Plural Rationality views of Financial and Insurance Regulation

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ABSTRACT

This paper examines the regulation and actions of insurance regulators in the context of the Anthropological ideas of plural rationality (a.k.a Cultural Theory of Risk) to explore what this aspect of social science can teach us about the views and experiences of the regulatory community.

The discussion is informed by investigation of regulatory actions and statements during the events of the last decade and the Global financial crisis. In addition, we have undertaken informal interviews with a few regulators and former regulators from some of the largest insurance market jurisdictions globally. We sought their perspective not just of the current state of affairs but of how these perspectives had changed over recent history.

The question for this discussion is whether the ideas of Plural Rationality can provide any useful insights into the regulatory process for financial firms and especially for insurance regulation. In the following discussion, we set forth the hypothesis that it does apply to regulators just as it has been shown to apply to other groups. Then we hypothesize what we would find if it did and then look for evidence that either supports or disproves the hypothesis.

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> "*It was a maddening story line: the government helped the banks get rich by looking the other way during good times and saved them from collapse during bad times."*
> David Leonhardt, March 25 2010, New York Times

It wasn't that long ago that Alan Greenspan was lauded as "Maestro", part of the title of a biography by Bob Woodward. The time period when he presided as Chairman of the US Federal Reserve Board (1989 – 2003) came to be know at the Great Moderation. A time when it was good to do business in America and in many other parts of the world. But not everywhere, and not all of that time. (Do not try to talk about moderation to Asians whose economies were devastated by their 1998 financial crisis.)

However, the experiences of the US and European economies during that time period coincided with a shift in thinking about financial regulation. Particularly in the US financial markets centered in New York and in the UK's London markets. The theory that markets could take care of themselves and that government regulatory interference in markets made them less efficient to everyone's detriment became increasingly prevalent among financial regulators in Washington and London.

What actually happened was the Global Financial Crisis of 2008. The self-imposed threat to the banks posed a major threat to their entire economies and to greater and lessor degrees the governments bailed out the banks. Some of the most laissez faire regulators were sent packing (or as was the case with Greenspan, had already left), new and stricter regulators were put in their place and many of the remainder had an epiphany that regulation was necessary, even if they were still reluctant to view it as good. Standards for minimum capital were strengthened for all and a new class of systemically important financial institutions are in the process of being identified for additional regulatory attention.

Some commentators with longer memories are looking back to the 75 years since the Great Depression and wondering if we could go back to the regulatory regime that provided that long period of stability. But few think that is realistic since the financial system has changed so much since that time and cannot be easily remade into the old system that went along with that regulatory regime.

Two Harvard economists, Reinheart and Rogoff, published a book that describes a study of 500 years of financial history that shows that the cycles of excess and implosion are entirely commonplace. As is a way of thinking that provided them with their title, "This Time is Different". In their history the thinking that for some reason the rules of the past no longer apply is a fairly common part of these economic cycles as well.

The "This Time is Different" rationality that provided the intellectual backbone to this most recent period of excess and bust has been the economic theories of **efficient markets** and **rational expectations** of market participants. To enable economists to build mathematical models from these theories, the convenient assumption is usually made that there is only one type of economic actor - home-economicus, their knowledge of the economic environment is near perfect and they always act in a way to maximize the expected value of their utility function – which is a monotonically decreasing function of their wealth.

Experience has shown again and again that this economic paradigm has periodic lapses of prospective validity. (Advocates of these theories work overtime after each lapse to make sure that the theory is retrospectively valid.) And those periods of lapse are exactly the primary concern of regulation, the times of extreme distress of the financial system.

Real people who control vast amounts of financial resources, i.e. the ones who should be acting like homo economicus, are not. There is a suspicion that the underlying assumptions of much of economics theory, the rational behavior of economic man may not be entirely valid.

One popular and highly pejorative approach to explaining these lapses is to label some or all of the prevalent behavior that falls outside of the economic theories as "irrational". This is highly popular with economists as it affirms their superiority (as the carriers of the torch for rational behavior) and takes anyone who does not conform to their theories down several notches as the irrationals. A neat trick that is better suited to demagogues than to supposed scientists.

Plural Rationalities Theory

Over the same time period that these new economic theories were being developed, other analysts of human behavior have looked at their findings and proposed different theories. One theory, Plural Rationality, from social anthropology, provides a story line that can provide a rationale for divergent types of events such as the Great Moderation as well as the Great Depression, the Asian financial crisis and the rise of China with an economic system that is not based upon free markets.

Social anthropologists look to understand and explain the underlying logic of social behaviours. And some of them – they have been dubbed "the new Durkheimians"[4] – argue:

1. That the ways in which people organise their social relations match the ways in which they perceive the world.
2. That there is just a small number (four) of viable ways in which relationships can be organised
3. 3. That the states of the world can be categorized into a small number of choices that match up with the ways in which they are perceived[5].

