

Proximate cause in insurance law: Fire following earthquake

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Insurers use exclusions in material damage policies to define or limit their exposures to losses to commercial property¹ resulting from earthquake and fire following earthquake. Particular problems arise when there are several possible causes of fire damage and at least one cause (such as earthquake) is excluded from the cover.

This paper discusses how the doctrine of proximate cause might operate in three contexts: Where a connected sequence of events initiated by earthquake results in fire; where intervening events occur between the earthquake and fire which might break that chain of causation; and where earthquake and another causal event occur concurrently and interdependently, each necessary but neither sufficient to cause the loss.

I BACKGROUND

A Earthquakes in New Zealand

Civilisation exists by geological consent, subject to change without notice.²

New Zealand experiences between 100 and 200 earthquakes per year. It can expect one shock measuring 6.0 on the Richter scale every year, one measuring 7.0 every 10 years, and one measuring 8.0 every 100 years.³ Since 1840, 22 earthquakes have measured over 7.0. The most destructive earthquake since 1840 occurred in Hawkes Bay in 1931. This measured 7.7, resulted in 256 deaths, and destroyed the Central Business Districts of Napier and Hastings by conflagration.

The Wellington area has always been particularly at risk, being located at the centre of the Main Seismic Hazard Zone.⁴ The return period for significant and damaging earthquake in Wellington is 20 years. In 1855, New Zealand's severest recorded

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1 As defined in r2(3) Earthquake Commission Regulations 1992 to mean non-residential buildings usually occupied for trade, professional, or commercial purposes.

2 Will Durrant, American historian.

3 DSIR "New Zealand Earthquake- Lessons for Others" (Insurance Institute of Victoria, Melbourne, 1989).

4 Wellington has 10 times and 20 times higher risk than Christchurch and Auckland respectively; "Lifelines in Earthquake-Wellington Case Study" (Centre for Advanced Engineering, Canterbury University, 1991).

earthquake (measuring 8.0) demolished every brick building in the Wellington Central Business District, leaving 12 people dead. Repetition of an earthquake of the 1855 scale in Wellington is said to be a 50% probability during a 250 year period.⁵ Estimates of the potential damage range between \$NZ3.6 billion and \$NZ20 billion.⁶

B Fire following Earthquake ("earthquake fire")

Contrary to popular imagination, direct "shake" damage may be a minor part (perhaps 25%) of the total loss from major earthquake. Consequential losses from earthquake fire (50%) and business interruption (25%) are likely to be more significant.⁷

Earthquake increases the *probability* of loss by fire. Commercial buildings contain numerous "standard" and "earthquake-generated" ignition sources, including open flames, networks of gas or electrical equipment, static electricity, and stored chemicals.⁸ Many simultaneous ignitions are likely to occur during and after major earthquake.⁹ The probability of fire increases further when buildings collapse. Buildings erected on fault lines or on poorer sub-soils or reclaimed land with shallow ground water levels are particularly vulnerable.

Earthquake also increases the likely *extent* of damage by fire, water and smoke. Many fire detection, water and sprinkler systems, and fire containment designs will fail.¹⁰ As uncontrolled fires may be doubling in magnitude every 7 seconds, "minimal" fire fighting tactics may become the only option available to the Fire Service. Dowrick¹¹ comments:

... it is likely that the priority roles of the fire service will be evacuation of people and prevention of fire spread. Only in the rare presence of a sprinkler system complete with water tank supply AND engine-powered standby pumps will there be significant likelihood of an ignited commercial or industrial building not being completely destroyed.

5 Rollo *"Insurance & Risk Management-Technical Report No 31"*, (Institute of Statistics and Operations Research, VUW, 1993).

6 The differences seem to depend on whether consequential losses such as business interruption, Crown self-insured risks etc are included in the assessment.

7 Suggested as typical losses by 90 *"Best's Review"* 82 (Sept 1989).

8 Refer eg: Swiss Re *"Earthquakes & Volcanic Eruptions"* (Swiss Re, 1992) 560-589.

9 Eg: San Francisco (1906) experienced 50 fires; Tokyo (1923) had 277; Hawkes Bay (1931) had 100; Mexico City (1985) had 200; San Fernando (1971) had 109; Whittier (California,1987) had 86.

10 Eg: In Mexico City in 1985 the water distribution network ruptured in 7000 places: Swiss Re (above n 8) 572; mains water in Wellington will "almost certainly" be lost within 20-25 minutes: Dowrick, Cousins, & Sritharan *"Report on Potential Losses to EQC due to Fire following Earthquake in Central New Zealand"* (DSIR, Wellington, 1990).

11 Dowrick (above n 10) 5.

Many variables affect the likely growth and spread of uncontrolled fire. Several conflagrations occurred in Wellington during its early colonial period.¹² Major conflagration appears less likely today due partly to increased street widths, improved water pumping facilities, and higher building standards, including increased use of less-flammable materials. Nonetheless, studies in Wellington¹³ and in California¹⁴ suggest that the overall risk remains significant.

C *The "Big One" Hits Wellington*

The scene can never be described; the crashing of houses, the fall of bricks, the hurrying to and fro of women and children, and the incessant wave-like motion of the earth, producing a chill at the heart and dreadful feeling of sickness.

The Wellington *Independent* October 18, 1848

Take a Tuesday morning in Wellington, say in 3 years from now. At 11.46 am a low rumbling is heard followed by a sharp crack as the earthquake hits. The occupants of 3 adjoining buildings in Courtenay Place scramble towards the stairwells. A cigarette is dropped. A blow-torch is abandoned. A one-bar heater topples over. Boilers, heaters, and gas-pipes rupture and electrical wiring sparks as beams dislodge and ceilings collapse. The brick firewalls between the buildings twist, shear, and crumble. Outside, the road surface is fracturing. Water mains have burst and traffic has stopped. Within 30 seconds, the shaking has ended.

The Alpha Building has partially collapsed. An internal partition is on fire. Smoke is visible upstairs. The ground floor of the Gamma Building has imploded, undermining the next-adjointing building. Smoke is noticed in the rubble. The Fire Service is saturated by emergency calls. Building debris and traffic block the streets. When an engine finally arrives, it is already low on water reserves. A hose is relayed to the Harbour. Reports arrive of another fire where people are trapped. The Service waters-down the buildings briefly before moving on. By 12.50pm a freshening wind revives the fire in the Alpha Building. Fire spreads through the broken firewall to destroy the Beta Building before the Fire Service returns.

In the Alpha Building, the ground-floor restaurant and the upstairs residential apartments are severely damaged by fire and by pervasive smoke, oil, and water. The owners, the body corporate, the restaurant proprietor, and the affected mortgagees all consider their options.

12 In 1842, 1856, 1868 and 1879, none it seems from earthquake; *"The Making of Wellington 1800-1914"* (Hamer & Nichols, VUP,1990) 113.

13 Dowrick(above n 10) 10 estimates that up to 106,000 m2 of floor area of buildings may be lost from conflagration in Wellington to a value between \$NZ200 and \$NZ300 million.

14 Scawthorn *"Fire Following Earthquake"* (AIRAC, Los Angeles, 1987) estimates that 500-600 post-earthquake fires are likely in either San Francisco or Los Angeles, with fire loss alone at potentially \$US17 billion.

The various insurers of the Beta Building disclaim all liability for losses from the fire; all relevant policies expressly exclude damage "directly or indirectly caused by or resulting from earthquake". The owners sue their insurers in contract.

The Gamma Building is insured against earthquake. The owner is sued in tort by the next-adjointing building owner. The owner's insurer disclaims liability, alleging that the building collapse was proximately caused by latent building defect which was excluded from the cover.

Throughout Wellington similar litigation of inter-locking claims is likely. The doctrine of proximate cause will be central to the eventual allocation of liability as between insurers and insureds. Before applying proximate cause to the Courtenay Place damage above, it is appropriate to outline: the current supply of earthquake covers; the use of exclusion clauses by insurers; and causation generally.

D *The Current Market*

Catastrophe losses are notoriously difficult for insurers to accurately predict or to rate. From 1944 until the Earthquake Commission Act 1993 took effect, the Crown accepted the risk of earthquake and earthquake fire losses up to the indemnity value of buildings; "the endeavour was to work out a principle under which the whole loss is deemed to be a national loss".¹⁵ There was ample private insurance capacity at relatively cheap rates both to "top-up" to replacement values and to cover business interruptions. By the early 1980s however, the Crown was becoming increasingly uncomfortable with its overall exposure to disaster.¹⁶ In 1988 the Crown proposed both "corporatisation" of the Earthquake and War Damages Commission and "a more sensible and realistic" approach to the overall management of earthquake risk.

The Earthquake Commission Act 1993 set that change of direction in place. Non-residential property covers against both earthquake and earthquake fire will be phased out completely by 31 December 1996. The Crown's stated intention is to move that risk entirely to the private sector, ostensibly to better use the primary and reinsurance markets, to offer the prospects of self-insurance, and to encourage more efficient risk management strategies such as retrofitting and building strengthening. The Crown predicted that the global supply of catastrophe insurance¹⁷ would readily expand to meet this phased-in increase in demand on local insurers and on reinsurance markets. That assumption is vital to the new scheme's success.

