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## Farewell Edition

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**Cont.**

# Towards a New Perspective: Balancing Risk, Safety and Danger

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*The management of risk has gradually emerged as a normal activity that is now a constituent part of many professions. The concept of risk has become so ubiquitous that we continually search for risk-based explanations of the world around us. Decisions and projects are often viewed through the lens of risk to determine progress, value and utility. But risk can have more than one face depending on the stance that we adopt. The article looks at the implications of adopting different positions regarding risk thereby opening a wider discussion about the links to danger and safety. In rethinking our position, we are able to appraise the different strategies that are available and reason about the need to adopt a more balanced position as an essential step towards developing a better informed perspective for managing risk and potential.*

**Keywords:** Anticipation, Danger, Resilience, Risk, Risk Management, Safety.

### Introduction

Imagine a clash between two worlds, one that is risk-averse, traditional and conservative, the other that is risk-seeking, opportunistic and entrepreneurial. The former is the old world, dedicated to the *precautionary principle* parading under the banner 'better safe than sorry'. The latter is the new world, committed to the maxim 'no pain, no gain'. The question we are asked to address is whether the defensive posture exhibited by the old world or the forever offensive stance of the new world is likely to prevail.

Would their attitude to risk determine the outcome of this question? The answer must be a qualified yes. The notion of risk has become topical and pervasive in many contexts. Indeed Beck [1] argues that risk has become a dominant feature of society, and that it has replaced wealth production as the means of measuring decisions.

### In that Case, let's survey the Combatants

Encamped on one bank, the old world is likely to resist the temptation of genetically modified crops and hormone-induced products despite the advertised potential benefits. Risk is traditionally perceived as negative quantity, danger, hazard or potential harm. Much of risk management is predicated around the concept of the *precautionary principle*, asserting that acting in anticipation of the worst form of harm should ensure that it does not materialise. Action is therefore biased towards addressing certain forms of risk that are perceived as particularly unacceptable and preventing them from occurring, even if scientific proof of the effects is not fully established. According to this principle, old-world risk regulators cannot afford to take a chance with some (normally highly political) risks.

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Old-world thinking supports the adoption of precautionary measures even when some cause and effect relationships are not fully understood. In others words, the principle links hazards or threats with (scientific) uncertainty to demand defensive measures. Following the lead offered by the legal systems of Germany, Sweden and Denmark, the precautionary principle is likely to be fully embraced in guiding European Commission policy (such as the White Paper on Food Safety published by the Commission in 2000). When followed to the extreme, this policy leads to the pursuit of a zero-risk approach, which like zero defects will remain elusive.

Amassed opposite is the new world, where risks convey potential, opportunity and innovation. Risk offers the potential for gains, and occasionally creative chances and opportunities to discover new patterns of behaviour that can lead to serious advantage over the competition. Risk thus offers a key source of innovation. This can be viewed as the aggressive entrepreneurial approach to business.

### Who would you bet your Money on?

In the old-world camp, risk management is a disciplined way of analysing risk and safety problems in well defined domains. The difficulty lies in the mix of complexity, ambiguity and uncertainty with human values where problems are not amenable to old-world technical solutions. New-world problems manifest themselves as human interactions with systems. They are complex, vexing socio-technical dilemmas involving multiple participants with competing interests and conflicting values (read that as opportunities)

A ground rule for the clash is that total elimination of risk is both impossible and undesirable. It is a natural human tendency to try to eliminate a given risk; however that may increase other risks or introduce new ones. Furthermore, the risks one is likely to attempt to eliminate are the better-known risks that must have occurred in the past and about which more is known. Given that elimination is not an option, we are forced into a more visible coexistence with risks and their implications. The rest of this article will focus on the dynamic relationship between safety, risk and danger as an alternative way of viewing the risk–opportunity spectrum. It will therefore help to map, and potentially resolve, the roots of the clash from an alternative perspective.

### Away with Danger?

The old world equates risk with danger, in an attempt to achieve a safer environment. If only it were that simple! Safety may result from the experience of danger. Early programmes, models and inventions are fraught with problems. Experience accumulates through interaction with and resolution of these problems. Trial and error leads to the ability to reduce error. Eliminate all errors and you reduce the opportunity for true reflective learning.

Safety, be it in air traffic control systems, business environments, manufacturing or elsewhere, is normally achieved through the accumulated experience of taking risks. In the old world, the ability to know how to reduce risks inevitably grows out of historical interaction with risk. Solutions are shaped by past problems. Without taking risk to know how to reduce risks, you would not know which solutions are safe or useful.