These propositions – propositions which stand in marked contrast to both rational choice theory (which holds that we are all rational in the same utility-maximizing way) and post-structuralism (which holds that we are all

[4] Sometimes called "cultural theory" and sometimes "neo-Durkheimian institutional theory". The latter, unfortunately, is too much of a mouthful, while the former risks conveying the impression that it is culture that is doing the explaining.
[5] THOMPSON, M., ELLIS, R.E. and WILDAVSKY, A. (1990) *Cultural Theory*. Boulder, CO: West View Press

incomparably different) forms the basis for the theory of plural rationality. And these insights, as we will show, can be applied to the world of the insurance regulation.

If people can see the world in four different ways then it is plausible to suggest that the world, at times and in places, can actually be each of those ways. Otherwise those views that were never supported by evidence would have quickly died out. This does indeed seem to be the case, because three of these "states of the world" have their parallels in the economic literature, whilst the fourth – the state of uncertainty invoked by Ben Bernanke – is the one that is still missing from that literature. Anthropology has adapted these four environments from ecological studies, particularly the biologist Holling, hence the references to nature.

Nature Benign where the Invisible Hand does exactly what Adam Smith said that it would: steadily increasing the wealth of the whole by ensuring that individuals do well only when others also benefit. In economics, this state would be called a Boom Time.

Nature Ephemeral is almost the exact opposite of the Nature Benign state. Here the world is a truly perilous place. With disaster lurking in almost any action, that famous Hand is not so much Invisible as Absent. Economists call this state a Recession or Depression.

Nature Perverse/Tolerant is congenial to those who urge "everything in moderation", in that it lies somewhere between the extremes of the first two. Neither fully safe nor completely dangerous, it enables those who can determine where the safe limits are to prosper and to add to the wealth of the whole. But, unlike in Nature Benign, things can no longer be left entirely to the market; there have to be controls to prevent reckless actors venturing into the danger zone and impoverishing us all. The most recent example of this state is The Great Moderation.[6] Economists, we suggest, would call this state Moderate.

Nature Capricious is the state that features Uncertainty. This is a world where nature operates with neither rhyme nor reason. Nothing is predictable, results cannot be reliably replicated, and learning, it soon becomes apparent, is impossible. While this environment has clearly predominated in many parts of the economy for most of the period following the worst of the recession, economists have no name for it and hence no clear strategy to recommend.

Forms of social solidarity are defined as *the various ways in which we bind ourselves to one another and, in so doing, define our relationship with the environment* and they, along with their distinctive perceptions as to how the world is and people are. Plural Rationality identifies four forms – called *individualism*, *egalitarianism*, *hierarchy* and *fatalism* .

- Upholders of individualism are the optimists – we can dub them *maximizers* – who see the world moving towards equilibrium and, in the process, delivering ever-increasing prosperity (Boom).

[6] Stock, J. Watson, M. Has the Business Cycle Changed and Why? NBER Macroeconomics Annual 2002, Volume 17 MIT Press

- Upholders of egalitarianism are *conservators*, striving to preserve what capital they have: the obvious strategy, given that they see the world as headed for total collapse if its delicate balance is not maintained at all times (Bust).

- Upholders of hierarchy are *managers*; they see the potential for prosperity, but only if the risks are clearly identified and carefully controlled (Moderate).

- Upholders of fatalism are *pragmatists*; facing a future that they see as inherently unpredictable, they back away from all forms of strategic behaviour and concentrate on finding short-term ways of coping: keeping their heads down, ensuring all their eggs are not in the same basket and so on (Uncertain).

The Link between View of Risk and Group Strategy

Anthropologists observed that people organize themselves in a manner that gives them the amount of security that they believe that they need. And that there was an extremely high correlation between the four social solidarities, or ways of organizing a group, and the prevailing beliefs about risk of the group.

If you believe that the environment is very dangerous, you want a high degree of security. You achieve that high degree of security in a very tight knit group of like-minded people. You want that group to be all people who will not waver in their attention or dedication to the collective security, all figuratively standing back to back to back forever. Hence, you get the egalitarian groups. No separate people needed giving orders because everyone knows what needs to be done. And in an egalitarian group everyone would agree that they cannot spare one person from the ramparts to stand behind and give orders.

If you believe that the world is somewhat less risky it gets more complicated. All resources are not needed for security. That then allows for specialization, since it is not so risky that everyone needs to concentrate on security. And specialization leads to hierarchy. A hierarchical group is the most efficient form of specialized groups. Experts are the most highly developed specialists. So that most evolved Hierarchical system will see experts as its most valuable group members.

With nature benign belief, you do not need to spend hardly any effort on security, therefore you do not need any coherent group structure. People can operate individually. They can be strong enough individually to protect themselves. So organization is weak.

And with the belief in the uncertain environment, there is not the idea that an organization can provide protection, or whether you actually need protection. Observations in insurance companies suggest that the Pragmatists might not have anything to do with creating groups (companies) but that they can have leadership positions in companies and they can fulfill important functions in companies. For example, the only sort of person who could long exist in a Help Desk type function would be a Pragmatist. They do not expect an orderly world, so the crazy barrage of requests that they must live with fits what they expect. There are insurance company CEOs who are Pragmatists. They are not tightly linked to anyone else in the company, they are loners. Their strategy for the firm is not particularly clear. They are opportunists who might react in any way to a new situation. At any point in time, they might be acting like one of the other three beliefs with respect to one issue.