15 The Minister of Finance, Walter Nash (1944) Vol 266 NZPD 678,679.

16 Eg New Zealand Government "*Discussion Paper*" (Government Print, Wellington, 1988) 17-19: In 1987 the Crown scheme paid out \$260 million in claims arising from the Edgecumbe earthquake. Private insurers and reinsurers were also hard-hit eg: *FMI v QBE* [1993] 3 NZLR 305.

17 Earthquake draws on 15% of the total catastrophe reinsurance pool (estimated at \$US180 billion): The Earthquake Commission has the largest single catastrophe reinsurance contract in the world, \$NZ 1 billion in 1993; refer eg: Leigh Roberts "*On the Transfer of Catastrophe Risk*" (Dept of Econometrics, VUW, 1993) 2.

New Zealand insurers have historically been heavy users of reinsurance.¹⁸ Catastrophe reinsurance facilities allow local insurers to accept new business and to "lay-off" their excess exposures without the need to hold major internal cash reserves. Efficient access to overseas funds for rebuilding will also be vital to the economy after earthquake. As widely reported however, a series of mainly natural disasters in the late 1980s has significantly diminished the global supply of catastrophe reinsurance.¹⁹ Reinsurers have increasingly imposed conditions and limits on the grant of reinsurance facilities. New Zealand insurers have understandably allocated their diminished resources among existing clients, to newer buildings, and to lower risks. As a result, increasing numbers of older buildings in Wellington are either not covered or are now rated at a considerably higher premium.²⁰ Insurance capacity may not be increasing sufficiently to cover the liabilities relinquished by the Crown. It is, in more than one sense, a disaster waiting to happen.

E Exclusions of Earthquake and Earthquake Fire Damage

Certainty is paramount for both parties. The insured relies on the insurer's indemnity against loss of its property. The insurer requires as much actuarial certainty as possible to calculate its premium rates and to monitor its overall accumulations. Precise definition of the scope of the cover is vital to both. Until the 1950s, property insurers tended to specify which perils were insured. The insured recovered if it proved that the loss was caused by one of those "named perils". Since the 1950s, insurers have tended to offer "All Risks" or Material Damage covers. All "sudden" and "accidental" physical damage to the insured property is covered *except* damage which results from certain specified events, for example from earthquake and earthquake fire. Under these covers, the insured proves the physical damage. To avoid liability, the insurer must then prove that the cause of the loss was specifically excluded from the cover. Exclusions are therefore used by insurers:

- 1 as negative tools of *definition* to delimit the scope of the cover, in particular:
 - (a) to anticipate and remove any possible ambiguities;²¹
 - (b) to specify property not insured, such as cheques and cash; or

18 New Zealand's 35 insurers reinsured contingent liabilities of (estimated) \$NZ 25-30 billion in 1994: Insurance Institute of New Zealand.

19 Lloyds "Names" lost \$NZ23.26 billion in the 1988-92 underwriting years; *Evening Post* 26 August 1994.

20 In Wellington, up to 1500 buildings are said to be at risk and uninsurable until retrofitted in compliance with more recent Building Codes (Rollo (above n 5) 26). As (anecdotal) cost examples: Material Damage cover for a 10-story Wellington office building, constructed in 1978, cost \$40,000 in 1992, \$85,000 in 1993, and \$97,000 in 1994 (including \$67,000 for earthquake cover alone). The same building located in Auckland would cost \$30,000 for total cover. An industrial installation at Seaview cost \$20,000 (1 insurer) in 1993 and \$78,000 ('layered' though 8 insurers) in 1994.

21 For example, by excluding "deterioration or gradually operating causes" to emphasise the temporal meaning of "sudden" in "accidental damage".

- (c) to exclude contingencies which should be insured under other types of policy, for example business interruption losses; and
- 2 to exclude (so-called) "*uninsurable*" circumstances which would increase the magnitude of the exposure beyond a level predictable by or acceptable to the insurer. Added exposure might arise:
- (a) where the *kind* or *quality* of loss changes, as in fire conflagration after earthquake; or
 - (b) through '*weakening*', where an excluded peril leaves the property more susceptible to later (insured) perils. A building weakened by earthquake will be more vulnerable to later damage by fire or rain; or
 - (c) in '*state of affairs*' cases, where an extraordinary external situation (such as war) may make insured losses more likely. Earthquake disaster, for example, may increase the extent of looting or fire damage while police and fire personnel are over-burdened.²²

This paper focuses on causal exclusions. These involve apparently simple "one-off" syllogisms; if earthquake caused the loss and loss caused by earthquake is excluded, then that loss is not, and never was, within the cover. In contrast, temporal exclusions involve suspension of an otherwise-valid cover, often temporarily, while certain conditions exist. For illustration, the contract might provide that; "the building is uninsured for fire (including earthquake fire) during any period when fire equipment is [faulty]".

Section 11 Insurance Law Reform Act 1977 provides that where the insurer's liability to indemnify the insured is excluded or limited on the happening of certain events or circumstances *and* those events were so defined "... because [their] happening ... was in the view of the insurer likely to increase the risk of such loss occurring", the insured may nonetheless recover if it proves that those events or circumstances did not in fact "*cause or contribute*" to the loss. However, as Tarr comments:²³

Section 11 does not...embrace exclusion clauses specifying the kind of loss... to which the cover does not apply at all.

If an earthquake "caused or contributed" to the loss, section 11 will not assist the insured. If earthquake did not "cause or contribute", the insured will recover under the contract regardless of section 11 provided that the proximate cause was an insured peril. The better view²⁴ then is that section 11 adds little to any inquiry into causal exclusions.

22 Strictly 'weakening' and looting losses are not *caused* by earthquake but result from it; Courts treat the issues as causal nonetheless; Butler & Merkin "*Insurance Contracts*" (Kluwer, London, 1993) para.B11.2.

23 Tarr & Kennedy "*Insurance Law in New Zealand*" (2ed) (Law Book Company, Sydney, 1992) Chapter 7.

24 Eg: *Barnaby v South British Insurance Co Ltd* (1980) 1ANZInsCases 60,401,77,008 per Hardie-Boys J; *Countrywide Finance Ltd v State Insurance* [1993] 3 NZLR

Causal exclusions should also be distinguished from exclusions in general contract law. In those cases, courts have often been reluctant to assist a promisor who raises potentially oppressive defences to its own breach of obligation. Where exclusions instead operate to define the obligation of the promisor (as in insurance policies), Courts have resisted implying exclusions or other terms which then re-define that agreed risk.

II CAUSATION IN INSURANCE LAW

A *Issues of Multiple Cause*

To return to the Courtenay Place examples:

First, the *single event* of earthquake may directly cause "shake" loss. As above, the primary issue will be one of interpretation : was that loss effectively excluded from the policy?

Secondly, damage may result from a *sequence* of events which includes earthquake. This sequence may be "unbroken", each event being precipitated by the immediately preceding event. Suppose that in the Alpha Building the shaking overturned a wood burner or heater or caused pipes to rupture so that gas escaped and ignited on a bare pilot flame. Alternatively, such sequences may have been interrupted by an apparently independent event such as human carelessness, looting or arson. How does the "chain" get "broken"?

Thirdly, two (or more) causes might act *concurrently* or *interdependently* where neither cause alone was sufficient but which together cause damage. The earthquake might have acted on latent defects in the Gamma Building, for example where a suspended ceiling collapsed severing electrical wiring which was not housed in protective conduits. The earthquake alone would not have caused short-circuiting. Conversely, the negligently installed wiring was not a danger in "normal" conditions. Which cause is "proximate"?

Fourthly (and less probably), loss might result from a combination of distinct (or "additional") causes which act *independently*, each sufficient by itself to cause damage. For example, an existing fire and an earthquake fire might join during a conflagration and together destroy buildings.²⁵ An earthquake might demolish a building already in

745,756 per Hammond J.; Tarr & Kennedy. (ibid n 23) 143; "ANZ Insurance Reporter" (CCH, Australia, 1992) para.14-150; *but cf* : Kelly & Ball "Principles of Insurance Law in Australia & New Zealand" (Butterworths, Sydney, 1991) para 6.147.

²⁵ The classic "3-fire" causation problem; eg: *Anderson v Minneapolis Rly* 146 Min 430,179 NW 45 (1920).

the grip of an uncontrollable fire.²⁶ This more remote possibility is not further considered.

Before possible solutions are discussed, it is necessary to briefly outline some of the background philosophy of causation generally and proximate cause in insurance law in particular.

B Causes, Conditions, and Common Sense

The philosophical issues behind causation have "...vexed the best of human intellect for 2400 years".²⁷ Aristotle proposed categories of material, formal, efficient, and final cause.²⁸ More recently, John Stuart Mill proposed that "cause" is the whole set of conditions which jointly produce a result. Mill was in part searching for *prediction* of cause and effect. Orthodox legal judgment however usually involves a narrower objective, being *selection* in hindsight of "causes" from a particular set of past conditions. The law's traditional objective is not so much to *explain* or *predict* as to retrospectively *allocate* responsibility according to the rules existing at the time of the event. That inquiry is essentially an autopsy. Some modern economists prefer "forward-looking" re-allocation of resources based on policy considerations. Either way, value-judgments are inevitable. The underlying debate in causation is more about the appropriate width of and criteria for that necessary judgment.

