Is resilience enough?

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Overview

The possibility of synchronous failure in critical systems made brittle by fragmented thinking requires a new approach to resilience. After a shock, transformative resilience bounces *beyond* the status quo rather than bouncing back to it.

Summary

The real challenge of disruptive change

Anthony began by suggesting that a combination of challenges made this time a critical one. An increase in the number of simultaneous critical challenges gives rise to the possibility of synchronous failure in key systems. This is a real challenge rather than simply a theoretical one. How can human society pass through the turbulent canyon of current times with as little disruption as possible, in a world which is beyond control and so complex as outweighs human capacity to respond?

This is compounded by the risks of a brittle society which, being geared overwhelmingly towards efficiency, will be less able to handle the disruption of its highly interconnected infrastructure. Reliance on the emergency services, which themselves could be badly affected by disruption, and the expectation that the authorities will be able to fix things are not helpful options. Multiple sudden impacts mean that reliance only on emergency services is not appropriate. Meaningful resilience requires a range of options.

Who is taking it seriously?

Anthony gave a few examples which highlight that many organisations and institutions are addressing this as a practical set of challenges.

Under the UK Civil Contingencies Act 2004, civic authorities have a duty to assess, plan and advise in the event of large scale emergencies. They also must keep an 'at risk register' and help local businesses (not communities or civic society) with continuity and manage the role of the media.

At a grassroots level, the Transition movement, which has no faith in the ability of authorities to take action on climate change, starts from the idea of local self reliance in as many matters as possible. It is growing rapidly in the UK and further afield and emphasises local communal action to develop more local ways of living.

Relocalisation is a complementary movement to globalisation and is more conscious than the latter about which aspects of life ought to be organised principally at the local level and which can be left to global forces. Relocalisation protects both from the fragility of globalisation and provides an opportunity to create robust, diverse local economies in which the principal motivation is not profit.

The US Council on Competitiveness, a network of blue chip businesses, acknowledges that the world is now more risky, complex, uncertain, rapidly changing and connected at speed. The Council acknowledges that this requires resilience to survive, adapt, evolve and grow.

The Asian Cities Climate Change Resilience Network is concentrating on building resilience of poor communities in the face of climate change. It does this by creating robust models and methodologies for assessing and addressing risk.

Fundamental problems causing us to be stuck

Anthony then went on to suggest that a number of fundamental problems mean that dominant forms of organisation, based on command and control, equip us poorly to thrive in such volatile contexts. They drive out resilience.

Thus most systems tend to view resilience as the ability to recover the status quo after a shock. At best, adaptation to the new set of circumstances is envisaged. Might it not be more useful to invest some extra energy and move beyond the condition which causes the shock in the first instance and transform to a new level of resilient society?

These include:

Hierarchies and silos for example the separation of economics science and politics denies the interconnected wholeness of the world in which we live and encourages individuals to see and experience the world in a fragmented fashion. This divide and conquer approach also applies to how we are organised to learn and think and this kind of fragmentation in city planning is making our cities frail in this emerging context of change and uncertainty

Monocultures remove diversity and variety, and try to control variability. Control is held centrally and power comes from the ability to develop abstractions and in the pursuit of economies of scale. The move to efficiency drives out redundancy so that when systems come under pressure there is no slack with which to respond. This is a mirror image of how planetary systems deal with change and uncertainty.

Brittle economic models are still based on efficiency, maximisation of profit and industrialised models where one size fits all. There is some mass customisation, but the underlying principle is still mass production for maximum profit. This is based on the insistence that the answer is always growth, even though we know we live on a planet of finite resources and that our economic activity does not meet our social or environmental aspirations.

Inappropriate infrastructure such as centralised electricity distribution with no local resilience makes the infrastructure upon which we depend for daily life vulnerable to shock. Anthony cited some examples whereby the electricity grid had been developed such that if the national system goes down, local distribution networks can continue to function for a few weeks on their own. This kind of approach is exceptional. Most infrastructure is geared towards throughput efficiency. This is the enemy of resilience as it creates brittle systems with insufficient flexibility to absorb shocks.

All of which leaves us stuck in an unhelpful pattern of thinking and action which is incapable of transcending the pattern of difficulties which humanity currently faces. This condition prevents us from experimenting with other possibilities and options. The most common response to shock is to try and get back to normal. Therefore we need to put some effort into making our arrangements more resilient so that we do not simply respond but also adapt to a new situation and transform our arrangements so that they become more generally resilient and able to absorb many different kinds of multiple shock.

To counter this 'stuckness', Anthony suggested a whole systems perspective in which all of the relationships between factors in a system are acknowledged:

- The re-integration of thinking and perspective away from silo thinking, e.g. towards pattern thinking. This might help us to change our minds more readily!
- Attention is paid to dynamic feedback loops e.g. what might the environmental responses to monoculture be? Effects and causes are part of a single cycle, not linear. This can sometimes be a problem, for example runaway climate change.
- Diversity is sustained in nature and human organisation so that all of our eggs are not in one basket
- One planet living – within the means of the earth's resources
- Social capital is cherished
- Critical slow variables, such as cycles of geology, are appreciated