APPLICATIONS OF PLURAL RATIONALITY

These ideas can be applied to the financial world[7]. An agent based model, The Surprise Game, is used to show that Plural Rationality theory can be used to generate an artificial world that has goes through highly variable financial conditions that can be seen to approximate the patternless volatility that real economic systems display.

Insurers and other risk takers can use Plural Rationality theory to explain the range of risk management practices found within the insurance industry and the motivations for those practices. The point is made that there is in fact, an optimal risk attitude and an optimal set of ERM practices[8].

[7] Ingram, D. Tayler, P. Thompson, M. Surprise, Surprise ASTIN Bulletin, 2012
[8] Ingram, D. Underwood, A. The ERM Rainbow, BULLETIN FRANÇAIS D'ACTUARIAT, Vol. 12, n° 24, juin – décembre 2012

Insurer strategies that align with the four solidarities are described as[9]:

- Diversification - the insurer seeks to undertake a broad range of activities whose risks are unrelated, and to maintain an appropriate balance among these activities by avoiding excessive concentrations.
- Loss Controlling – the insurer seeks to limit exposure to risks that could drive large losses, often accompanied by a reluctance to accept any new areas of risk taking.
- Risk Trading – the insurer seeks to take as much risk as possible if the risk is perceived to be appropriately priced.
- Risk Steering – the insurer looks to manage their portfolio of risks and to look for the combination of risks that provides the best aggregate risk adjusted returns.

In practice, we have found that many financial firms deploy strategies that are hybrids of two of these strategies. In addition, we have found that most financial firms will deploy different strategies for different risks. Below, we will present an example of multiple strategies followed by a regulator.

REGULATORS AND PLURAL RATIONALITY

The question for this discussion is whether the ideas of Plural Rationality can provide any useful insights into the regulatory process for financial firms and especially for insurance regulation. In the following discussion, we set forth the

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[9] Ingram, D. Underwood, A. The Fabric of ERM The Actuary, December 2010/January 2011

hypothesis that it does and to demonstrate that by first hypothesizing what we would find if it did and then looking for evidence that either supports or disproves the hypothesis.

At first thought, regulators are functionally purely within the Hierarchy solidarity and therefore should be expected to uphold the Manager belief. We believe this because the role of a regulator is to act to constrain excesses of the market. In order to rationalise their existence – and provide purpose to their working day - we argue that they must believe that the financial institutions they regulate would be in peril without their intervention to contain risk-taking.
This is our starting position – to assume that regulators are naturally risk managers. However as part of this work we were keen to explore whether there were traits or pressures to move away from this natural regulatory stance.

In adopting the hierarchical solidarity regulators will tend to have similar views to the Managers within insurers – i.e. the Risk Managers (CRO / Actuary) within an insurer. We can rationalise this as the Risk Managers within an organisation also rationalise their role as to prevent the firm from the peril of excessive risk.
So we expect that the Risk Steering strategy is seen the best approach by Risk Managers and Regulators. This might seem a surprise to some of those who have been involved in CRO – Regulator discussions on internal model approval but we

argue that both come from the same perspective – even if they disagree about what entails a perilous amount of risk.

Returning to the regulators there is quite a large amount of evidence to support the view that they are Risk Managers. Solvency II, for example, along with its cousin Basel II/III, are very clear expressions of a regulatory version of a Manager point of view. The Manager, as with the adherents to the Hierarchy solidarity in anthropology literature[10], are fervent believers in the power of the expert. The Solvency II call for an Internal Model that requires a team of experts to build and maintain is surely proof of a Hierarchical bias.

But that has not been the only voice of regulators heard in the past dozen years or more. Indeed, the financial crisis itself is being attributed by some to be the result in a regime of regulation that was led by experts, but by experts who did not necessarily believe in the traditional regulatory paradigm. In the US, Alan Greenspan led the Federal Reserve and "looked to the self-interest of lending institutions to protect shareholders' equity" rather than regulations. Throughout Greenspan's long tenure at the Fed, the importance of external regulatory constraints declined

The governors of the Bank of England overlapping Alan Greenspan were Eddie George and the outgoing Bank of England governor – Mervyn King but unlike the Federal Reserve in the US the Bank of England was not in charge of the Prudential regulation of banks after 2000. That role passed to the Financial Service Authority

[10] Thompson, et al. (1990)

who – until April 2013[11] - undertook Prudential regulation for all sectors financial services.

The Financial Services Authority operated as a light-touch regulator – focusing on principles rather than rules. However even this light touch approach was considered too heavy by the Prime Minister as revealed by a leaked letter in 2004. The end of the light-touch approach was announced by Hector Sants in 2010 when he told the press that the FSA would adopt a more outcomes oriented approach henceforth and intervene if it foresaw problems happening rather than waiting until they did. The existential threat by the UK Conservative Party to abolish the FSA if they won the upcoming election may well have prompted this announcement.[12] His point of view can be seen to be aligned with the Individualist or Maximizer view within the Plural Rationality framework.