Occasionally judges have acknowledged the influence of philosophy. Viscount Haldane, for example, recognised in 1917 that:²⁹

In strict logic the cause cannot be pronounced to be less than the sum of the entire conditions.

His Lordship then essentially rejected such philosophical approach in law:

... in ordinary speech and practice we select some one or more of what is an infinite number of conditions to be treated as cause.

26 At a further extreme, in *Garvey v State Farm Fire & Casualty Co* 770 P2d 704 (Calif S Ct, 1989) the Court discussed a hypothetical crash of an aircraft (insured peril) into a building during an earthquake (excluded peril).

27 *Arnott v O'Keefe* [1977] Ir LR 1,19 per Kenny J.

28 Aristotle also described earthquake as caused by winds imprisoned in underground caverns. Many Wellington residents believed that the 1842 earthquake was caused by gas ignition in caverns under Cook Strait; GA Eiby "*Earthquakes*" (Heineman Reed, Wellington, 1990).

29 *Thom or Simpson v Sinclair* [1917] AC 127,135 ; similarly, Lord Shaw in *Leyland Shipping Co Ltd v Norwich Union* [1918] AC 350 (HL) described causation as; "...not a chain but a net. At each point influences, forces, events, precedent and simultaneous meet; and the radiation extends infinitely".

That "ordinary usage" approach is central to the leading modern text *Causation in the Law* by Hart and Honore.³⁰ The authors see causes as either "voluntary" human actions or as "coincidental" or "abnormal" events which interfere with "ongoing processes". Causes "make the difference between a particular unexpected result and things going on as usual". Hart and Honore distinguish causes from *conditions* which are "normal" courses of events or settled states of affairs. Conditions are simply "part of the background"; the presence of wood is a necessary condition but not a cause of forest fire. Hart and Honore also argue for "common sense" approaches to cause based on "the central core of commonly agreed meaning" in everyday speech.

C Proximate Cause - Introduction

Causation in law then is essentially a control factor used to narrow down and allocate legal responsibility. Although issues of cause are central throughout the law, a unified doctrine of causation may not exist;³¹ instead, each branch and even sub-branch of law will develop its own principles. The first issue therefore is the purpose and context of the inquiry in insurance law.

To illustrate - some 4 hours after the 1906 earthquake shook San Francisco, a woman lit a kitchen fire to cook breakfast, unaware that the chimney had collapsed. This infamous "ham and eggs" fire spread uncontrollably to destroy up to 10,000 buildings. Causation in tort is used to find legal relations that are sufficiently proximate and to allocate culpability. Those boundaries are set essentially by public policy. Such a fire-starter who was liable in tort might then look to her own insurers for indemnity. The purpose of the narrower causation inquiry within the insurance contract is to decide whether the insurer must indemnify the insured allowing for any agreed limits placed on the transfer of risk from the insured to the insurer. First, what essentially caused the loss to the insured - the earthquake or her decision to cook (or both)? Secondly, did the insurer agree to cover losses from that causal event or events and, if so, to what extent? This search is often said to be more for the "real meaning of the parties to a contract of insurance"³² than for culpability or foreseeability.

Section 55(1) Marine Insurance Act 1908 (NZ) implies proximate cause into a contract of marine insurance:

Unless the policy provides otherwise, the insurer is liable for any loss proximately caused by a peril insured against, but he is not liable for any loss which is not proximately caused by a peril insured against.

30 2ed, Oxford UP, Oxford 1985.

31 Muchlinski "Causation and Proof of Loss in Marine Insurance" *New Foundations for Insurance Law - Current Legal Problems* (Stevens and Sons, London, 1987) 82; Landes & Posner "Causation in Tort Law- An Economic Approach" (1983-4) 12-13 JLS 109,110; Hart & Honore (above n 30) xxxiii.

32 *Becker Gray & Co v London Assurance Corp* [1918] AC 101,112 per Lord Sumner.

Courts have expressly applied this principle to non-marine insurance.³³ Since the parties can themselves exclude or modify the doctrine:³⁴

... the Court rarely looks further for causes than the causes highlighted by the contract, the perils and the exceptions. This is the short list, ready drawn for the Court.

As each case turns substantially on the terms of the particular contract and on its own facts, strict precedent cannot be developed. Parks suggests rather that the cases are "impossible to reconcile"³⁵ because Judges have not coherently separated the different concepts "lurking" in proximate cause. Clarke comments:³⁶

It is ... hard to understand what [proximate cause] means and hence hard to apply it. The result is that most judges are reluctant to commit themselves to greater precision.

Certainly, there is a general preference among judges and most text-writers to avoid the "philosophical maze"³⁷ of cause and effect and to reserve relatively unfettered discretion for the judge of fact. That broad approach was expressed by Lord Wright in *The Coxwold*:³⁸

Causation is to be understood as the man in the street and not as the scientist or the metaphysician would understand it ... without too microscopic an analysis but on a broad view ...

and Lord Dunedin in *Leyland Shipping*:³⁹

The case turns on a pure question of fact to be determined by common-sense principles.

For present purposes, the inquiry is divided into 4 parts which are now reviewed in turn:

- 1 *Causation-in-fact* (How did the physical loss happen?)
- 2 *Causation-in-law* or *Proximate Cause* (Is the insurer contractually bound to pay for that loss?)

33 Beattie J in *Techni-Chemicals* [1977] NZLR 311, 319: s 55(1) "is merely declaratory of common law"; Tarr *Insurance Law in New Zealand* (Law Book Company, Sydney, 1985) 180; Colinvaux *Law of Insurance* (Sweet & Maxwell, London, 1990) para 4.32; *Wayne Tank & Pump v Employers' Liability Ass Co* [1974] 1 QB 57, 72 (CA) per Roskill LJ.

34 Clarke *The Law of Insurance Contracts* (Lloyds, London, 1989) 525.

35 Parks *The Law of Marine Insurance & Average* (Stevens and Sons, London, 1988) 409.

36 Clarke *Insurance; the Proximate Cause in English Law* (1981) Cambridge LJ 284.

37 *Inman SS Ltd v Bischoff* (1882) 7 AC 670.

38 *Yorkshire Dales SCo v MOW: the Coxwold* [1942] AC 691, 706 (HL).

39 Above n 29, 362

- 3 *Qualifications* on that legal responsibility (in particular, considerations of public policy)
 4 *Apportionment* as a possible remedy.

III CAUSATION IN FACT

The trier of fact first seeks a physical explanation of the events preceding loss. Ground movements will be an obvious cause-in-fact of "shake" damage. Other causes-in-fact may appear.⁴⁰ For example, the mortar in a brick wall might have been weakened through deterioration or earlier earthquakes. The ignition events at the source of an earthquake fire will be relevant as will the factors which facilitated its combustion and spread. Value-judgments are inevitable. The "but for" test is often used; for example, the wall would not have fallen "but-for" the condition of the mortar. Fire would not occur "but for" oxygen, flammable materials, and ignition. However, this controversial test⁴¹ provides only part of the answer. Oxygen is a necessary *condition* for fire but commonsense value-judgments tell us that it will not ordinarily be a cause-in-fact or in law.

However selected, causes-in-fact serve only to narrow the legal inquiry. They determine only that the insurer is not liable if the loss is not clearly connected in fact to the insured peril. Legal liability is then allocated by proximate cause-in-law as applied to the contract.

IV CAUSATION IN LAW

A *The "Efficiency" Test*

Before 1918, the proximate cause in English and New Zealand law⁴² was the "immediate cause", being the last physical event to occur before the loss. This mechanical test was found in Bacon's Maxims:⁴³

... it were infinite for the law to judge the causes of causes, and their impulsions one of another. Therefore, it contenteth itselfe with the immediate cause ...

40 "Most results are brought about by a combination of causes"; Arnould *Law of Marine Insurance Contracts* (Stevens and Sons, London, 1981) para 775;

Eg: In *Campbell v Insurance Service Agency* 424 NW 2d 785, 789-90 (Minn Ct App, 1988) there were 8 possibilities, being storms, rain, ice, flying rocks, a high lake level, wind, waves, and faulty shutters.

41 Eg: in *March v Stramore Pty Ltd* (1990) 171 CLR 506, 516, Mason CJ said that the test may yield "unacceptable results" and should be "tempered by policy": see Mullany *Common Sense and Causation - An Australian View* 12 Ox JLS 431; Hart and Honore (above n 30) 109-129, and Mansfield (1963-4) 17 Vanderbilt LR 487 also reject the test as any "complete answer".

42 As applied eg: in *Holder v Phoenix Assurance Co Ltd of London* (1912) 31 NZLR 257.

43 Bacon *The Common Laws of England* Tract 1 "Maxims of the Law" Rule 1 (London, 1630).

A broader approach has been taken since the House of Lords' decision in *Leyland Shipping*.⁴⁴ In January 1915, the freighter *Ikaria* limped to LeHavre after being holed by a German torpedo. On the following day, a mid-winter gale caused it to collide against its berth. The Port Authority ordered its removal in case it sank and impeded Red Cross evacuations. The captain elected to berth in the shallower outer harbour rather than beach the vessel outside the port. The waterlogged head of the *Ikaria* grounded at successive low tides before repair could be carried out. That additional strain broke its back, causing it to sink after 2 days.