What happens when a risk is actually reduced? Experience reveals that safety also comes with a price. As we feel safe, we tend to take more chances and attract new dangers. Research shows that the generation of added safety, through safety belts in cars or helmets in sport, encourages danger-courting behaviour, leading often to a net increase in overall risk taking. This may be explained by the reduced incentive to avoid a risk, once protection against it has been obtained.

Adding safety measures also adds to the overall complexity of the design process and the designed system, and to the number of interactions, thereby increasing the difficulty of understanding them and the likelihood of accidents and errors. In some computer systems, adding safety devices may likewise decrease the overall level of safety. The more interconnected the technology and the greater the number of components, the greater the potential for components to affect each other unexpectedly and to spread problems, and the greater the number of potential ways for something to go wrong.

So far we have observed that risk and danger maintain a paradoxical relationship, where risks can improve safety and safety measures can increase risks. Danger and benefits are intertwined in complex ways ensuring that safety always comes at a price. Safety, like risk, depends on the perception of participants.

### Predicting Danger

The mitigation of risk, as practised in the old world, is typically predicated on the assumption of **anticipation**. It thus assumes that risks can be identified, characterised, quantified and addressed in advance of their occurrence. The separation of cause and effect, implied by these actions, depends on stability and equilibrium within the system. The purpose of intended action is to return the system to the *status quo* following temporary disturbances. The old world equates danger with deviation from the *status quo*, which must be reversed. The purpose of risk management is to apply resources to eliminate such disturbances. The old-world is thus busy projecting past experience into the future. It is thus perfectly placed to address previous battles but not new engagements.

The assumption of anticipation offers a bad bet in an uncertain and unpredictable environment. An alternative strategy is **resilience**, which represents the way an organism or a system adapts itself to new circumstances in a more active and agile search for safety. The type of approach applied by new-world practitioners calls for an ability to absorb change and disruption, keep options open, and deal with the unexpected by conserving energy and utilising sur-

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plus resources more effectively and more creatively.

The secret in new-world thinking is to search for the next acceptable state rather than focus on returning to the previous state. In the absence of knowledge about the future, it is still possible to respond to change, by finding a new beneficial state as the result of a disturbance. Bouncing back and grabbing new opportunities becomes the order of the day. Entrepreneurs, like pilots, learn to deal with new situations through the gradual development of a portfolio of coping patterns and strategies that is honed by experience. Above all they learn to adapt and respond.

New-world actors grow up experimenting. Trial and experimentation makes them more knowledgeable and capable. Experiments provide information and varied experience about unknown processes, different strategies and alternative reaction modes. Intelligent risk-taking in the form of trial and error leads to true learning and ultimate improvement. The key to avoiding dramatic failures, and to developing new methods and practice in dealing with them, lies in such learning-in-the-small.

Acceptance of small errors is at the crux of developing the skills and capability to deal with larger problems. Small doses of danger provide the necessary feedback for learning and improvement. Similar efforts are employed by credit card companies, banks and security organisations, who orchestrate frequent threats and organised breaches of security to test their capability and learn new strategies and approaches for coping with problems. In the new world, taking small chances is a part of learning — and so is failure! Small, recognisable and reversible actions permit experimentation with new phenomena at relatively low risks. Once again we paradoxically discover that contained experimentation with danger leads to improved safety.

Large numbers of small moves, with frequent feedback and adjustment permit experimentation on a large scale with new phenomena at relatively low risks. Contained experimentation with danger leads to improved understanding of safety. Risk management is therefore a balancing act between stopping accidents, increasing safety, avoiding catastrophes and receiving rewards. Traditional mechanistically based risk management spends too much time and effort on minimising accidents: as a result it loses the ability to respond, ignores potential rewards and opportunities, and may face tougher challenges as they accumulate. It also focuses excessively on reducing accidents, to the extent that rewards are often neglected and excluded from decision-making frames. Such fixation with worst-case scenarios and anticipation of worst-case circumstances often leads to an inability to deal with alternative scenarios.

In the new world, safety is not a state or *status quo*, but a dynamic process that tolerates natural change and discovery cycles. It can thus be viewed as a discovered commodity. This resource needs to be maintained and cherished to preserve its relevance and value. Accepting safety (and even danger?) as a resource makes possible the adoption of a long-term perspective, and it thus becomes natural to strive for the continuous improvement of safety.