Furthermore, some of the reactions to the financial crisis also fall into the category of closing the barn door behind the lost horse, with sudden clamp down on risk taking and rising capital and other standards that have the feel of the Conservator desire to curb losses at any cost.

[This was some evidence in the Solvency II calibrations before and after GFC. Certainly we saw that the credit stresses because much more onerous in the QIS-5

[11] In April 2013 Prudential regulation of all financial services sectors was transferred to the PRA which is a subsidiary of the Bank of England. Conduct of Business regulation was left with a separate agency –the FCA.
[12] In the event the Conservative Party formed a coalition government with the UKs 3rd party, managed to get their proposals for abolishing the FSA enacted and the FSA was abolished on 31 March 2013.

calibration and were partially responsible for lifting credit risk capital from the 7th most capital intensive risk in QIS-4 to the most capital intensive under QIS-5.

The fixed QIS-4 equity capital stress of 32% was changed to a range of 29% - 49% under QIS-5 with a mean stress of 39%. Therefore on average the equity capital stress was increased by over a fifth – but there was an attempt to soften the stress in times of stress to reduce pro-cyclicality.

The risk-free debates under Solvency II raged in the run up to QIS-5 – and continue to do so. Regulators in the wake of the GFC were proposing discounting at government bond rates though this softened under pressure from industry and ultimately the European Commission to swaps less a credit adjustment of a few basis points. The introduction of a matching adjustment and counter-cyclical adjustment continue to be tested though the views on the relative merits of this softening have tended to be drawn more along national lines than between regulators and industry.]

We believe that future study will also show that a highly Individualist/Maximizer attitude can be found in off shore financial centers, where the lightest touch regulation is often a major attraction.

REGULATORS RISK VIEWS AND STRATEGIES

The experience of recent years reflected above leads us to believe that there is some possibility that in the context of the Plural Rationality theory –rationalities other than Risk Manager could apply to regulators..

To get started we imagine what a regulator with each of the different rationalities (risk beliefs) would be like.

Chart 1 below presents a hypothetical exposition of the characteristics of regulators who might hold each of the four different risk beliefs. We have come up with this list by exploring the attributes of each rationality from the Anthropological literature and sought to draw inference as to what this would look like for a regulator.

CHART 1

PRAGMATIST	HIERARCHIAL
• Not driven by a view of whether the future will be like the past or not. • **See major power asymmetry and they are less powerful than those that they regulate and so believe that whatever rules they put in place will be arbitraged and if they let firms self-regulate they exploit that freedom.** • Act only when they must • Tit for tat strategy – totally reactive – will tend to change approach situationally based upon last failure	• **Driven by a view that with the right regulations, everything can be kept under control but without regulation firms would take excessive risk that would lead to negative (irreversible) changes.** • Complex world requires complex regulation • Regulation can shape the way that regulated industry does things in a manner intended by the regulator • Believe that principles should shape regulation, not rules or what happened last year.
EGALITARIAN	INDIVIDUALISTS
• Driven by a view that the future will be worse than the past or as bad as the worst of the past • Tend to be simple rules based - • **Believe in regulation by prohibiting activities / products until all the consequences of the activity / product have been understood and the activity / product is deemed safe. They believe the insurance market is fragile and things can easily go wrong unless their approach is followed.**	• Driven by a view that the future will be easily mastered by the most competent and that we are best off allowing them to control more of society's resources. • Believe that the market is the best regulator and that best regulation stays out of the way of the market. • Believe that government actions in the markets destroy value • **Believe that companies will act prudently in their own self-interest so they should be allowed to set their own capital.**

• Believe that regulators need to stick together and industry is out to get away with prohibited activities • Would favor restricting size of regulated entities, since busts will happen, smaller firms blowing up is much easier to deal with than larger firms.	

This idea has already been entertained by Lodge and Wegrich.[13] They created a similar chart, shown below in Chart 2. Their discussion centered on differences of risk view from country to country.

Chart 2

[13] Lodge, M. Wegrich, K. Arguing about Financial Regulation: Comparing National Discourses on the Global Financial Crisis PS: Political Science & Politics Volume 44: 04 October 2011

CT Coding Frame Regarding the Financial Crisis

FATALISM	HIERARCHY
Crisis always happens in capitalism	Capture and corruption are the problem
Groupthink among professions is inevitable	Need for prudential regulator
Nobody has any idea what is going on	Need for merged regulatory regime
Rules are not going to have any effect	Need for mandatory intervention, clear rules & roles
Proposals will have perverse effect	Split banks
Regulation will always be undermined	Need for international solution
Bring in whistleblowers	Impose capital requirements, living wills
Regulators will always be behind markets	Expand scope of regulation
Regulation grows without a plan and has no positive effects	Strengthen existing institutions
	Give central bank dominant role
INDIVIDUALISM	**EGALITARIANISM**
Regulators/government was the cause of crisis	Reliance on markets caused melt-down
Perverse rules caused crisis—abolish them	Private organisations didn't know what they were doing
Too many regulators	Banks refuse to clean up their act
Regulation is bad for investment/recovery	Change ownership structure of banks
Markets are superior to rules	Limit bonuses and compensation overall
Banks/private organisations know best	Encourage information sharing
Regulators are acting outside their jurisdiction	People, not rules matter
Self-regulation is superior	Need to act, otherwise impending peril
Consumer protection is bad	Mediation and 'all in one room' is best way to regulate

We can see from the two tables above that this framework does describe some of the observed actions and attitudes of regulators.