The insured argued that the last event before loss was entry of seawater, an insured "peril of the sea". The Court however traced an unbroken causal sequence from the impact of the torpedo to the eventual sinking. The insurer's defence therefore succeeded; the proximate cause of loss was a peril of war which was excluded.

Proximate cause was variously explained as a search for:

- 1 the event from which the loss was the "direct" or "natural consequence";⁴⁵
- 2 the "immediate cause" from which loss arose as a "natural consequence";⁴⁶
- 3 the "dominant cause" of the "natural sequel";⁴⁷ and
- 4 the "direct and immediate consequence".⁴⁸

Lord Shaw of Dunfermline sought the "cause which possessed the qualities of reality, predominance, and efficiency" and which "operates to produce a well-known result". From the impact of the torpedo:

the vessel ... is all the time in the grip of the casualty. The true efficient cause never loses its hold. The result is ... proximate as well as continuous in its efficiency.

It followed that the gale, the human decisions, and the groundings were not new intervening causes. Although their Lordships found on the facts that the *Ikaria* "would have been saved" had it been allowed to remain at its original deep-water berth,⁴⁹ that stay was merely an "interlude" which should be disregarded. Lord Dunedin:

After the torpedo struck her she was a doomed ship, unless she could get to a real place of safety. She nearly got to a place of safety but never quite did so.

44 [1918] AC 350.

45 Above n 44, 358 per Lord Findlay LC.

46 Above n 44, 362 per Viscount Haldane.

47 Above n 44, 363/4 per Lord Dunedin.

48 Above n 44, 366 per Lord Atkinson; "Direct" and "immediate" here referred to the "closeness" of the connection between cause and effect rather than to any "last in time" event.

49 Scrutton LJ. (Court of Appeal) found on the facts that this event interrupted the sequence of causes but considered himself bound by precedent to find the torpedo as proximate cause: [1917] 1KB 873, 888ff.

The sense of artificiality here derives from their Lordships' insistence on isolating a single cause from the various causes-in-fact. As expressed by Lord Dunedin:

The solution will always lie in settling as a question of fact *which of the two causes* was ... the dominant cause.

More recently, courts have lessened that emphasis on "dominance" and have allowed the possibility of more than one efficient cause. This is considered presently.

Although no single test is universally established, the "efficiency" test has been preferred in England,⁵⁰ New Zealand,⁵¹ Australia,⁵² Canada,⁵³ and increasingly in various American states, in particular since 1989 for earthquake and earth movement claims in California. Commentators there contend that the test unfairly favours insurers.⁵⁴ In practice, any imbalance appears to result more from the governing legal rules which prioritise exclusions over insured perils. In abstract, the "efficiency" test itself is neutral and might also favour the insured. For example, when Mount St Helens erupted in 1980, volcanic lava flows caused 2 glaciers to melt. This melting caused flooding followed by mudflows which destroyed houses 25 miles from the mountain. The plaintiff house-owners in *Graham*⁵⁵ faced two obstacles. First, proximate cause in Washington State was then essentially "last in time" immediate cause. Secondly, the policies excluded loss "directly or indirectly" resulting from flood and earth movement. The Court discarded the immediate cause test as "an anomaly" in favour of "efficient or predominant cause [that] sets into motion the chain of events producing loss". The eruption was the efficient cause such that the insureds succeeded.⁵⁶

How will the "efficient cause" test apply to damage from a major earthquake in New Zealand?

50 Lord Denning in *Wayne Tank* (above n 33) applied "effective or dominant cause" as "settled" law in England.

51 *Eg Techni-Chemicals* (above n 33); *Countrywide Finance Ltd* (above n 24).

52 *Eg National & General InsCo Ltd v Chick* [1984] 2 NSWLR 86, 97; *City Centre Cold Store v Preservatrice Skandia Ltd* (1985) NSWLR 739, 742 per Clarke J.

53 *Eg Co-operative Fire & Casualty Co v Saindon* (1975) 56 DLR 3d 556.

54 The decision in *Garvey* (above n 26) is criticised, for example, by Sheehan "*Theories of Concurrent Causation*" (1992) 41 Drake LR 765,766; Mattis "*Earth Movement Claims in California*" 31 Santa Clara LR 29 (1990); and Umeda "*Concurrent Proximate Causes*" 29 Santa Clara LR 423 (1989).

55 *Graham v Public Employees Mut Ins Co* 656 P 2d 1077 (Wash, 1983).

56 Volcanic activity was not specifically addressed in the policy; while the eruption of lava also appears to be an "earth movement" (excluded), the eruption was held an explosion (an insured peril) on a grand scale.

B *Phrases used in Earthquake Exclusions in New Zealand*

State Insurance's standard Commercial Property Insurance Policy provides:

This policy does not insure loss or damage *caused by or resulting from* earthquake....

This formula essentially adopts traditional proximate cause rules. The phrases "*due to*", "*directly*", "*direct consequence of*", and "*arising from*" have the same effect.⁵⁷

More often, the scope of exclusions is expanded by insurers so that earthquake may be an operative cause if it played even an indirect part in the loss. For example, the Insurance Institute's standard precedent for both Material Damage and Business Interruption covers provides:

This policy does not include any loss or damage *directly or indirectly* caused by or resulting from earthquake ...

This same "indirect" result is achieved if the insurer uses "*occasioned by*" or "*remotely occasioned by*" or expands on "*caused by*" by adding "*or arising out of*" or "*or in connection with*" or "*or contributed to by*" and even "*or in consequence of*".⁵⁸ In these cases, courts have still required insurers to evidence *some* causal link between the excluded cause and the loss but have allowed such links to be somewhat less than "direct" or "efficient" cause.

The Earthquake Commission Act 1993 defines "*natural disaster fire*" as fire "*occasioned by or through or in consequence of* [earthquake]". "*Natural disaster damage*" occurs "*as the direct result*" of natural disaster fire. Thus where the Crown scheme applies, the insured recovers even where the link from earthquake to fire is merely *indirect* but only for damage resulting *directly* from that earthquake or fire.

C *Historical Precedent*

1 *San Francisco 1906*

The relevant policies excluded "*... loss occasioned by or through ... earthquake*".⁵⁹ Courts construed "occasioned by" to mean "immediately caused" by earthquake. Most conflagration losses were deemed caused by fire rather than by earthquake and were therefore covered. "*Occasioned by*" now includes indirect causes which "... occur within

57 Refer cases in Arnould (above n 40) Vol 2 p 635; Butler & Merkin (above n 22) B6.01-04; Kelly & Ball (above n 24) 7.80-85.

58 See the authorities cited by in Butler & Merkin (above n 22) B6.01-04; Kelly & Ball (above n 24) 7.91-7.93.

59 Refer case-notes: West's "*California Insurance Code*" and (2d) American Digest 1907-1916.

the physical zone of the peril excepted, *ie* on the occasion of the peril".⁶⁰ The phrase would exclude recovery if similar losses occurred today.

2 *Jamaica 1907*

Various policies here also excluded ... loss or damage by fire ... *occasioned by or through ... any earthquake*.⁶¹ Three plaintiff insureds claimed that one of 3 sources of the conflagration was already on fire when the earthquake struck. An English jury found for one insurer. Two juries in Kingston found for the insureds. While these courts seemed willing to look beyond "immediate cause" to the source and spread of each fire, earthquake was still likely (as in San Francisco) to be at most a remote cause of fire. Indeed, Bigham J suggested:⁶²

Earthquake cannot ... proximately cause fire. If the jerking caused by the earthquake occasioned burning coals to be thrown out of a grate onto some material, I doubt whether ... the proximate cause is the earthquake at all. The proximate cause is the burning coal falling on the material.

3 *Hawkes Bay 1931*

Napier and Hastings were rebuilt primarily through emergency interest-free Crown loans⁶³ after most of the 40 or more insurers declined liability for fire damage from the 1931 conflagration. Proximate cause issues do not appear in the Law Reports.⁶⁴

Returning now to various of the issues arising from the Courtenay Place examples: Proximate cause is applied first, to causes in sequence and secondly, to concurrent and interdependent causes. "Indirect" cause is then reviewed.

D *Successive Causes*

Excluded peril (earthquake) followed by Insured peril (fire)

I *Tests of proximity*

The *Leyland Shipping* tests attempt to set criteria to help courts clarify the boundary between remote and proximate. While these tests allowed greater flexibility, they also introduced finer distinctions and some uncertainty. In particular, must earthquake

⁶⁰ Clarke (above n 34) 539; eg: *Cooper v General Accident* (1923) 128 LT 481; *Switzerland General Insurance v Lebah Products* (1983) 3 ANZ Ins Cases 60-498.

⁶¹ Case-noted in Appendix IV, *Ivamy Fire & Motor Insurance* (Butterworths, London, 1968).

⁶² *Tootal Broadhurst*; case-noted by Ivamy (above n 61).

⁶³ The Hawkes Bay Earthquake Act 1931; Geoff Conly *The Shock of '31* (Reed, 1980).

⁶⁴ The only reported case concerned merger of losses involving a car destroyed in the conflagration: *Wright, Stephenson & Co Ltd v Holmes* [1932] NZLR 815.

inevitably or *inexorably*⁶⁵ result in fire or is it enough that the connection is merely *probable* or *possible* or *likely*?

Ivamy suggests:⁶⁶

If the peril insured against is the *reasonable and probable* consequence, *directly and naturally* resulting in the ordinary course of events from the excepted cause, the excepted cause is the cause of the losssince there is no break in the sequence of causes and the relation of cause and effect ... is established".

