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'In-between' and other reasonable ways to deal with risk and uncertainty: A review article

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How people deal with risk and uncertainty has fuelled public and academic debate in recent decades. Researchers have shown that common distinctions between rational and 'irrational' strategies underestimate the complexity of how people approach an uncertain future. I suggested in 2008 that strategies in-between do not follow standards of instrumental rationality nor they are 'irrational' but follow their own logic which works well under particular circumstances. Strategies such as trust, intuition and emotion are an important part of the mix when people deal with risk and uncertainty. In this article, I develop my original argument. It explores in-between strategies to deal with possible undesired outcomes of decisions. I examine 'non-rational strategies' and in particular the notions of active, passive and reflexive hope. Furthermore, I argue that my original typology should be seen as a triangular of reasonable strategies which work well under specific circumstances. Finally, I highlight a number of different ways in which these strategies combine.

Keywords: risk; uncertainty; trust; emotion; intuition

Introduction

Eight years ago, I published an article – *Heading into the unknown: Everyday strategies for managing risk and uncertainty* (Zinn, 2008) – in which I observed that in many social domains the distinction between expert and laypeople prevails, preventing an accurate understanding of the practice of lay and expert decision-making. In the article, which has been widely read and cited, I argued that dividing the world into a rational realm of experts and non-rational realm of laypeople missed out on the complexity and limits of expert 'rational' decision-making, as well as the knowledge and skills of people when making decisions and dealing with risk in everyday life (Horlick-Jones, 2005; Horlick-Jones et al., 2007; Wynne, 1996). I suggested that instrumental rationality is only one decision-making strategy amongst others and is not necessarily dominant or superior. For a number of reasons but in particular when knowledge or time is limited and complexity overwhelming (Beck, 1992; Gigerenzer & Todd, 2001; Klein, 1998), people would complement or supplant rationality with other *in-between* strategies such as trust, intuition and emotion utilising sources of so-called *tacit* or *experiential knowledge* (see, for

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example, Borkman, 1976; Popay & Williams, 1996; Reber, 1995). Even the often considered *non-rational approaches* relying on hope, faith or ideology, which I will argue should be regarded as reasonable strategies with their own logics, are only *irrational* from a narrow modernist point of view (Weber, 1948), while in everyday life these are important resources that enable people to embrace risk and manage uncertainty.

Indeed, research findings continue to show that *in-between* strategies are much more common than usually expected, not only amongst non-experts but also amongst experts. If theorists such as Beck, Giddens, and Lash (1994) are correct regarding a general societal change towards a *risk society* or *risk culture, in-between* strategies are more important when expert knowledge is fundamental but contested in dealing with future challenges. In *late* or *reflexive modernity* people are increasingly exposed to fateful decision-making in everyday life with neither sufficient time nor available knowledge. Under such conditions *rational* strategies might be less useful than *in-between* strategies. Even non-rational strategies, which have often been assumed to be losing influence in a modern world of ongoing *rationalisation* and *secularisation* (see, for example, Taylor, 2007; Weber, 1930 [1905]), might be attractive for people when experiencing social change and growing complexity while lacking knowledge and control over their future.

Whether one follows such hypotheses or not, researchers have shown that people use a mix of all such strategies when managing risk and uncertainty. Therefore, I suggest researching when and how different strategies are mobilised and how they combine in different ways. I follow Horlick-Jones' suggestion (Horlick-Jones, 2005; Horlick-Jones et al., 2007) of analysing the *bricolage* of *everyday reasoning*. Horlick-Jones focused on the description of dynamic processes of reasoning in groups though he and his colleagues did not elaborate on how emotion might be involved in the process (Horlick-Jones, 2005; Horlick-Jones et al., 2007). However, I am more interested in the different logics people refer to when making sense of and actively engage with risk and uncertainty such as emotions, trust and intuition.