With the insurance ERM discussion, the four risk attitudes were found to be tied to four distinct risk strategies in a recent article[14]. For this discussion, we present three broad strategic regulatory approaches:

- Rules Based;
- Principles Based; and

[14] Ingram, Underwood (2011)

- Market Based

Wetentatively assign those strategies to:

- Conservator risk attitude
- Manager risk attitude
- Maximizer risk attitude

…respectively as shown in the following table:

Risk Attitude	Rules Based	Principles Based	Market Based
Risk Strategy	Conservator	Manager	Maximiser

Below we expand each of those three approaches.

- Rules Based Approach - seeks to be fair to all by applying the exact same rules to each regulated firm. These rules are set with plenty of margin so that that there is little chance of a severe problem. The rating agency capital formulas fit well with this approach. The US Risk Based Capital regime fits the same formula for all firms, but not necessarily the plenty of margin aspect. Requires little sophistication to apply or interpret. Though the signals might not be entirely accurate. Similar rule sets are in place across the globe notably the Japanese regulatory system post 1998 and the Solvency I regimes that have been in place across Europe – and remain in place pending agreement over Solvency II.
- Principles Based Approach – seeks to be correct by allowing for as much complexity as is necessary to fit each firm perfectly. Requires a high degree of sophistication to apply. Interpretation could be simple, except for the fact

that the application of the principles can be complicated by the difficulty of being sure whether a company has applied the principles correctly. So the user of this approach must take on a highly sophisticated validation process.

- Market Based Approach – seeks to allow market forces and self interest to take care of basic supervisory steps. Regulators would set low standards for such things as regulatory capital and companies would be forced by the market to hold more capital to be able to operate. Counterparties, customers and investors would discipline companies that did not hold enough capital.

Chart 3 provides some predictions of how the different perspectives might react to some of the fundamental regulatory goals in financial services[15].

[15] The Fundamental Principles of Financial Regulation, Geneva Reports on the World Economy, June 2009 International Center for Monetary and Banking Studies

Chart 3 Different emphasis on Objectives of Financial Regulation

	Systemic Market Failures	**Customer Protection**	**Investor Protection**	**Market Protection (Insurance)**
Rules Based – Egalitarian/ Conservator	Manage the individual companies and market will be fine.	High focus.	Low importance.	Rate regulation common.
Principles Based – Hierarchical/ Manager	Find the metrics to measure and they can manage.	Moderate importance.	Moderate Importance.	Moderate importance.
Market Based – Individualist/ Maximizer	No action to prevent. Cannot tell in advance.	Low importance.	High focus.	Will take care of itself.
Situational – Pragmatist	Varies.	Varies.	Varies.	Varies.

DYNAMIC RISK ATTITUDES

The four risk attitudes persist even though at any one time, only one of the four can possibly be correct. However, like the weather, we all observe that the risk environment does not stay constant. Plural Rationality theory predicts a dynamic process of changes to risk attitude along with changes to the risk environment.

The adherents to the other three beliefs are surprised by the way that their experiences do not conform to their expectations. This process can be represented by a chart that displays the reactions of each type of group to each potential environment, called a surprised matrix[16].

The Surprise matrix for regulators may look like Chart 4. Each box represents a possible situation of the risk environment and the regulatory risk attitude. Only one box is active at any one time. Plural Rationality theory would say that these sixteen boxes would represent all of the possible combinations of environment and attitude.

Down the diagonal from top left to bottom right, the green square indicates an alignment between the attitude of the regulator and the environment. They are experiencing what they expect. In all of the other twelve boxes, there is a misalignment of regulator risk attitude and the environment. The yellow boxes indicate situations where someone, usually the regulated firms will be unhappy with the situation. The red shaded boxes indicate situations where the effect of the mismatch between regulatory attitude and environment that are likely to have severe impact on the regulator's tenure.