Clarke suggests:⁶⁷

- 1 The proximate cause is the event which in all the prevailing circumstances led *inevitably* to the *kind* of loss in question.
- 2 If such loss was inevitable, its full *extent* will be recoverable where at the time of the peril such extent was *not unlikely* to occur.

Hart and Honore reject any such "strict" tests. They suggest that even if short circuits frequently *cause* fires, common sense suggests that short circuits are not inevitably *followed by* fires. Since the law considers results in hindsight, it is not usually necessary to look for probability or inevitability. Simply, *that* short circuit caused *that* fire. Other short circuits might not but there is no need for non-philosophers to explain further. The legal connection can be explained by common sense applied retrospectively to causes-in-fact.

Hart and Honore might first categorise the buildings functioning "normally" as the background *condition*.⁶⁸ Earthquake would ordinarily be a cause, being an active and "abnormal" intrusion which "makes a difference" to that ongoing condition. Any ignition event might also be a cause if it resulted from a "*voluntary*" human act or was "*coincidental*" to the earthquake. A "coincidental" cause must be "very unlikely [to occur] by ordinary standards" and must have no "common sense causal connection" with the earthquake. These terms are best explained by illustration.

2 *Losses in the "ordinary course"*

First, taking a simple example of a sequence of events in the Alpha Building which did *not* involve "voluntary" human intervention or negligence:

- 1 earthquake directly ruptured gas pipes or electrical wiring; and

65 According to Lord Denning in *Gray v Barr* [1971] 2 QB 554.

66 Ivamy *General Principles of Insurance Law* (6ed Butterworths, London, 1993) 416-7; "Ordinary course" here seems to require first, that each situation must be considered in its own context, and secondly that no "extra-ordinary" intervention interrupts the "intimate connection" between events in the sequence.

67 (Above n 36) 287 and at "*Recent Causes*" (1983) 4 LMCLQ 576, 578.

68 Ie: "a state of affairs itself incapable of causing any loss ... upon which the proximate cause has acted"- Butler & Merkin (above n 22) para B6.1-05; as (finely) distinct from a contributory but non-proximate cause.

2 ignition occurred when gas reached a pilot flame or from electrical short-circuit.

First, applying Ivamy's "reasonable and probable" test; we know that gas disruption and short-circuits occur *reasonably* often during earthquake. In hindsight, we may even say that where gas escaped in the vicinity of *that* pilot flame or short-circuit and sparking occurred near *that* flammable material, the connection between earthquake and fire was *probable* in that particular "ordinary course". This test accepts the possibility that sometimes ignition might not occur in those conditions. Unless other causes emerge, the proximate cause will be earthquake rather than fire.

Applying Clarke's "inevitability" test; fire damage may not be a *kind* of loss *inevitably* resulting from earthquake. First, earthquake does not inevitably lead to short-circuit or gas disruption. Further, ignition and combustion are required. These might not happen. Except in extreme cases, the most that might be said in hindsight about any earthquake fire is that fire was *likely* or even *probable* in those prevailing circumstances. The "inevitability" of fire seems to start no earlier than combustion. This result recalls the historical view of earthquake as remote cause only of fire.

Applying Hart and Honore's test: ignition here would be neither "*voluntary*", since no humans intervened, nor "*coincidental*" since (in hindsight) the fire was both factually "likely" in that context and had a "common sense" connection to the earthquake. The earthquake would therefore be the sole proximate cause. This affirms the result reached through Ivamy's test.

It follows from the above that if an excluded earthquake sets off a sequence of events culminating in loss by fire, the insured is likely to recover only if a separate, proximate, and insured cause intervened after the earthquake to cause the eventual fire damage. What criteria are available for "interventions"?

3 *Interventions*

First, suppose that the fire in the Alpha Building resulted when a gas torch or a cigarette was discarded.⁶⁹

Probability

Here, Ivamy reverses his test; "interventions" are fresh causes which are not the "reasonable and probable consequence" [of earthquake]. The earthquake as original cause must have "produced" or "exhausted" its "natural result", such that the connection between earthquake and loss becomes "accidental"⁷⁰. These undefined terms seem only broadly helpful. Certainly, we should consider no further than the external and

69 Eg an abandoned gas-torch caused a \$US1m fire in a shopping mall in the 1987 Whittier, California earthquake ; EQE Quick Report *Whittier Earthquake* p 9.

70 Above n 65, 301; also Palles B in *Walker v The London & Provincial* (1888) Ir LR 572, 577.

immediate factual "potency" or "necessity" produced by the earthquake. As Scrutton LJ suggested in *Symington*:⁷¹

Is it a fear of something that will happen in the future, or has the peril already happened and is it so imminent it is immediately necessary to avert the danger by action?

Examining the welder's actual state of mind and what any "reasonable" person might have done appear more for culpability in tort. When Ivamy's "reasonable and probable" criteria are introduced however, policy judgments of blame or foresight seem more likely to intrude. Are clearer criteria available?

Inevitability

Like "probability", Clarke's "inevitability" test seems less useful when the intervention includes human choices. The welder might intend to return to retrieve the gas torch but elects instead to steal property or to rescue trapped people or is prevented from returning by the Fire Service. Where does the "inevitability" of loss by fire start? Clarke may be suggesting that inevitability starts at the point of the "last chance" or of "loss of control".⁷² If so, the test may still be incompatible with an "efficiency" test of proximate cause.

Voluntariness

Hart and Honore might instead ask whether the discarding of the gas torch or cigarette was a "voluntary" interference with the "ordinary course of events" which best explains the resulting loss. The person intervening after earthquake must "freely" choose to treat the new state of affairs as "providing the opportunity or occasion for a new course of conduct". Conversely, "involuntariness" suggests either ignorance or necessity or compulsion.⁷³ This criterion may best explain the discounting of the human "interludes" in *Leyland Shipping*; the decisions of the port authority and the master might be seen as driven by the "necessity" created by war rather than by any "free" choices.

As further illustration; if an electrician installed a light so that house-fire resulted when the householder switched the light on, the proximate cause would be the installation. The householder's act was neither a "voluntary" nor informed choice about any new course of conduct; it was merely incidental to the original "casualty" created by voluntary acts of the electrician. The result might however be different if the householder was warned not to switch the light on. That voluntary choice would become an intervening cause.

71 *Symington & Co v Union Ins Sty of Canton Ltd* [1928] 31 LL Rep 179 (CA).

72 As appears suggested by Clarke (above n 34) at p 528 fn 39.

73 Above n 30, 41 fn 12; 136 fn 23ff; & ChapVI; For Hart and Honore, "voluntariness" equates to "free will": being without ignorance, and free of physical, moral, or legal compulsion.

Applied here, "voluntariness" provides criteria to deal causally with the discarded cigarette or gas torch without becoming too entangled in relative human fault. We can, in theory, ask "did [the welder] have any *real* choice", rather than "do we approve of his or her conduct". Inferences of fault and policy may nonetheless be difficult to suppress regardless of the test used.

Relief Works

Suppose also that during the period following earthquake, relief workers caused sparks or friction which caused fire, say by igniting escaping gas.

Many disaster relief works will either be the "direct and natural" result of earthquake or "involuntary" (in the cases where earthquake creates a physical necessity). "Reasonably justified"⁷⁴ efforts to control the casualty may therefore remain part of the casualty's "efficiency", even if those salvage efforts in fact increase the damage. Arnould comments:⁷⁵

Errors of judgment made in the grip of a casualty may not break the chain of causation.

These judgments may include failures to pump water or decisions to prioritise other fires or to water-down or even destroy a building to mitigate overall loss by imminent conflagration. While the cases are not always consistent,⁷⁶ courts might also be expected (as in *Leyland Shipping*) to be less critical about the correctness of decisions made during adversity. It may be that gross negligence,⁷⁷ if not wilfulness, will be required before any salvage becomes "efficient" cause.

4 *Delayed interventions*

Suppose that the "intervening cause" happened some time after the earthquake; at what point is the "grip" of an earthquake extinguished?

The ongoing effect of any casualty is determined not by time but by continuing "efficiency". Again, some fine factual distinctions need to be made. In *Russell*,⁷⁸ a fire left a wall unsupported; the wall collapsed during a strong but not unusual wind 7 days

74 MacGillivray & Parkington *Insurance Law* (8ed, Sweet & Maxwell, London, 1988) para 1875.

75 Arnould (above n 40) para 773.

76 *Stanley v Western Ins Co* (1868) LR 3 Ex71; Birds *Modern Insurance Law* (Sweet & Maxwell, London, 1993) 217; cases cited by MacGillivray (above n 76) paras 1873ff; cf: cases cited by Arnould (above n 40) para 771.

77 This is the cross-over criterion for culpable "knowledge" in *Baden Delvaux & Lecuit* (1983) BCLC 323.

78 *Russell v German Fire Ins Co* 111 NW 400 SC Minn (1907).

later. The later loss was caused by fire. However in a similar situation in *Gaskarth*,⁷⁹ a gale was held to be "violent" or unusual; the fall of the gable was caused by the gale. The emphasis seems more on the "ordinary" or "abnormal" nature of the intervention rather than on the "weakened" condition of the building. To adapt Ivamy:⁸⁰

... it is immaterial that, in the particular circumstances, the effect of the [earthquake] on the subject-matter of insurance is to render it more susceptible to the operation of the intervening cause. The [earthquake] is exhausted when it has produced its notional result ...