When I developed my typology in 2008, I felt the need for sharper analytical tools to systematise the growing body of research and debates about all kinds of concepts such as trust, intuition, emotion, faith and hope. These often came with frivolous over generalisations and normative judgements and sometimes referred to macro-theories of social change which were not constructed to capture micro-level complexities of people managing competing risks and opportunities in everyday life. The micro approach of the typology does not deny the relevance of more general social forces (such as institutional, structural, cultural) being at work but follows fundamental assumptions that such changes take place through individuals and are therefore observable on the micro level (see Bourdieu, 1979; Elias, 1976). I hope that the typology continues to contribute to the development of an empirically grounded understanding of how social players combine and mobilise strategies under different social conditions.

There is a growing body of research that provides evidence of a rapidly developing research agenda. In this article, I will not try to cover all the contributions or relevant dimensions. However, there are developments that are generating important insights into risk issues in:

- *The Global South* Studies which challenge the Western bias in risk research and explore how 'risk' issues are addressed in non-North-Western contexts where magical/traditional and Western approaches compete and mix in different ways (see, for example, Alaszewski, 2015; Brown, 2015; Desmond, 2015) and encourage rediscovering the magical and superstitious in the West.

- *Non-rational strategies* as evidenced by recent interest in hope, faith and super-stition that has started to contribute to a better understanding of how important such strategies are (but not only) for disadvantaged social groups to deal with or to try to overcome suffering in everyday life (for example, Hernandez-Carretero & Carling, 2012).
- *The role of institutions*. This study of non-rational strategies is still in its infancy but crucial for understanding social dynamics of *rational, in-between* and *non-rational strategies* and how social institutions encourage, discourage or exploit different strategies such as hoping (Brown, 2005; Delvecchio Good, 2001) or trusting (Brown, De Graaf, Hillen, Smets, & Laarhoven, 2015) for their own advantage.

While such debates about risk are intense, how to define key concepts such as risk and uncertainty is still contested (for example, Aven & Renn, 2009; Garland, 2003; Merkelsen, 2011; Renn, 1992). Both my 2008 article and the proposed typology were underpinned by the assumption that risk and uncertainty are mutually constitutive concepts. Uncertainty is central to the understanding of risk as the possibility of an undesired event. At the same time uncertainty is only relevant when it comes with the expectation of a potentially undesired future which requires a response. This is important because risk in this context is not just something that is unpleasant or a nuisance but in the view of the decision makers has the potential to significantly affect his or her life. It is important to distinguish between the definition of risk and the way in which expectations regarding the future are generated since it allows us to observe and systematise all kinds of ways of developing expectations and *strategies* to manage them, for example, on the basis of probability calculation, experiential knowledge, wishful thinking.

In this review article, I aim to refine the argument I put forward in my original article (Zinn, 2008). I will start with a brief summary of the main points and revisit the question of how people expect to deal with the possible negative outcomes of their activities in an *in-between* logic of trust, intuition and emotion. I elaborate my argument as to why I consider emotions as an *in-between* strategy and review the growing interest in hope and other *non-rational* strategies including institutional encouragements to hope. I then discuss the 'rationalist' terminology of my original typology and suggest considering *rational, in-between* and *non-rational* strategies as reasonable strategies while I confine the term *rational* to *(instrumental) rationality*. Since the linearity of my original typology led some commentators to see it as a hierarchy, I offer an alternative triangular structure of all *reasonable* strategies showing that each strategy has its own unique strengths. I also revisit the ideal-type character of the typology of reasonable strategies as this has been the source of some misunderstandings. I follow Max Weber (1948) who suggested that 'pure types' idealise empirical reality to make sense of a more complex and messy social world. It is then an empirical question how these types combine or are linked to particular social conditions, an issue which I consider in the last section of this article. In the conclusion, I summarise the increasing evidence that in-between strategies are an important element in our understanding of how people in everyday life mobilise different resources to manage risk and uncertainty.