What resilience teaches us

Drawing on Rolling' s work on Panarchy (represented in the diagram below), Anthony suggested that in cycles of change there are opportunities to spiral out of lower levels of resilience to higher levels. This arises from the idea of change as a cyclical rather than a linear phenomenon.
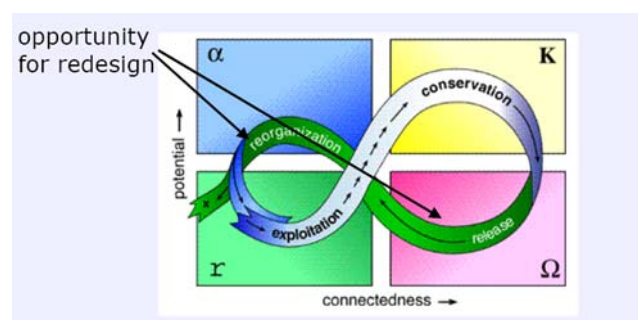
So as a process starts, it exploits the surrounding conditions to grow. As the process matures its characteristics become fixed and it enters a conservation phase. As the system begins to lose potential and fitness in the landscape it goes into a period of change and decline where it releases energy (e.g. a forest fire or car plant closure). This gives rise to the need to rejuvenate or reorganise. In this phase of the cycle there is the potential to redesign the system in a different way. If we are in such a place today this carries two kinds of risk.

The *lesser* risk and the *greater* risk

Tony argued that the *lesser risk* in facing change is that we try to get back to normal. This is futile because:

- the continued dominance of brittle economics continues to bring us back to crisis
- civil contingencies cannot cope as they also are affected
- forms of organisation based on control generate insufficient options to handle the complexity of current changes
- interdependent and interlocked systems push back

The *greater risk* is that we do get back to normal for a short while, creating the illusion of stability, but this quickly fails leaving us in a worse position characterised by discontinuous climate change, economic collapse, resource scarcity and instability in mental and physical wellbeing. Resilience cuts across and is affected by everything and to be transformational, rather than simply about recovery, it needs to address the whole system.

A key question then is 'Can we redesign for transformational resilience?'. This will require a design revolution in which integrity of systems becomes central and synergy takes over the lead from analysis as a central key to understanding. Learning continuously becomes the foundation of strategy and policy, operating humanely within planetary limits.

There are signs that key limits in planetary life support systems have already been exceeded in some areas for example biodiversity and the nitrogen cycle, with others, such as climate, severely compromised.

Concluding remarks

In concluding Anthony suggested that a useful way to navigate the complexity of the situation might be to use the IFF world model (www.internationalfuturesforum.com).
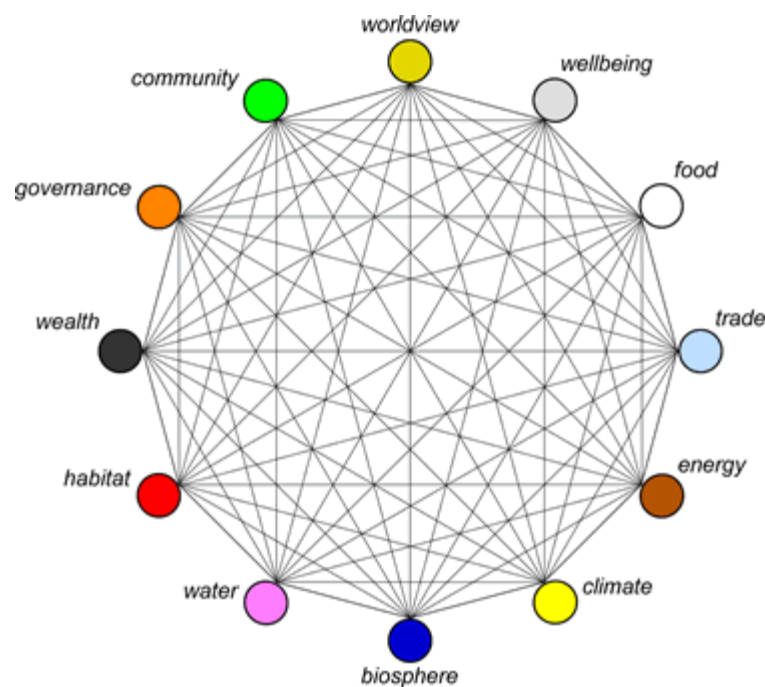
This enables people to address twelve inter-related aspects of human life on earth simultaneously.

He suggested that the Understanding Glasgow project (www.understandingglasgow.com) which is based upon the IFF world model is one way to develop an inter-related set of indicators at a city level which begin to show whether we are moving in a helpful direction.

He suggested that this, together with the following set of criteria, is a reasonable starting point for transformational resilience

- A whole systems approach – to ensure the robustness of arrangements
- Self organisation – to build diversity into arrangements
- Design with multiple levels in mind – to consolidate the integrity of the whole system
- Connect appropriately – not too little, not too much
- Allow for emergent properties so that options, which may become useful remain open
- Designer and design are not separable – In the design of resilient systems the intention and action of the human beings are part of an inter-related cycle. Design processes and outcomes are not simply abstract and objective, but deeply affected by the embodied knowledge and perspective brought to the task by the people involved.

We now live in a brittle society with large scale unhealthy interdependence, increasingly vulnerable to synchronous failure. This gives rise to a system level paradox – making things safer in the old paradigm makes them increasingly unsafe. 'Keep it safe, simple and cheap' inhibits the possibility of a transformational response to take us beyond the limits of the current system. This false cheapness takes resilience as profit and so destroys options for a viable future. Designing for transformational resilience within planetary and human limits is our best risk reduction strategy and least costly for future generations.