In *Lumley General Insurance v Vintix Pty Ltd*,⁸¹ the insured's building in Newcastle was damaged by earthquake in December 1989. The building was insured against "destruction or damage *directly* caused by ... earthquake". In February 1990, before repairs could be carried out, heavy rain flooded the building. The building would have been water-tight but for the earthquake. The insurer argued that the flood damage was not recoverable under the earthquake cover.

Ivamy's "exhaustion" metaphor might be used here to justify any decision but does not particularly assist in making one. Clarke's "inevitability of the *kind* of damage" test suggests that *unusual* rain would be a fresh cause. Hart and Honore instead suggest a four part "coincidence" test. Coincidence occurs when two or more *independent* and *significant* events happen at the same general time and place. That conjunction must be "very unlikely" or "abnormal" and must occur *without human contrivance*.

The later rain in *Vintix* was independent from earthquake, significant in that it "made a difference", and was free from human contrivance. According to Hart and Honore, the court's sense of the overall "context" and "purpose" of the inquiry will then determine whether the conjunction of earthquake and storm was "likely".⁸² Whatever the initial empirical attractions of the "coincidence" test, it ultimately requires the same intuitive leap as Ivamy's "probability" test, at least in this example. The problem is resolved by a rather vague "common sense" view of the factual connections.⁸³ In the end, this judgment might be based less on "pure" cause than on policy decisions about "fairness" and "what ought to be done".

79 *Gaskarth v Law Union* cited in MacGillivray (above n 74) para 1553 fn 14; CCH (above n 24) para 18-400.

80 Above n 66, 387.

81 (1991) 6 ANZ Ins Cases 61-087.

82 Above n 30, 80; The standard of "likelihood" is "in the light of the knowledge available to ordinary people"; the "indeterminacies of such standards ... call for the exercise of discretion".

83 In *Vintix* the issue was ultimately redundant. *Vintix* was also covered against "storm and/or tempest and/or rainwater". Two judges nonetheless suggested (*obiter*) that rain was the "effective" cause; one suggested earthquake.

5 Conclusion on successive causes

In summary, there are no general rules to apply to all interventions nor can "pure" logic bridge the gulf from effect back to cause. The "makes a difference", "but-for", and "conditions/causes" tests appear as useful indicators but not as conclusive guides. Tests of "inevitability" or "probability" appear less helpful than tests of "voluntariness" where humans intervene, or, to a lesser extent, "coincidence" where they do not. The more difficult cases may merely emphasise Hart and Honore's proposition that all causal metaphors, including their own, are ultimately inadequate and that broader policy issues should be openly recognised and left to the court's judgment.

Much of the artificiality in the cases seems to derive from the search for a single governing cause. In reality, as Lord Shaw suggested in *Leyland Shipping*, many influences and conditions will meet at each point of effect in a "net" of causation. Modern courts are increasingly willing to find multiple or concurrent causes in appropriate cases.

E Concurrent interdependent causes

Excluded peril (earthquake) operating with an Insured peril (negligent installation)⁸⁴

Two or more "efficient" causes might act concurrently and inter-dependently to together cause injury which would not have occurred if either cause had been absent.⁸⁵ Concurrent cause issues are likely to be common after major earthquake. Swiss Re notes:⁸⁶

In many cases it is the failure of equipment that precipitates an earthquake fire. Whether it be the rupture of the tube connected to a gas bottle or gas tank in a house, or the failure of pipes in a chemical plant, inadequate design or improper workmanship during installation is nearly always a contributing cause.

This involves "very difficult problems"⁸⁷ where one of those causes is excluded and one is insured. Suppose, for example, that the electrical wiring in the Gamma Building had been installed negligently, being inadequately protected with housing or conduits. The suspended ceiling collapsed during the earthquake, tearing the wires. Short-circuiting resulted in fire. The owner's liability policy covered faulty equipment but excluded earthquake damage.

84 The principles here might equally apply to earthquake when covered as an insured peril operating concurrently with an excluded peril (such as latent building defect).

85 "Concurrent" here means causes which are "necessary" but not individually "sufficient". The distinction from causes in sequence becomes blurred and "impossible to express" (per Lindley LJ in *Reischer v Borwick* [1894] 2QB 548) but will not generally be crucial given the flexibility of the "commonsense" test.

86 Swiss Re (above n 8) 70-71.

87 Parks (above n 35) 413.

Similar issues arose in *Wayne Tank*.⁸⁸ Wayne Tank installed equipment in Harbutt's plasticine factory. During that installation the factory was totally destroyed by fire. There were two possible causes. First, Wayne Tank made major design errors. Plastic piping intended to house combustible hot liquid wax was inadequate and negligently installed. Secondly, Wayne Tank's employee elected to leave the untested equipment operating but unattended overnight. Wayne Tank's general insurer ICNA accepted liability for the employee's negligence. ICNA required Wayne Tank to sue its public liability insurer EL for the design errors. EL's policy excluded:

liability consequent upon ... damage caused by the nature or condition of any goods ... sold or supplied by [Wayne Tank].

The court found that both causes were "effective" but (by a majority) that the defective equipment was the proximate cause. As this cause fell within the exclusion, EL was not liable under the policy.

Lord Denning MR simply applied common sense, or his judgment of it, to determine that:

the conduct of the man was just the trigger, the precipitating event, which brought about this disaster. There would have been no trouble whatever if the system had been properly designed and installed.

The converse also appears true. There would have been no trouble if the employee had not been negligent.⁸⁹ Both potential causes pass any "but-for" test. Roskill LJ also considered that the defective apparatus.⁹⁰

... is all the time in the grip of the casualty. The true efficient cause never loses its hold.

The employee's intervention merely "aggravated the defects and precipitated the final result". These judgments are persuasive if the "efficiency" test is applied to the overall *purpose* which connects both causes; the employee's actions, although involving elements of "voluntary" conduct, were merely incidental to Wayne Tank's larger purpose of "supplying" the equipment. However, the converse argument also appears persuasive. Borrowing Hart and Honore's terms, the negligent installation was merely a stable (albeit potentially dangerous) background *condition*. The defect was merely latent until electricity was both switched on *and* left on. The employee's "voluntary" act "made the difference" by interfering with the ongoing process.

Turning to the issue in the Gamma Building; if Lord Denning's "trigger" analogy is applied, the ongoing "grip" of the dangerous wiring would be the proximate cause. Earthquake, like Wayne Tank's employee, merely "aggravated the defects and precipitated

88 Above n 33.

89 As found by Stephenson J at first instance: [1970] 1 QB 447.

90 Above n 33, 74C specifically adopting Lord Shaw's penultimate paragraph in *Leyland Shipping* (above n 29).

the final result". Conversely, major earthquake may well be "coincidental" as proposed by Hart and Honore, being independent, significant, abnormal, and "likely" to happen at some point in the life of the building. On that view, earthquake would be the proximate cause. The wiring might be a mere latent condition or (at most) a non-proximate cause which facilitated but did not cause the loss.

The traditional single "dominant cause" approach again appears artificial. Here, the earthquake and the defective wiring appear better interpreted as inter-dependent concurrent and efficient causes. Indeed, in his minority judgment in *Wayne Tank*, Cairns LJ considered that while the court should first attempt to find a single cause, it should not strain to find dominant cause where there are two such efficient causes and neither is clearly more decisive. This approach can now be accepted as established law.⁹¹

If two causes are concurrent and proximate, should the excluded cause or the included cause prevail? All judges in *Wayne Tank* went on to consider (obiter) that the exclusion would then be paramount:⁹²

[the insurer's] exemption is not taken away by the fact that there was another cause equally efficient also operating to cause the loss.

In *Countrywide Finance Ltd*,⁹³ Hammond J applied *Wayne Tank* in favour of the insurer. In New Zealand therefore it seems that insurers also avoid liability if any one concurrent cause is excluded, even if an insured peril also contributes significantly to the loss.⁹⁴ Applying *Countrywide Finance* to the Gamma Building problem; if a court did opt for both the earthquake and the defective wiring as proximate causes, the exclusion will be paramount so that the insurer will succeed. The effect is the same as if the excluded earthquake had been found to be the sole proximate cause. Even if the court instead opts for the (insured) wiring as the sole "efficient" cause, the insurer will still succeed if the policy excluded damage "indirectly" caused by earthquake.

91 Eg: MacGillivray (above n 74) para 1555; Sutton *"Insurance Law in Australia"* Law Book Company (Sydney, 1991) para 15.7; Butler & Merkin (above n 22) para B6.1-22; *City Centre Cold Store* (above n 52) per Clarke J; *Countrywide Finance* (above n 24); Only Colinvaux (above n 33) para.4-32 takes the contrary view; this is specifically rejected (*obiter*) by Clarke J in *Lumley Insurance v Vintix* (above n 81).

92 At p 67.

93 Above n 24; a floating restaurant sank through operation of 2 "co-mingled" causes being Toreda worm damage and rot. The former, as "action of micro-organisms", was excluded from the "all-risks" cover.