The original argument

Risk society theorists such as Beck and Giddens suggest fundamental societal changes are transforming modern societies. In these societies, the occurrence of new risks and uncertainties has encouraged people to scrutinise and challenge traditional institutions.

Table 1. Rational orthodoxy and strategies *in-between*.

Managing …	Rational strategies such as …	Strategies *in-between* such as …	Non-rational strategies such as …
Risk and uncertainty by …	Weighing of pros and cons, calculation	Trust, intuition, emotion	Belief, hope, faith

Source: (Zinn, 2008, p. 442)

For example, as scientific uncertainty and controversy moves into the public domain, it restricts the ability of scientific experts to monopolise debates. This enables people to challenge expert claims, but scientific knowledge remains crucial to providing arguments with legitimacy (Beck, 1992). The *prudent citizens*, reflexively dealing with their social environment, have become an emblem of our times (Kemshall, 2006; Rose, 1999) when social institutions, traditions and routines are less helpful in guiding individual decision-making. Instead, broader social transformations of all kinds of social domains are responsible for high complexity and volatility of the social world. Under such conditions, strategies such as trust in experts (Mishra, 1996; Seligman, 2000) are problematic but vital at the same time, since lay people depend on expert risk knowledge but cannot be sure about expert's trustworthiness. Often people may decide in a reflex-like manner when there is not enough time and knowledge for reflexive and well-informed decision-making (Beck & Beck-Gernsheim, 2002; Lash, 2001). Rather than always and excessively scrutinising knowledge, people rely on their intuition instead. Both, trust and intuition are experience based and refer to a kind of tacit knowledge (see, for example, Klein, 1998; Wynne, 1992). They also utilise feelings and emotions when accessing preconscious and subconscious experience. Positive affect is associated with trust while intuition can be expressed in emotional terms, for example, when individuals use the sense that 'it feels right to me' as a basis for action (Zinn, 2008).

Furthermore, the strategies I refer to as *non-rational* such as hope, faith and ideology can be shown to be useful as a way to motivate and direct people's activity when, for example, the future seems bleak and meaningless and beyond individual control (Bloch, 1986; Mattingly, 2006; Zigon, 2009). Furthermore, health researchers have argued that *hope* as a positive attitude towards the future would support healing and increase the likelihood of recovery (Ehrenreich, 2009) and is therefore a reasonable approach towards risk and uncertainty.

These *in-between* and *non-rational* strategies are typically used in combination with one another (see Table 1 for the typology of strategies) and in many contexts may dominate people's management of risk and uncertainty, for experts and in everyday contexts alike. It is the ubiquity of these processes that led me to argue that it is crucial for experts to acknowledge and recognise their importance and capacity to improve the social management of risk and uncertainty.

In-between strategies of managing possible negative outcomes

In the original article, I distinguished strategies of direct management and control of risk and uncertainty and ways of dealing with the possibility of undesired events. This is important since it highlights that even when negative events cannot be prevented they are expected and prepared for (in contrast to events which are considered not serious enough

to justify any provision). A typical rational strategy would be to turn to insurance to prepare for undesired events such as death, fire or accident one cannot sufficiently prepare for individually. Insurance has become the *gold standard* of modern societies for dealing with unpreventable danger. As has been noted (Baker & Simon, 2002) insurance does not deal with the undesired event itself but transforms it into a financial issue and then compensates financially. However, insurances such as health, social and life insurance contribute to stabilise expectations towards the future and to reduce the financial impact of such events on an individual's life.

In contrast, the domain of *non-rational* strategies is characterised by lack of control. Therefore, it is only hope, faith or ideology rather than rational calculation which provide confidence that desired outcomes happen. Negative outcomes are considered inaccessible to the individual's own effort. They would be avoided and if they cannot be avoided, individuals can only give in and accept fate; however, I will argue later in this article that hope and faith can be used as resources enabling people to take high risks (Zinn, 2015). Religion can provide strategies such as prayer to influence the outcomes and encourage God's resolution but the success of these activities cannot be known. Thus, from a rationalist perspective, they are seen as coping strategies, a way to mentally deal with what (might) happen. *Non-rational* strategies do not include the possibility of systematically applying positive knowledge and learning from trial and error since they refer mainly to a generalised attitude which can be utilised even when there is available knowledge. Thus, the strength of *non-rational* strategies being applicable even when there is better knowledge is at the same time their weakness.

