first earthquake which in terms of magnitude represented the more severe of the two occurred on September 4th 2010 in the town of Darfield about 40 kilometres from the centre of Christchurch and measured 7.1 on the Richter scale. Although this earthquake did not lead to any loss of life, it did cause extensive damage to large numbers of buildings in the surrounding area. A little over five months later on February 22nd 2011 a second earthquake struck right in the heart of central Christchurch causing enormous damage to the city and claiming 185 lives. Seismologists subsequently established that the second earthquake was actually an aftershock of the previous Darfield quake and had a smaller magnitude of 6.3 on the Richter scale, however the damage that it inflicted upon lives and livelihoods in Christchurch was vastly greater. In the aftermath of the two earthquakes emergency assistance poured into the city from across the Canterbury region, from other parts of New Zealand and from overseas, especially from Australia. Despite this influx of emergency aid however, as the author and his New Zealand colleague Professor Zane Ritchie of Rikkyo University observed upon visiting the city in September 2014, much of the centre of Christchurch and large swathes of its eastern suburbs remain largely in ruins since the city has yet to come to terms with its huge rebuilding challenge. Moreover, in addition to this, a significant proportion of the city's residents continue to suffer greatly from the after-effects of the twin disasters over four years since they occurred.⁽¹⁶⁾

The earthquakes of 2010 and 2011 had a severely detrimental effect on the residents of Christchurch in a number of ways. The shaking of the earth caused extensive damage to thousands of homes and businesses which served to deprive large numbers of residents of places to live and places of employment, and in many cases both. Severe liquefaction occurred across much of the eastern part of the city which effectively ren-

(16) A detailed account of the observations and analysis carried out by the author and Professor Ritchie in September 2014 can be found in Ritchie, Z., & Short, J. (2015). *Challenges to Community Resilience in a Post-Natural Disaster Context: Observations and Reflections on the Christchurch Earthquakes of 2010 and 2011*. 立教大学コミュニティ福祉学部紀要, 第17号.

dered many former residential districts unlivable. In addition therefore to suffering the loss of homes and employment, many residents experienced profound shock and subsequently PTSD as a result of witnessing the disasters first-hand, and in many cases these difficulties have been compounded by financial insecurity caused by ongoing disagreements with insurance companies over earthquake compensation. This situation represents a huge ongoing challenge for both the local authorities in Christchurch, the wider Canterbury region and the government of New Zealand as a whole. In this context it is held that the conceptualizations of resilience utilised in the fields of Disaster Management and Psychology are of relevance to meeting this challenge and thereby rebuilding both the residential and commercial heart of New Zealand's 'Garden City', and as importantly promoting the emotional healing and recovery of a large number of its traumatized residents.

With regard to the conceptualization of resilience utilised in Disaster Management, the catastrophe that befell Christchurch clearly came about as the result of a natural disaster, and therefore the modes of thinking employed within that field to promote resilience in comparable disaster scenarios are demonstrably relevant in this case. Specific strategies implemented in line with such thinking can include raising earthquake resistance standards on new buildings that are constructed within the city and wherever possible strengthening existing structures in order to withstand future seismic events. In addition, other appropriate strategies can include revising large-scale urban development plans as a result of the widespread liquefaction that occurred in the eastern part of the city, and also refining or redesigning disaster response protocols on the part of the emergency services and health sector. With regard to the conceptualization of resilience utilised in Psychology, in a similar respect to the Afghanistan case, despite the fact that the trauma experienced by the people of Christchurch came about as the result of a natural disaster and not a long-term conflict, there is a comparable need to address the considerable emotional distress that was caused by the earthquakes. As a consequence, it is held that this conceptualization is also relevant to this case and that specific meas-

ures implemented to assist the survivors of the earthquakes to come to terms with their traumatic experiences and subsequently recover their former emotional health are to be strongly welcomed.

Case 3 – Northern Scandinavia

The final case is taken from northern Scandinavia and concerns the culture of the indigenous Sami people. In contrast to the two previous cases, this case is considered over a considerably longer time period.

The Sami people have inhabited the far north of Europe in the Arctic regions of Norway, Sweden, Finland and the Kola Peninsula of eastern Russia for over 5000 years. For much of their history the Sami have thrived in these regions due to their successful adaptation to the harsh Arctic climate, living a semi-nomadic life and pursuing a variety of livelihoods including fur trapping, coastal fishing, sheep herding and most importantly reindeer herding. Possessing a way of life, cultural traditions and language which differed greatly from the peoples of central and southern Scandinavia, the Sami continued their traditional practices to a large degree unaffected by the culture of their southern neighbours for many generations until the nineteenth century when their own culture began to come under increased threat, especially in northern Norway. During a period of over a hundred years which continued until the end of the Second World War, and in particular between the years of 1900 to 1940, the Norwegian government made concerted efforts to eradicate Sami culture and this policy was also pursued to a lesser extent by the governments of Sweden and Finland. As part and parcel of this policy across the region, large tracts of land which had traditionally been used by the Sami for livestock herding were systematically appropriated by governmental authorities for other economic purposes, large numbers of inhabitants from southern Scandinavia were provided with incentives to relocate to the north, the Sami language was banned from official usage and in schools, and in some areas efforts were made to sterilise Sami women. In addition to this consistently hostile treatment on the part of the gov-

ernments of the Scandinavian region, Sami communities also suffered greatly during the closing months of the Second World War when the occupying German army carried out a scorched earth policy across much of northern Norway as it retreated west in the face of incoming Soviet forces. During the period from October 1944 to March 1945 whole towns, villages and homesteads known in the Sami language as *kota* were burned en masse by the retreating German army in what was to become known as the 'Rape of Finnmark'.