94 Commentators suggest that *Wayne Tank* be restricted to that situation. Muchlinski (above n 31) 90; Sutton (above n 91) 498; *City Centre Cold Store* (above n 51) per Clarke J. Where one cause is an insured peril and another concurrent cause is uninsured, the loss should be covered eg: *Miss JayJay* [1987] 1 LILR 32; *Hardware Dealers Mut Ins Co v Berglund* 393 SW 2d 309, 315 (Texas, 1962).

F *Indirect cause*

"Indirect" and "proximate" appear opposite. By excluding both direct and indirect causes, the parties might be thought to be applying the permission in section 55(1) Marine Insurance Act 1908 to operate outside proximate cause thresholds. Although courts in England and New Zealand have generally seen their role as giving broad effect to the presumed intention of the parties (rather than imposing required levels of proximity or remoteness), courts have nevertheless declined to exclude proximate cause absolutely. Exclusions will not be extended to any cause which is "merely an item of history".⁹⁵ Earthquake must have some relevance or influence as a cause-in-fact of earthquake fire even if that link is somewhat less than direct. According to Kelly & Ball:⁹⁶

Just how much less is not clear ... Perhaps all that can be said is that if there is any doubt the special wording may indicate that the parties intended the [excluded] event to be treated as a causal one rather than as merely part of the surrounding circumstances

For example, in *Coxe v Employers Liability Ins Co*⁹⁷ the insured was killed by a train while performing wartime duties during blackout. The policy excluded loss "indirectly caused" by war. The insurer succeeded. The condition of blackout was held to be an indirect cause even though the accident was clearly the dominant cause.

The insurer will therefore be in a strong position where the cover excludes damage "indirectly" caused by earthquake and fire follows reasonably soon after earthquake, whatever the actual cause of its ignition.

Proximate cause results are conventionally justified as based on contractual intention. Those underlying policy assumptions are now examined.

V PUBLIC POLICY

A *The Myth of "Common" Intention*

The law first presumes that.⁹⁸

Parties to [insurance] contracts generally adopt a judicially construed clause with the intention of adopting the meaning which the Courts have given to it.

95 Mustill J in *Spinneys (1948) Ltd v Royal Insurance Co* [1980] 1 LILR 406, 441.

96 Above n 24, para 7.92.

97 [1916] 2 KB 629; *the Coxwold* (above n 38).

98 *Berglund* (above n 93) 315 per Justice Norvell.

The insured's own *actual* understanding is less important. Further, even though proximate cause will not be explicit in the contract:

... if it is implied in the bargain then [the parties] intend it in law just as much as if they said it in words. In effect, it is the act of the parties.

even though:

I dare say few assured have any distinct view of [proximate cause] and might not see it if it were explained to them.⁹⁹

Muchlinski claims that, as the policy document is plainly "the insurer's contract", such findings of "common intention" tend to operate in favour of the insurer.¹⁰⁰

In *Leyland Shipping*,¹⁰¹ Scrutton LJ also cut away the wrappings:

... I doubt whether anyone unfamiliar with the rule of *causa proxima* and reading the words of a Lloyd's policy or bill of lading would discover it was "the intention of the parties" to apply it. It is in my view a judge-made rule of construction which came into existence because it was found that among the infinite variety of causes which contribute to produce any given result not even "good sense" could select with any certainty the real cause of the loss. The underwriters, familiar with the law of their business know of it; to most assured it comes as a surprise when they inquire as to the legal effect of their policy.

B The Myth of "Common" Sense

Further, "common sense" views of causation are inevitably founded on conjecture and generalisation. Different people will answer differently. Judges disagree.¹⁰² Even if most people do agree, we may still have been misled; common sense at one time, for example, told "sensible" people that the earth was flat.¹⁰³ Searching for any truly "common" sense about cause may be an impossible task.

Nonetheless, the cases implicitly maintain the fiction that such consensus exists and can be consistently located and applied. Lord Denning's judgment in *Wayne Tank* perhaps best demonstrates the inherent licence to use unexplained intuition to resolve "hard" cases. Used this way, the "common sense" test allows courts scope to

99 Lord Sumner in *Becker Gray & Co* (above n 32)113; implied also by s 55(1).

100 Above n 31, 87; also *Guardian Assurance Co Ltd* (1974) 48 ALJR 307, 308 per Mason J.

101 Above n 48 (CA) 892.

102 Eg in *Alexander v Cambridge Credit Card Ltd* (1987) 9 NSWLR 310, *Wayne Tank* (above n 33) and *Vintix* (above n 81) Judges applied "common" sense to reach opposite conclusions.

103 What does "common sense" tell us about James Bertland's theory that advertisements of runaway cats and dogs are an accurate predictor of earthquake?

"manoeuvre and out-flank the peril or the exception as desired".¹⁰⁴ Courts can reach the right result without having to deal with potentially embarrassing questions.¹⁰⁵ Such pragmatism is not new. In *Everett*,¹⁰⁶ fire caused an explosion which caused concussion damage. According to Willes J, "no person" in 1865 would say that the damage was caused by fire. "No person" who today applied a purely factual "efficiency" test would agree with him. That difference has resulted not from any change in our understanding of common sense but from the change in the purpose of the inquiry, being the need to apply a different underlying legal rule.

Critics note the lack of empirical evidence behind judicial assumptions.¹⁰⁷ Some judges are also uneasy. Justice McHugh, for example, has criticised:¹⁰⁸

the invitation to use subjective, unexpressed, and undefined extra-legal values which are simply dressed as common sense.

Sir Michael Mustill (as he then was) observed:¹⁰⁹

Perhaps this is a price which the common law must be prepared to pay for its flexibility and pragmatism.

In summary, "common" sense and "common" intention may more often be mere labels used to justify desirable results. Results may be influenced by the deeper perceptions held by courts about the public policy of insurance.

C Public Policy

Modern "causal minimalists" argue that causation metaphors have always been a screen behind which courts weigh policy. Once "but-for" causes are found, the role of the court is "forward-looking": to use insurance law to efficiently distribute costs and for deterrence where applicable. Proximate cause merges with and *is* policy. Courts have "undoubtedly"¹¹⁰ had public policy interests in mind when deciding many individual cases. For example, utility and protection of port authorities in wartime may have influenced the *Leyland Shipping* courts.¹¹¹ In *Wayne Tank*, Roskill LJ objected in

104 Clarke (above n 34) 524; "common sense" may be "a cloak for intuition when data is lacking".

105 Fraser & Howarth (1984) 4 J Legal Studies 131.

106 *Everett v London Assurance Co* (1865) 19 CB 126.

107 Eg: Max Radin (1930) Harvard LR 863; Howarth "Book Review" 96 Yale LJ (1987) 1389, 1391; Muchlinski (above n 31) 91; Stapleton "Law, Causation, and Common Sense" (1988) 8 OxJLS 111, 123ff.

108 Dissenting in *March* (above n 41).

109 "Fault and Marine Losses" (1986) LMCLQ 311, 358.

110 Muchlinski citing examples (above n 31) 87. Policy may be formalised in rules: in New York, for example, a tortfeasor who sets a conflagration in motion is liable only for the first house burned.

111 Refer the comments of Lord Findlay (above n 29) 355; Scrutton LJ (above n 49) 890 absolving the port authorities from fault.

principle that loss caused by the plaintiff's fundamental breach of contract was in effect being claimed from its public liability insurer.¹¹² This role of policy can easily be "hidden", with inconsistencies between cases readily put down to "inferences of fact".¹¹³

The breadth of discretion within proximate cause might allow a "distributive" court, perhaps under public pressure as in San Francisco in 1906, the opportunity to cast itself as an instrument of social policy after major catastrophe. English-based insurance law however appears centred on the conventional wisdom that commerce requires certainty. Ivamy relates this to proximate cause:¹¹⁴

the law does not regard the relative importance of causes in the production of loss, since such an inquiry, if pursued, would open up a wide field of speculation and lead to considerable uncertainty.

Although courts have occasionally appeared to "bend" the rules,¹¹⁵ courts generally decline to rearrange contracts to "do the liberal and reasonable thing by a reasonable assured".¹¹⁶ Indeed, "English judges have always been mindful of the underwriter's problems".¹¹⁷ Other commentators suggest that English courts have had the interests of insurers too much in mind.¹¹⁸

In contrast, United States courts have tended to assume that many insurance contracts are on terms essentially imposed by the insurer.¹¹⁹ Courts have monitored standard-form contracts on the overt basis of public policy.¹²⁰ Where there is any ambiguity, courts have often enforced the insured's "reasonable expectations" to right the perceived imbalance. Catastrophe insurers see this "game of one-upmanship" with courts over policy wordings¹²¹ as inimical to their self-preservation:¹²²

... coverage has been found for losses that are not currently intended to be covered and in such a way that, in the event of a major catastrophe, insurer insolvency could be seriously threatened.

112 Above n 33, 75 "the Court should not strain to produce [that] result".

113 Chalmers *Marine Insurance Act 1906* (9ed, London, 1986) 78.

114 *Marine Insurance* (3ed, Butterworths, London, 1989) 255.

115 Various personal accident cases may reflect "the generosity of English judges" to that class of insured eg cases cited in Butler & Merkin (above n 22) B6.19ff.