In the 2008 article, I did not specify what *in-between* strategies to deal with the unpreventable occurrence of undesired events would look like. Institutional arrangements such as the *precautionary principle* (Harremoës, 2002) have a strong focus on prevention where insurance is no longer an option since the possible harm is potentially catastrophic and irreversible. From a rationalist point of view, the principle has been criticised and rejected as irrational because of the risks of missed opportunities (see Wildavsky, 1988). From a rational perspective, the principle does not make much sense since decisions are not primarily evidence based but justified by the worries about possible outcomes. What seems to be an important point though is the emphasis of a broader knowledge base including 'well informed guesswork' of (lay-) experts which underpins decisions rather than explicitly proven knowledge. For an everyday life perspective, precaution means engaging in a broad knowledge strategy which includes experts, friends and family members alike. Networking seems to be a key element, and similar to the precautionary principle the burden of responsibility is on many shoulders in case things go wrong.

In a slightly different approach, the *real-world experiment* ('Realexperimente', Groß & Hoffmann-Riem, 2005; Groß, Hoffmann-Riem, & Krohn, 2005), broadening the knowledge base is also a key element. The concept of the *real-world experiment* emphasises that many innovations such as nuclear power, genetically modified food or geoengineering cannot be contained in a laboratory but happen in the world with unpredictable and largely irreversible effects. Therefore, an experimental design requires careful observation and openness for unexpected and undesired results. There might be some difficulties in how this openness can be secured, especially when one does not yet know what to focus on (see Aven, 2014). However, a regular re-evaluation and observation as well as openness for different forms of knowledge might be able to pick important issues if they occur (Groß & Hoffmann-Riem, 2005). The concept has a stronger emphasis on the time

Table 2. Rational orthodoxy and strategies in-between.

Managing …	Rational strategies such as …	Strategies in-between such as …	Non-rational strategies such as …
Risk and uncertainty by …	Weighing of pros and cons, calculation	Trust, intuition, emotion	Belief, hope, faith
Possible negative outcomes by …	Provision, insurance	Social networks, crowdsourcing	Avoidance, fate

dimension. Uncertainty does not only carry potential risk when a decision is made but *when* they occur is also an open question requiring ongoing alertness.

The experimental situation is not uncommon for everyday life decisions such as who to marry, whether to start a family and have children or to come out as homosexual. Such decisions are often not reversible and when attempted may have long-term and often unpredictable effects. A person preparing for such decisions may engage in long-term consultation processes with friends and relatives or ask people how they dealt with such situations. Key elements of in-between strategies to prepare for undesired events happening include the use of trustworthy social relationships. These form a valuable resource not only to deal with undesired outcomes but also to deal with professional experts and their advice (see Table 2 for the practical implications of the three strategies).

The Internet has added a new dimension to social networks which can provide valuable knowledge not only when making decisions but also when things have gone wrong. Online self-help groups have become a valuable resource for exchanging and building experiential knowledge, for dealing with or taking risk, in responding to negative experiences as well as for providing emotional support and confidence (for example, managing health issues Coulson, Buchanan, & Aubeeluck, 2007; Barak, Boniel-Nissim, & Suler, 2008; experimenting with drugs: Berning & Hardon, 2016).

In recent decades, the concept of emotions has attracted research that challenges the orthodoxy of rational cognition and non-rational emotions. Scholars also tried to reposition emotions in a risk framework. In the following section, I contribute to these debate and outline in more detail why I understand emotions as in-between strategy.

