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Degrees of Resilience

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GRAEME WYNN

Facing an imminent deadline for the submission of these remarks, I am reminded of the centrality of latitude, to both my circumstances and resilience thinking. By general account, C. S. Holling developed the concept of resilience in ecological systems at my home university in British Columbia. Now, I find myself in New Zealand, 93 degrees south of (and a fair longitudinal stretch from) Vancouver, wondering about latitude: the maximum amount a system or a society can be changed before losing its ability to recover.

Major earthquakes rocked Christchurch (where I once lived and to which I have returned periodically) in September 2010 and February 2011. The second killed 185 people. The two major quakes and thousands of aftershocks caused widespread damage to land, buildings, and infrastructure. Liquefaction brought four hundred thousand tons of silt to the surface; at least three quarters of the city's sewage and water systems were severely damaged; post-earthquake inspections concluded that a quarter of all buildings in the central city had to be demolished; in the suburbs some ten thousand houses were left unfit for habitation; and large areas of the city were declared unsuitable for redevelopment.

Returning to Christchurch in April 2013, for the first time in three years, I am stunned by what I find. With so many major buildings gone, navigating once-familiar areas on the fringes of the former central business district is a challenge. Old landmarks have given way to new expansive vistas. Work on damaged roads and buried infrastructure hinders traffic flows. Within the central city cordon (accessible only to authorized personnel), and beyond, historical building façades stand

behind curtain walls of shipping containers to which they are braced in hope of saving them. Around them great piles of rubble remain. On many streets broken houses stand empty behind bent fences or crumbling walls, their once carefully tended gardens weedy seedbeds of nuisance to neighboring properties.

The landscape tells a powerful story, but it is not the only one. This is a small city of about 350,000 people (down about 2.5 percent since September 2010) and almost everyone has tales to tell about the quakes, the aftershocks, and the struggles (and triumphs) of the last two and a half years (to sense what living through this was like slow the animation available at the Christchurch Quake Map website: www.christchurchquakemap.co.nz/all). Every day, the local newspaper references the quakes, the rebuild, the recovery. The challenges are legion. Costs of the rebuild are currently estimated at \$40 billion, an enormous amount for a country of barely 4 million people.

Yet life continues. True, optimism is mixed with frustration, but most people have demonstrated a remarkable, inspiring, and even humbling capacity to carry on in the face of major perturbations. They exemplify human, psychological resilience. Still I am forced to wonder about the virtues of resilience in a larger, more abstract sense, as systemic recovery, because I sense that it is driven, here, by outmoded verities. Local democracy has been shunted aside by central authority. Plans for a new city core are full of green rhetoric and talk of seismic resilience—but exurbs mushroom across the neighboring plains. Rebuilding plans seem content to pour new wine into the old bottles of automobile dependency, rather than engage in a radical remaking of the urban structure. Even the catastrophic stochastic disturbance associated with the earthquakes has not produced a regime shift. Rather than anticipating and adapting to the precarious future that lies beyond peak oil, the operative equation defined by the resistant imperatives of capitalism seems (in large measure, and at the scale of the urban area rather than particular precincts) to read: resilience = recovery = replication. Thus the opportunity to develop a different (and much needed) city form is being lost.