In the post-war period overall living conditions for the Sami were to improve to some degree, however, efforts to have their unique culture and the right to pursue their traditional lifestyle formally recognised and protected across the region did not make significant progress until the years following the major controversy which erupted over the construction of the Alta Dam in northern Norway from 1979-1982. During this controversy, representatives of Sami communities protested against the decision taken by the Norwegian government to build a major dam across the Alta river since they viewed this project as the latest and most egregious in a long line of large-scale governmental schemes that were threatening their traditional way of life. In order to halt the construction of the dam, several Sami activists went on hunger strike outside the Norwegian parliament in Oslo at the same time as many others barricaded themselves across the access road that led towards the planned site of the dam in northern Norway in temperatures as low as minus 40 degrees. The campaign against the Alta Dam ultimately ended in failure as the construction of the dam and its adjacent hydroelectric plant was completed in 1987. However, the controversy succeeded in creating both national and international awareness and also sympathy for the plight of the Sami who subsequently gained significant concessions from the Norwegian government, including the creation of a Sami parliament in 1989.⁽¹⁷⁾

The experience of the Sami people of northern Scandinavia during the last two hundred

(17) A Swedish Sami Parliament was subsequently established in 1993.

years demonstrates how a traditional culture that can trace its roots back to the prehistoric era can come under severe threat from one or more external, 'dominant' cultures, but through a combination of determination, tenacity and adaptability to the overriding surrounding conditions can succeed in ensuring its survival and then subsequently develop itself in the modern era. With regard to the conceptualization of resilience utilised in the field of Sociocultural Anthropology therefore, it is clear that Sami culture has in this sense proved itself to be resilient, and as a consequence it is held that future endeavours aimed at preserving its unique traditions and way of life can continue to benefit from the modes of thinking employed in this discipline. Considering the many pressures that modernity is almost certainly bringing to bear upon Sami culture, it is also clear that continuing this process will require vigilance on the part of both community leaders and the old and young in order that its unique cultural identity, knowledge and practices can be preserved and passed on to successive generations.

Conclusion

This paper has examined the various conceptualizations of resilience that are utilised in a number of different fields. It has made the case that it is not possible to identify one particular conceptualization of resilience which is applicable across all of these fields, but has upheld the position that the specific meanings that the concept holds *within* certain fields can provide valuable theoretical frameworks which can facilitate effective action within that discipline. An explanation has been presented of the three frameworks of resilience analysis of increasing complexity which are employed across several fields in order to assess the possession or lack of that quality in accordance with the particular conceptualization in question. The final section of the paper has introduced three contrasting cases from different parts of the world about which it is held that the conceptualizations of resilience drawn from four distinct fields can provide valuable outlines for effective action in order to address the specific challenges and difficulties that exist in the three cases.

With regard to the possible broader implications of the modes of thinking presented vis-a-vis the three cases, the author proposes the following:

- 1 . With respect to the Afghanistan case, the conceptualizations of resilience that are drawn from the fields of Peacebuilding and Psychology are proposed with the intention of assisting a country that has suffered the scourge of over three decades of conflict in its wide-ranging efforts to develop into a peaceful and prosperous nation in the 21st century. In other words, the basic intention is to support Afghanistan in its drive to become a **post-conflict nation**, and in so doing deliver healthier and happier lives for its citizens. As a consequence, it is held that this mode of thinking will be appropriate if applied to other nations that are currently facing similar post-conflict scenarios and which are likely struggling with comparable challenges to those of Afghanistan, for example the cases of Sri Lanka and the island of Mindanao in the southern Philippines.
- 2 . The conceptualizations of resilience proposed in the case of Christchurch drawn from the fields of Disaster Management and Psychology are done so with the intention of assisting the inhabitants of a major national centre in New Zealand in their efforts both to rebuild their bricks and mortar assets and also to recover their physical and emotional health in the aftermath of a devastating natural disaster. Clearly this mode of thinking, both with regard to repairing the damage caused by the earthquakes to buildings and people and also to lessening the detrimental effects of possible future seismic events, has applicability to other earthquake-prone zones around the world, and in particular to the case of Japan which is continuing to struggle to come to terms with the devastating effects of the March 11th 2011 disaster.
- 3 . In the case of the Sami people of northern Scandinavia, it is held that the conceptualization of resilience drawn from Sociocultural Anthropology can serve to shed light on the particular experiences and challenges that the Sami people have faced and overcome which have enabled them to ensure the survival and continuation of

their unique culture in spite of many severe difficulties. It is further held that this emphasis on specific factors that have contributed towards their culture becoming resilient in the face of external pressure can be of further benefit both to the Sami themselves and to members of other unique cultures in other parts of the world which are or in future may find themselves facing similar circumstances.

The author holds that the application of conceptualizations of resilience drawn from specific fields can be of profound benefit to both individuals and communities that are facing severe difficulties in a variety of contexts, including those that have come about as a result of long periods of conflict, natural disasters and external sociocultural pressure as in the three cases discussed here. In forthcoming research he intends to examine each of these cases and their potential broader national and global implications in greater detail.

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—James Daniel Short・法学部准教授—