Emotions

Commentators have argued that emotions play an important role in shaping how individuals approach risk and uncertainty (for example, Slovic, 2010; Tulloch & Lupton, 2003). However, referring to emotions as a general principle is problematic given that there is not one emotion but a variety of emotions such as anger, disgust, fear, happiness, sadness and surprise amongst others, each with varying intensities and through which individual activities are shaped in different ways (such as support taking risk or avoiding risk). Psychologists have identified a growing number of emotions and have systemised them in different ways though there is a degree of agreement over categorisation of basic emotions, secondary and tertiary emotions (Parrots, 2001; Plutchik, 1991). Neurological research indicates that to some degree emotions inform all decisions (Damasio, 1996). Psychologists have highlighted that middle intensity emotions can act as an advisor (Loevenstein et al., 2001). Informants sometimes refer to their emotions reflexively, rather than as straightforward rationality, when deciding about important issues such as what

risks to take, which occupation to learn or which partner to marry (see Parker & Stanworth, 2005). However, the intensity argument seems to neglect that strong emotions such as anxiety, outrage or shame might be reasonable responses to high-risk situations or ethically questionable behaviour of others, for example, when public outrage contributes to challenging unjust political decisions. Intensity arguments might therefore be considered as following certain rationalist assumptions (through the backdoor) rather than acknowledging the independent logic of emotions.

Lupton (2013) uses the metaphor of the *emotion-risk assemblage* to suggest that:

> both emotions and risk judgements and understandings, rather than being located within the individual, are fluid, shared and collective. The concept of the 'emotion–risk assemblage' is introduced to denote a heterogeneous configuration of ideational and material, human and non-human elements that is subject to constant flux and change. (Lupton, 2013: 634)

Lupton's sociological critique of psychological explanations is helpful to counter reductionist explanations of social emotions. However, her emphasis on the '*constant flux and change*' of emotions could give the impression that emotions are too volatile or fluid to provide a reliable basis for decision-making and social order; a line of reasoning that resonates with modern dichotomous thinking of Gehlen (1980; 1988) to Luhmann (1984: 365).

However, I would argue that it is important to examine and understand different degrees of stability of and change in emotion–risk assemblages which are often much more stable when embedded in everyday practices (see Reckwitz, 2002; Shove, 2012) than is usually implied. For example, the shame of social underachievement may prey on an individual's mind over a long period of time until a risk is taken to overcome the felt burden. However, the institutional conditions, for example, the social disadvantage that shapes an individual's emotional social experience, might still have much more continuity and stability than fluidity. At the same time, immediate responses such as panic in face of risk or outrage and risk-taking against injustice might follow the argument of embodied emotional thinking, or of a combination of cognitive and emotional considerations which are difficult to separate. Emotions are probably as much rooted in the social realm as in the individual biography, where individual experiences accumulate and are reshaped through lifelong identity work (Zinn, 2010). Examining the different ways in which social contexts and individual (biographical) experiences combine, amid concrete situations when exposed to or taking risk, remains an important task to improve individual and institutional ways of dealing with risk and uncertainty. These indeed respond to major social norms of rationality (Green, 2009), follow milieu-specific practices (Bourdieu, 1977) and find individual responses using culturally available patterns or through inventing new ones (Lash, 2000).

Emotions are involved in most if not all decisions and social practices (Damasio, 1996; Reckwitz, 2002) but I argue that emotions are not always the driving element of an activity but rather accompany, complement or are the desired outcome of strategies such as rationality, trust, hope or faith. For example, in the context of terminal illness, hope helps to generate positive emotions rather than being a particular state which shapes decisions or strategies to overcome the gap created by missing knowledge. Therefore, I suggested that the typology (see Table 1) identifies emotions as a strategy *in-between*, but only when emotions become a central logic for a risk-related activity rather than a supporting element of other activities (even though this distinction might not always be easy to make). Examples are *gut-feelings* that inform individuals' intuitive risk-taking or

the fear of using the underground after the London Bombings which influenced many individuals to use other 'risky' modes of transport.