116 Lord Sumner in *Becker Gray & Co* (above n 32) 113.

117 Eg Clarke (above n 34) 289; (above n 36) 287 where the insurer is seen as a "Good Thing": Hassen 42 MLR 544.

118 Muchlinski (above n 31) 95; "... Indeed the policy of the law may be to favour insurers in cases of doubt".

119 For example, in *PanAm v Aetna* [1975] LILR 76, 86 (USSCt), a standard aircraft policy taken out by PanAm, almost certainly through professional brokers, was deemed to be a contract of adhesion.

120 Eg *Safeco Ins Co v Hirschmann* 760 2P 2d 969,972 (Washington State, 1988).

121 Sheehan (above n 54) 769.

122 US Insurance Services Offices Memorandum (1983) quoted in *Garvey* (above n 26) 710 fn 6.

What indigenous policy considerations might influence New Zealand courts?

D The Public Policy of Earthquake Exclusions

Although New Zealand judges appear to be increasingly considering the wider economic costs of their decisions, earthquake exclusions in New Zealand are likely to be applied according to their terms and common law precedent. That approach appears supported by public policy.

First, providing de facto earthquake fire cover by ignoring earthquake exclusions would be inequitable both to insurers and to those insureds who are paying extra premiums for earthquake fire inclusions.¹²³

Secondly, imposing large-scale unanticipated liability onto insurers could jeopardise the continuing supply of insurance and reinsurance cover at affordable rates after major earthquake. Clarke notes that:¹²⁴

too loose a connection between peril and recoverable loss ... would make underwriting difficult, except on terms which would drive away business.

Thirdly, unless supported by accurate actuarial and expert evidence, retrospective intervention by courts may impede other checks and balances and supplies after major earthquake.

One core assumption might however be re-examined; why should exclusions prevail absolutely in cases of concurrent causes?

E Priority of Exclusions

Arnould¹²⁵ outlines 2 possible legal choices where one cause is excluded:

- 1 Where the insured peril can be treated as the cause of the loss, the operation of any other concurrent cause is legally irrelevant;¹²⁶ or
- 2 Where the excluded event cannot be entirely dismissed as being responsible for the loss, the exclusion bars the claim.

123 Eg, Government relief for the uninsured after the 1964 Alaskan earthquake is said to have created inequity against those who were insured; NZ Government Discussion Paper (1988) (above n 16) 16.

124 Above n 34, 256; In *Garvey* (above n 26) the Court expressly considered that costs for all insureds would inevitably increase if it over-expanded the basis of insurer's liability for any individual case or class.

125 Above n 40, para 776; adopted by Parks (above n 35) 413.

126 Applied in many US States where recovery is deemed to have been intended where an insured peril and an excluded cause both contribute to the loss *unless* the insurer had specifically limited its liability to loss *solely* caused by the insured peril.

While English courts have traditionally by-passed the issue by isolating one event as "efficient", where necessary they have treated the exclusion as paramount. In *Wayne Tank*,¹²⁷ Lord Denning suggested two legal justifications for this approach, both based on "common" intention. First, "... the only way to give effect to [the exclusion] is by exempting [the insurer] altogether". Secondly, as a matter of construction, words of express exclusion should prevail over any general indemnity. Lord Denning placed greater emphasis on this principle.

Perhaps recognising that this part of the *Wayne Tank* judgment is *obiter*, Arnould¹²⁸ notes that it is "not possible to find an authoritative solution in the reported cases". Nonetheless Arnould then cites *Wayne Tank* to suggest that the paramountcy of exclusions is "virtually settled". Muchlinski contends that any conclusive presumption in favour of the insurer begs true questions of causation, that it shortcuts the full inquiry necessary for justice, that it places an extra and onerous evidential burden on the insured in that the insurer often needs only to prove that the excluded peril *may* have contributed to the loss, and that the contract itself, rather than general law, should determine the result. This analysis fits. Fixed rules about intention appear inconsistent with any "common sense" case by case approach otherwise taken to proximate cause. Exclusions are mutual terms. It follows that:¹²⁹

... the interests of both parties must be taken into account when such a clause is in issue, and the courts should not give to the insurer the benefit of any doubt. They are bound to determine whether the insured and excluded causes of loss are equally effective or not. That is quite clearly demanded by... *Wayne Tank*.

One area of potential injustice arising from *Wayne Tank* is readily demonstrated using the concurrent cause example above. Suppose that the owner of the Gamma Building took out parallel covers, first for earthquake but excepting defective installations, and secondly for the defective installation excepting earthquake. The insured might expect first, to be covered against both perils and secondly, that the insurers would apportion the loss between themselves if both perils occurred concurrently. Applying *Wayne Tank*, however, the insured would recover under neither cover even if both covers were placed with the same insurer. Each insurer therefore obtains an apparent "enrichment" by being relieved of its agreement to be liable for the relevant event.

Would a new principle allowing apportionment between concurrent causes more fairly express common intention than an "all or nothing" approach tending to favour insurers? How far should such a principle extend?

127 Above n 33: applied also in Canada where "it is sufficient for the [insurer] to merely demonstrate that one cause is within the exclusion clause...".

128 Arnould (above n 40) 634 citing *Wayne Tank*.

129 Muchlinski (above n 31) 89; Muchlinski also observes that the majority in *Wayne Tank* do not cite the ratio of any decided case in support of the decision (p 91).

VI APPORTIONMENT AS A POSSIBLE REMEDY

Various Commonwealth Law Commissions¹³⁰ and commentators¹³¹ have recommended apportionment as a proper remedy to avoid unjust enrichment in appropriate cases in general contract law. This might be extended, with proper caution, to insurance law. New Zealand courts appear not bound by any direct local precedent requiring "all or nothing" results in non-marine insurance law.¹³² Indeed, there are precedents for apportionment both within and surrounding insurance contracts¹³³ and from overseas.¹³⁴

If apportionment were an option in defined concurrent cause situations, each insurer would be liable for the damage attributable to each "efficient" unexcluded peril it had agreed to cover. However, apportionment should not fundamentally alter those risk allocations which were otherwise clearly agreed between insurer and insured.¹³⁵ The scope for apportionment should therefore be relatively narrow. In principle:

- 1 Where genuinely concurrent proximate causes acted inter-dependently to cause loss (that is, each was necessary but neither was sufficient) and at least one is an insured peril, then prima facie:
 - (a) If none of the other causes are excluded the insured should recover.
 - (b) If any other cause is excluded, the court should have discretion to apportion the damage between insured and excluded causes.
 - (c) The court will need to weigh proper allocation if any further part of the loss was caused by an uninsured peril.

- 2 The burden of proof need not fall entirely on the insured. Once the insurer has proved its exclusion, each party might prove the "potency" of its cause with the court left to set and apply a reasonable basis for apportionment. As demonstrated in double insurance cases, quantification need not be an insuperable problem.

130 Eg the UK Law Commission (1993) Report No 219 "*Contributory Negligence in Contract*"; NZ Law Commission Preliminary Paper No 19 "*Apportionment of Civil Liability*" (1992).

131 Eg Treitel "*Remedies for Breach of Contract*" (Oxford, 1988) 172; Ahmed "*Proximate Cause & the Exception Clause*" (1974) 124 NLJ 592; Birds (above n 76) 221.

132 The highest local precedent is from the High Court in *Countrywide Finance Ltd* (above n 24), a marine insurance case which applied *obiter* from *Wayne Tank* (above n 33).

133 Eg apportionment of the "causative potency" of marine collisions in Admiralty (Marine Conventions Act 1911); the rules of average and contribution; double-insurance clauses; and allocation of "charter party" liabilities (as in *Gosse Millard* [1929] AC 223, 241).

134 Apportionment has been available to first-party insureds in Texas since 1920: eg *Travellers Indemnity Co v McKillop* 469 SW 2d 160 (Tex 1971); Apportionment has also been raised in California (proposed Statute No 532.1).

135 As the UK Law Commission note (above n 130; paras 3.55, 5.22), "apportionment would be inappropriate" in most insurance cases since the contract of indemnity is ordinarily one which places strict liability on the insurer.

VII CONCLUSION

In summary, earthquakes increase both the probability and likely extent of loss to commercial property by fire. For insurers therefore:¹³⁶

... by far the most important aspects of earthquake insurance are a clear definition of the nature and extent of the insurance cover and the calculation of a premium rate that is commensurate with the risk.

When disputes arise, insurers require certainty and consistency from courts in interpreting exclusions to ensure that they are not retrospectively exposed to risks that they had not anticipated. Enforcing earthquake exclusions according to their clear terms will be fair and proper where earthquake is the "dominant" event in a sequence culminating in loss. Multiple cause cases however become "like trying to pick up a jellyfish by the corners".¹³⁷ The present presumptions giving priority to exclusions over insured perils may provide certainty for insurers but may also at times unjustly enrich them. Multiple liability remedies which retain actuarial certainty might be more appropriate for some multiple cause problems. Finally, until "useful general tests of legal cause"¹³⁸ can be formulated, broad common sense applications of proximate cause are preferred to any more rigid rules. Courts should however attempt to articulate both the processes behind their decisions and any public policy considerations.

136 Munich Re *"Insurance & Reinsurance of the Earthquake Risk"* (1991) 5; also Clarke (above n 34) para 25-2.

137 Knoll & Arthur (1990) 26 Tort & Ins LJ 97.

138 Morris (1939) 39 Col LR 1087.