[16] Ingram, Tayler, Thompson (2012)

Chart 4 Regulatory Surprise Matrix

	Bust Environment	**Moderate Environment**	**Boom Environment**	**Uncertain Environment**
Rules Based – Egalitarian	Expected – Some Company Failures as expected. But Rules prevented many failures if the rules were strict enough.	Companies are fighting the rules as they are too restrictive and are standing in the way of success.	Companies are fighting the rules as they are too restrictive and seem totally unnecessary. Politicians pressure relaxation of rules.	Companies following the rules are struggling.
Principles Based – Hierarchical	Companies that follow the principles are not protected. Things are much worse than anticipated. Politicians pressure for some simple rules.	Companies who are following the principles are flourishing. Those who ignore the principles are struggling as expected.	Companies who ignore the principles are flourishing. Support from Manager firms is dwindling as they struggle to compete with Maximizers. Politicians pressure relaxation of principles.	Companies following the principles are not doing any better than those who are ignoring the principles.
Market Based – Individualist	Many firms fail. Need rescuing. Regulatory approach seen as failure by politicians.	Some firms struggle as they continually create their own mini crisis.	Companies are growing their business and their profits. Staying out of their way worked well.	Companies following the market are not doing any better than those who are ignoring the principles.
Situational – Realist	Too Many company failures. Politicians call for different regulatory regime.	Firms stop paying attention to rules and develop their own principles based approach.	Having a hard time defending any past decisions. Firms are balking at the patchwork quilt of regulations. Politicians call for new vision.	Variety of approach and easy adaptation seem to provide the right balance of protection, freedom and

This process in both the regulatory approach and the economy was described:

> As an upturn proceeds, speculation – based on weakened regulation and the growth of extended credit – intensifies. This is supported by a shift of accountancy practice from 'rule observer' to 'rule manipulator'. Since in upturns attention focuses on the future, the past can offer only limited lessons (and warnings). Creative accountancy is thereby able to calculate collateral valuations within widened parameters as we shall see when discussing Enron and the widespread application of the Black-Scholes formula.
>
> Since a key individualist value is optimism, the conventional wisdom is that prosperity and rising prices will continue indefinitely – with successful entrepreneurs supportively lauded as folk heroes. Some may well believe the upturn will continue forever but those who don't will have to act as if it will: innovators cannot stop innovating. And regulators are also concerned that the upturn should not stop. They too have a vested interest in acting like innovators. But upturns always end in the same way – with a crash.
>
> With a crash, the values of individualism become discredited. Calls are increasingly heard that 'this must never happen again'. It is then that the values of hierarchy emerge. There is a tightening of regulations to curb speculative excess; lessons are sought from the past and there is widespread denigration of those heroes of the previous upturn – the entrepreneurs.
>
> Hierarchic values also extend to wider societal concerns: boundaries tighten and pressures mount to roll back the perceived excesses and tolerances of the prior upturn. There are calls for increased controls over immigration. Sexual constraints are promoted; female fashions become more modest with longer hemlines and covered shoulders. Conspicuous consumption is frowned upon. In CT terms there is an overall increase in Grid. But economic

> affairs post the crash, are at the core of this wider ideological shift. These cyclical swings from tolerance to control are repeated in each cycle. In upturns, as will be shown, controls on credit are progressively relaxed until the crash when we have a liquidation of credit followed by a re-imposition of controls.[17]

VALIDATION OF HYPOTHESIS

As we used Alan Greenspan as our first example of the variety of risk attitude among regulators, we will let his thoughts be our first evidence.

> The most credible explanation of why risk management based on state-of-the-art statistical models can perform so poorly is that the underlying data used to estimate a model's structure are drawn generally from both periods of euphoria and periods of fear, that is, from regimes with importantly different dynamics.
>
> The contraction phase of credit and business cycles, driven by fear, have historically been far shorter and far more abrupt than the expansion phase, which is driven by a slow but cumulative build-up of euphoria. Over the past half-century, the American economy was in contraction only one-seventh of the time. But it is the onset of that one-seventh for which risk management must be most prepared. Negative correlations among asset classes, so evident during an expansion, can collapse as all asset prices fall together, undermining the strategy of improving risk/reward trade-offs through diversification.

[17] Mars, G. Thompson, M Individualism v. Hierarchy: Kondratieff and his Crime Waves 2013

> If we could adequately model each phase of the cycle separately and divine the signals that tell us when the shift in regimes is about to occur, risk management systems would be improved significantly.
>
> . . .
>
> We will never be able to anticipate all discontinuities in financial markets. Discontinuities are, of necessity, a surprise. Anticipated events are arbitraged away. But if, as I strongly suspect, periods of euphoria are very difficult to suppress as they build, they will not collapse until the speculative fever breaks on its own. Paradoxically, to the extent risk management succeeds in identifying such episodes, it can prolong and enlarge the period of euphoria. But risk management can never reach perfection. It will eventually fail and a disturbing reality will be laid bare, prompting an unexpected and sharp discontinuous response.[18]

One seminal paper that is worthy of separate discussion is "The Dog and the Frisbee" – a paper from Director of Systemic Risk at the Bank of England, Andy Haldane.

In the paper Andy Haldane focuses on a few key points. These being:

- That parameter space for many banking models, especially those of the largest banks, is large compared to the data sets on which these parameters are calibrated. He calls into question – with some justification – the lack of

[18] Greeenspan, A We will never have a perfect model of risk Financial Times March 16, 2009.

predictive power and the better performance of simpler models in environments where there is more complexity – and therefore uncertainty. He highlight the large periods of historic (and presumably stationary) data that are needed for complex models to be better predictors of risk. To this end Andy Haldane favours simpler metrics such as Leverage Ratios in regulating complex uncertain businesses and systems. He makes the point that the latest wave of regulation Basel III, Dodd-Frank and the EU equivalents EMIR, CRD etc. make the mistake of trying to regulate complexity with complexity. His point is that the regulated banks react to complex regulation by a focus on the detail - ensuring they do not transgress any one of the myriad of rules – and that the bigger picture is subsequently missed.