It is important to see social emotions and related individual experiences not as separate spheres but as mutually constituting one another. People refer to cultural models and institutional expectations which shape their experience. At the same time, they negotiate and challenge such expectations. Indeed, experiences build and change during the life course. This can be illustrated by the following excerpts from an interview study with British ex-soldiers (Zinn, 2012a). Both informants described how they dealt with emotions, referring to biographical experiences and, at least implicitly, referring to institutional and cultural expectations. The first example illustrates a discourse of emotional control following a dichotomist division between reason and emotion. Jo (pseudonym for interviewee of first case study) reflected on his experience of learning to kill. He described the way in which soldier were required:

> to control adrenaline, to control emotions. When you shoot or you take a shot, take three breathes, first, second, third. The third you squeeze back on the trigger, eye, rear sight, foresight, target, yeah? And by the time the round has hit the target then you can breathe your third breath out and that's it. It doesn't matter how excited I can get about something. I'll still have a 48 to a 43 [pulse] depending on what I'm doing. We switch off our emotions. Our target isn't a human being anymore, it's just a target. All it is, is a piece of paper with a photograph on it. That photograph might be walking across, yeah, and that photograph's gone, end of story. (Zinn, 2012a: 4)

However, not all of the soldiers in study referred to this discourse of the separation of cognitive control and emotion and to having to push their emotions aside to fulfil their task. Albert, another soldier in my study talked about a different approach while still dealing with emotions in a reasonable way. Albert explained how he reflected on a Corporal's advice regarding his anxieties before a fight in competitive boxing. Albert used this example to illustrate a general principle to be used in battle as well:

> I can remember my corporal saying to me this … I boxed when I was in the Marines. I did 37 fights and I won the Inter-Championship in the Marines … and I was never defeated so I was pretty good at this. But I always shook every time. I could never stop my knees and my legs from shaking. … I was shit scared and my Corporal just kept saying to me this is the same with any man. If they hide it, they hide it better. Pick your first three blows, it doesn't matter if they don't work, by the time you're hit you'll be angry enough to fight back, and he was so right. And I used that in battle with all my men. There's nothing wrong with shaking, it will give you clarity. (Zinn, 2012a: 4)

In contrast to Jo, Albert talked about how important it was for him to integrate emotions and reason. Albert always 'trusted his emotions' and he explained:

> If something made me angry it made me angry, it was wrong and it needed to be fought against and that's what I did. (Zinn, 2012a: 4)

Both participants reflected on their emotions. Jo presented himself as being not only in control of his emotions but also separating them from the reasoning necessary to fulfil his task as a soldier. In doing so, his emotions did not provide valuable guidance for his job. In contrast, Albert framed his dealing with emotions in a broader context. He acknowledged his emotions as a normal part of his existence to be accepted and managed. For him emotions occurred and made sense. Being scared was a common response to being

exposed to dangerous situations. He trusted his emotions beyond the military context in everyday life more generally. As with many other soldiers he used his feelings as guidance and a way of linking him to social reality. He also used his emotions reflexively as a resource to perform well in risky situations.

These were only two ways, among many, in which the soldiers in my study referred to emotions. They demonstrate that when people deal with institutional expectations and conduct *emotional labour* (Hochschild, 1983) they find solutions that are often biographically mediated (Zinn, 2012a) and are embedded in new social routines or practices (Shove et al., 2012) and therefore comparatively stable. Emotions are linked to many other concepts, such as hope which a number of recent studies have focused upon and which I will discuss in more detail in the next section.

Active, passive and reflexive hope

In recent years, there has been a growing interest in issues of hope, as often related to risk, especially within anthropology and health sociology (see Brown et al., 2015; De Graaf, 2016; Petersen, 2015). Researchers have identified hope, together with faith and belief, as an important resource for dealing with risk and uncertainty in many social contexts and situations. These are well-known coping strategies which can have positive effects, for example, for improving healing (Ehrenreich, 2009).