While many organisations may object to the introduction of risk assessment and risk management because of the negative overtones, it is more difficult to resist an ongoing perspective emphasising improvement and enhanced safety. After all, successful risk assessment, like testing, is primarily concerned with identifying problems (albeit before they occur). The natural extension, therefore, is not to focus simply on risk as a potential for achievement, but to regard the safety to which it can lead as a resource worth cherishing.

Like other commodities, safety degrades and decays with time. The safety asset therefore needs continuous maintenance to reverse entropy and maintain its relevance with respect to an ever-changing environment. Relaxing of this effort will lead to a decline both in the level of safety and in its value as a corporate asset. In order to maintain its value, the process of risk management (or more appealingly, safety management) must be kept central and continuous.

Exploring risks as an ongoing activity offers another strategic advantage, in the form of the continuous discovery of new opportunities. Risk anticipation locks actors into the use of tactics that have worked in the past (even doing nothing reduces the number of available options). Resilience and experimentation can easily uncover new options and innovative methods for dealing with problems. They thus lead to divergence, and the value of the created diversity is in having the ability to call on a host of different types of solutions.

Miller and Freisen observe that successful organisations appear to be sensitive to changes in their environment [2]. Peters and Waterman [3] report that successful companies typically:

- experiment more,
- encourage more tries,
- permit small failures,
- keep things small,
- interact with customers,
- encourage internal competition and allow resultant duplication and overlap, and
- maintain a rich information environment.

Uncertainty and ambiguity lead to potential opportunities as well as 'unanticipated' risks. Resilience is built through experimentation, through delaying commitment,

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through enabling, recognising and embracing opportunities and, above all, through the acquisition of knowledge, experience and practice in dealing with adversity-in-the-small.

Risk management requires flexible technologies arranged with diversity and agility. Generally, a variety of styles, approaches and methods are required to ensure that more problems can be resolved. This argument can be extended to propose that such a diverse armoury should include anticipation (which is essentially proactive), as well as resilience (essentially reactive in response to unknowable events) in various combinations. The two approaches are not mutually exclusive and can complement one another as each responds to a particular type of situation.

Resilience and exploration are ideal under conditions of ambiguity and extreme uncertainty. Anticipation can be used under risky, yet reasonably certain, conditions; while the vast space in between would qualify for a balanced combination of anticipation and resilience operating in concert.

The management of risks therefore needs to be coupled to the nature of the environment. After all, managing progress is not about fitting an undertaking to a (probably already redundant) plan, but is about reducing the difference between plan and reality. This need not be achieved through the elimination of problems (which may prove to be a source of innovation), but through adaptation to changing circumstances. By overcoming the momentum that resists change, with small incursions and experiments leading to rapid feedback, it becomes possible to avoid major disasters and dramatic failures through acting in-the-small and utilising agile risk management.

### Remember the two Worlds?

Well, it appears we need both. The old world is outstanding at using available information in an effort to improve efficiency and execution, while the new world is concerned with potential, promise and innovation.

The single most important characteristic of success has often been described as conflict or contention. The clash between the worlds provides just that. It gives rise to a portfolio of attitudes, experiences and expertise that can be used as needed. Skilful manipulation of the safety resource and the knowledge of both worlds would entail balancing a portfolio of risks, ensuring that the right risks are taken and that the right opportunities are exploited while keeping a watchful eye on the balance between safety and danger. A satisfactory balance will thus facilitate the exploration of new possibilities alongside the exploitation of old and well-understood certainties. By consulting all those affected by risks, and by maximising the repertoire, it becomes possible to damp the social amplification of risk and to embrace risk

and danger from an intelligent and collective perspective.

If this balance is not achieved, one of the two worlds will prevail. They will bring with them their baggage, which will dominate risk practice. A practice dominated by either 'better safe than sorry' or 'no pain, no gain' will be unable to combine the benefits of agile exploration and mature exploitation. Intelligent risk management depends on a dynamic balancing act that is responsive to environmental feedback.

Perhaps more importantly, the justification for creating such a balance lies in taking a long-term perspective and viewing safety as an evolving commodity. Risk management is not a service. A specific risk may be discrete, but risk management is a growing and evolving body of knowledge -- an improving asset. In this improvement lies the value of the asset.

*"There is no point in getting into a panic about the risks of life until you have compared the risks which worry you with those that don't, but perhaps should!"*

**Lord N. Rothschild, 1978**

Once we graduate beyond viewing risk management as a fad offered by either world, we can find the middle ground and the benefit of both worlds.

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