- That the numbers of regulators have expanded hugely over recent years compared to the banks they regulate. He makes the case for fewer but more experienced regulators due to the low frequency of financial crises. More hedgehogs relative to foxes.
- That the reporting information required from banks has become extremely large and unwieldy preventing regulators being able to understand what is really going on inside the banks.
- The difference between banning risky activities vs. allowing activities but seeking that they are pricing correctly. He makes the case for why allowing certain risks and assuming the market will price accordingly could be flawed in the presence of complexity and uncertainty – as the pricing mechanism can fail. He points to the length of time that Glass-Stegall (a prohibiting

regulation) remained in force vs. Basel II (a risk pricing regulation). In this regard Andy Haldane - like outgoing governor Sir Mervyn King – is disposed towards breaking up large banks. Interestingly he cites how the bank themselves – in pursuit of boosting their share prices - paved the way for the Glass-Stegall prohibition in the 1930s.

- The need to dis-incentivise complexity rather than encourage it. In this regard the top down (G)Si-Fi capital charges of the FSB are lauded but bottom up measures are suggested as a way to further dis-incentivise complex business models.
- The fact that after the Basel internal Model regime came into force in the mid-1990s a rubicon was crossed and the regulatory backstop was now being set by commercial judgements – whereas previously regulatory judgements had applied. Andy Haldane argues that handing the judgements over the regulatory back-stops to the banks themselves is less of a good idea and more regulator calibrated models should be used.

The Haldane paper presents interesting evidence for the application of Plural Rationality theory in analysing different regulatory approaches.

There are two quite different approaches on display here to the prudential regulation of banks but can we unpick them into the viewpoints that we have seen previously.

The Haldane point of view can be seen to advocate some elements of the hierarchical approach and the egalitarian approach. In advocating the power of the experts (hedgehogs) who are better placed to smell a crisis from their years of experience we see an element of hierarchy. This viewpoint allows certain risks to be run but the hierarchy (the hedgehog experts) decide when the hand of regulation needs to come down and take charge. On the other hand regulation that will prohibit certain activities can be seen as more of an egalitarian perspective – this perspective is one of saying that there is no safe amount of risk – so the only way to proceed is to prohibit that which is dangerous.

Haldane's speech contains evidence of both a hierarchical and egalitarian approach to regulation.

The *hierarchical* Haldane sees value in the power of the regulator on the regulated entities. His preferred toolset while simpler is vesting more power in the hands of the regulator and relying on the expertise in the regulator to judge where when risk is too much risk.

The desire to keep the judgements over where the regulatory backstop are with the regulator point to a view that the expertise that Andy Haldane sees as valid for the purpose of regulation are the expertise and judgements of the *regulator*.

However the *egalitarian* Andy Haldane would appear to be getting deployed in the area of cross-functional regulation – specifically between the investment bank and the retail bank. Our reading of the paper is that mixing these two activities within one bank creates too much complexity and therefore too much uncertainty for effective regulation – even hierarchical regulation.

To the debate over whether supervisors should be using complex regulatory measures or simpler measures, we would argue that there is less that can be said through the lens of Plural Rationality theory.

Both these measures and the limits – if set using the expertise of the regulator and not devolved to the bank –reflect *hierarchical* approaches. They are not *egalitarian* as they do not prohibit activity of themselves and being set by the regulator they are not *individualistic*.

The question of which is better is more of a technical question related to complex systems and model risk which is best answered by testing – out of sample - the predictive power of different metrics. This is something that the Andy Haldane paper has attempted to undertake.

On whether complex or simple reporting is better the target end user of the reporting can point to different types of cultural behaviour. For example if the purpose of the detailed reporting is to give more information to the regulatory experts in order to exercise their judgement then this could be seen as a *hierarchical* approach. Whether more reporting is more or less information would need to be answered through a different lens – perhaps psychological – and would depend on the data and analytics available to the supervisor.

If however the target end user of the reporting was the market – in the sense of Pillar 3 public reporting – then we would argue this aspect of the regulation is effectively *individualistic* – vesting power in the free market to apply pressure to the management of the company.

Finally, in preliminary discussions with a very limited number of current and recent insurance regulators, there was general agreement that a purely individualistic approach to regulation, that is relying upon the self interest of the company management and directors along with the markets, would not work well in the insurance industry. In the recent past, however, some “off-shore” financial centers did generally conduct their regulatory regimes under a relatively light touch. Interestingly, in some of those jurisdictions, the regulatory regime has been tightened at the request of the regulated firms. Those firms feel the need to present themselves as operating within a regulatory regime similar to that developing elsewhere, especially consistent with the new Solvency II regime in Europe. Since this shift did not originate with the regulators, we suspect that there was not necessarily a shift in the risk attitude of the regulators coincident with this shift in regulatory approach. In some cases, regulators were imported to implement the shift in regulatory approach; presumably those imported regulators did adhere to a more hierarchical risk attitude.