However, conceptual work has distinguished between two different forms of hope – or faith, respectively – with different characteristics (see De Graaf, 2016; Petersen, 2015). Passive hope, with its clear negative connotations, can replace activity. It is evident when rather than actively engaging and changing a situation an individual only cognitively engages by hoping that things will change themselves. This contrasts with the positive notion of hope which stimulates activity. The philosopher Bloch argued in *The Principle of Hope* (originally published in German (Bloch, 1954) and subsequently published in English (Bloch, 1986)) that hope comes with a positive attitude towards the future since it is linked to desired imagined scenarios. He emphasised that this is particularly important when heading towards a not yet known better future. The vision of positive imaginary and the desire to reach it can mobilise even revolutionary activity.

Fromm also drew the distinction between active and passive hope when describing faith. He did not reduce faith to religion but saw it as a general principle which was similar to the non-rational sphere more generally. He then distinguished 'irrational faith' and 'rational faith' on the activity dimension in the following way:

> While rational faith is the result of one's own inner activeness in thought or feeling, irrational faith is submission to something given, which one accepts as true regardless of whether it is or not. The essential element of all irrational faith is its passive character, be its object an idol, a leader, or an ideology. (Fromm, 1968: 26)

The dichotomy of passive and active hope becomes more difficult to sustain when an individual has no resources to change an undesired situation (Zigon, 2009). Research on chronic and terminal illness shows how hope is mobilised to deal with a daunting future and desperately seeking for options to deal with the situation (Brown et al., 2015; Mattingly, 2006). However, passive hope might not result from lacking engagement but lacking means. In this way, hope could be a last resource that helps the individuals tolerate ongoing suffering, hoping (or praying) that the situation will change due to external forces. In this way, hope is an important positive resource to

enable individuals to keep going, in order to maintain the possibility and thereby produce relatively positive feelings rather than desperation. The negative framing of (passive) hope might be due to modern norms which assume a level of autonomy and agency that not everyone possesses.

Research on boat migration has shown how people mobilise hope, among other resources, when engaging in high-risk activities. The positive imaginary (Castoriadis, 1987) of a socially and materially successful future combines with the experience of everyday suffering in enabling those engaging in such dangerous enterprises to accept or disregard the severe risk such as injury and death associated with boat migration (Hernandez-Carretero & Carling, 2012). The young men engaging in these journeys often actively ignore information that the reality of wealth and social upward mobility will not materialise even if they successfully reaching their 'promised land'. The desire to change a situation is so intense that the focus is on mobilising all resources to make it happen and to deflect or reinterpret information which could reduce ambition and confidence. However, these young men do not rely solely on hope but other resources as well. They also reflect on the need to have faith as well as hope while preparing for the journey as well as possible.

Research into experiences of health and illness has shown how hope can help to give meaning and perspective where the reality of chronic or terminal illness might give way to desperation. Mattingly (2006; 2010) examined in a longitudinal ethnography of African-American families who have children with serious and chronic illnesses or disabilities how narratives of hope are created, maintained and revised. She showed that the *will to hope* was an important element when facing suffering as part of daily life. The parents' need for 'strength' to maintain hope and the moral obligation towards their children not to 'give up' emphasises the active and reflexive character of hope as much as the tension or oscillation between hope and desperation in the face of suffering.

A study of young people managing the transition into the labour market in Cambodia (Peou & Zinn, 2015) shows how the lack of resources encourages the mobilisation of hope. While resourceful youth presented all kinds of plans and mention influential relatives who would support them, the least resourceful did not express systematic plans and did not mention supporting networks. Instead:

> when uncertainty was perceived as contingent and the future as highly uncertain, planning was replaced by hope, and action was mainly responsive to a given situation. (Peou & Zinn, 2015: 732)

Even though these youth had no concrete plans and few resources to change their situation, they shared with others a positive attitude towards the future, hoping that the situation would somehow improve.