When faced with the types of regulatory approach described by this paper’s attempt to apply Plural Rationality theory, one of the regulators embraced the ideas but cautioned that most regulators were Managers. Another suggested that the terminology was too business oriented and needed redesign to apply to regulators.

One interviewee suggested that the largely hierarchical regulators have been working under the maxim of “never waste a good crisis” to effectuate a shift in regulatory approach towards more Hierarchical, principles based system and away from the more market based approach that had developed over the previous 20 years.

Another regulator favored what we would describe as a hybrid Egalitarian and Individualist system for regulation. This system would have strict rules and prohibitions about some risks that are seen to be threatening to the ability of insurers to actually pay their claims but would leave most other matters to the companies and ultimately the markets. Capital requirements under this sort of system would be modest with the expectation (and experience) that markets would actually demand higher levels of capital.

The idea that "Increasing shareholder value by letting models run firms with more risk shown not to work – that is an old view of the world" was expressed by one interviewee and that view neatly summarizes the shift away from a purely hierarchical view of risk.

In another interview, a regulator spoke of a preference for a larger number of smaller firms, rather than the banking approach of supporting very large banks through the designation of overly large significant banks and other firms that would receive extra regulatory attention. This we would characterize as an egalitarian view that has also been expressed by Simon Johnson, former chief economist of the IMF[19].

[19] Johnson, S. The 13 Bankers

TENTATIVE CONCLUSIONS

Insurers or other regulated firms can be more effective risk takers if they are able to align their risk taking and risk management strategy with the risk environment[20]. Regulators may often hold a risk attitude that is different from the optimal risk attitude that works best for firms in the actual risk environment. In such cases, they will be pressuring insurers to adopt risk strategies that conform to the regulators view rather than the environment. This will cause tension between the industry and the regulator – and in fact could create pressures that lead to a change in the regulator's stance. Therefore, the regulated firms will only be able to align their risk strategy with the environment primarily when the regulator is aligned. In some cases, the regulator can also lose the ability to significantly influence the regulated companies, often because of some recent past period of misalignment.

Some of the regulated companies believe that they would perform better and be better able to meet the regulatory goals if they are able to align with the risk environment. They would suggest that a goal of the regulator should be to be better aligned with the environment. That process is called Rational Adaptability (in contrast to Rational Expectations)[21]. However, Rational Adaptability is mostly a theoretical ideal. A more practical objective is called the Clumsy Solution[22].

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[20] Ingram, Underwood (2012) and Ingram, Tayler, Thompson (2012)
[21] Ingram, Underwood (2012)
[22] Thompson, M. Verweij,M. Clumsy Solutions for a Complex World: Governance, Politics and Plural Perceptions Macmillan 2012

Our tentative suggestion is the development of an "Insightful Manager" approach to regulation[23]. There would be two major aspects to this approach. The first would be the deliberate seeking out of other regulators and market participants with different risk attitudes to obtain their perspectives on the most pressing risk issues and the most productive approaches to those issues.

> A new consensus about how to manage risks will require the abandonment of objectivism -- the idea that we can clearly distinguish between what the risks really are and what people variously and erroneously believe them to be. It will have to give way to constructivism – the idea that risk is inherently subjective: something that we project onto whatever it is that is "out there". Risk is a word that refers to the future. It exists only in our imaginations – informed of course by experience. Sometimes there may be little divergence between projections of past experience and actual outcomes – in which case actuarial or science-based approaches to risk management can be helpful. [24]

The second aspect is the adoption of a Clumsy Solution approach to policy setting. With a clumsy solution, none of the four voices are ignored. A compromise is thrashed out that is not totally satisfactory to any through a lively exchange. The first question that always comes up with this proposal is "What if we know the right answer?" The response is that the really difficult problems are always the ones where we do not know the future in advance.

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[23] Adams, J. Thompson, M. Taking account of societal concerns about risk HSE Books 2002

[24] Adams, Thompson (2002)

NEXT STEPS

Clearly, in this brief exposition, we have not been able to "prove" our propositions, but hopefully we have provided sufficient detail to allow some planning for next steps and to make taking those steps seem valuable. At this point, we can envision two additional projects that might extend our understanding of the application of Plural Rationality theory to the insurance regulatory environment:

1. We performed just three interviews with regulators. Those provided enough encouragement that we felt comfortable presenting these propositions, but not enough to support them fully. We would propose that much more extensive discussions be undertaken with regulators in multiple jurisdictions around the world along with a study of their current and past regulatory regimes to determine if more detailed evidence will support our hypotheses.
2. In the Surprise, Surprise paper, we were able to demonstrate that the Plural Rationality theory was sufficient to develop a description of a world and a model of that world that approximated the sort of semi chaotic business cycles that we actually experience. We would also propose that the Surprise Game model be extended to the insurance world and/or that a regulatory element be added to the existing model. With this we could test the impact of the regulatory regime on the model outcomes.

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