These examples show the value of *active* and *reflexive* forms of hope under different social conditions which might become more common in modernising societies which emphasise norms of individual responsibility and ability while fantasies and imaginaries of (easily) accessible wealth circulate globally (Hernandez-Carretero & Carling, 2012; Peou & Zinn, 2015). However, active hope and reflexive hope seem to depend at least to some degree on the resources available to the hoper. Even though risk-taking may be culturally desirable, whether building on hope leads to desired outcomes is open to debate. There is little doubt, however, that hope supports people not only to cope with daunting futures but also to take high risks to change their life.

A triangular of reasonable practices

Some readers of my original article (Zinn, 2008) criticised the rational and non-rational dichotomy, for example, arguing that *in-between* strategies are also 'rational' and the model should not reproduce the modern dichotomy but emphasise that all strategies are ecologically *rational*. However, since the notion of rationality has a wide usage in economics and a distinct meaning within the rational action paradigm (Jaeger, Renn, Rosa, & Webler, 2001), I suggest calling them all *reasonable* strategies instead. All approaches follow their own logic but conceptually I do not consider it helpful to blur the distinctions between instrumental rationality and other reasonable strategies. As already argued, instrumental rationality is indeed not always the best strategy since the conditions to make it work are not always met. Furthermore, strategies *in-between* are not lacking rationality or are a restricted form of rationality as in the case of *bounded rationality* (March, 1978). Instead, I assume that trust, intuition and emotion follow their own logics and each type of logic is distinct from the other. Therefore, instead of seeing them as a different or deviant form of rationality, I prefer to consider them all as reasonable strategies with particular strengths and weaknesses.

Similarly, hope and faith are not merely irrational but efficient strategies for dealing with particular kinds of issues or in complementing other strategies when one is dealing with risk and uncertainty. Some scholars suggested that for chronically or terminal ill patients, hope is an important resource to improve well-being and to nourish uncertainty against overwhelming evidence of harm and death (Brown et al., 2015; Mattingly, 2006). In this way even when there is 'no hope', it is reasonable to hope to deal with social reality.

Conversely, instrumental rationality which is often seen as the superior strategy might under some conditions be inefficient or socially undesirable. For example, Benjamin Franklin's advice to his son (Franklin, 1779) suggested a rationalist approach for choosing the right partner to marry. This was probably very good advice:

> I know not what to advise concerning Mr. Monthieu's Proposition. Follow your own Judgement. If you doubt, set down all the Reasons, pro & con, in opposite Columns on a Sheet of Paper, and when you have considered them two or three Days, perform an Operation similar to that in some questions of Algebra; observe what Reasons or Motives in each Column are equal in weight, one to one, one to two, two to three or the like; and when you have struck out from both Sides all the Equalities, you will see in which Column, remains the Balance. It is for want of having all the Motives for & against an important Action present in or before the Mind at the same Time, that People hesitate and change their Determinations backwards & forwards Day after Day, as different Sets of Reasons are recollected or forgot; and if they conclude & act upon the last set, it is perhaps not because those were the best, but because they happened to be present in the Mind, & the better absent. – This kind of Moral Algebra I have often practiced in important & dubious Concerns; and tho' it cannot be mathematically exact, I have found it extremely useful. – By the Way, if you do not learn it, I apprehend you will never be married.
>   (Franklin, 1779)

In the eighteenth century, this rational decision-making approach has probably made good sense. However, it is less clear whether in the contemporary global North where the notion of *romantic love* has become dominant that such rationalism is considered desirable or acceptable.

In order to prevent my typology being seen as a hierarchy and to emphasise the context-dependency of the strategies, I suggest to see them as a triangle of ideal types (see Figure 1). Indeed, in practice they combine in different ways when people deal with risk
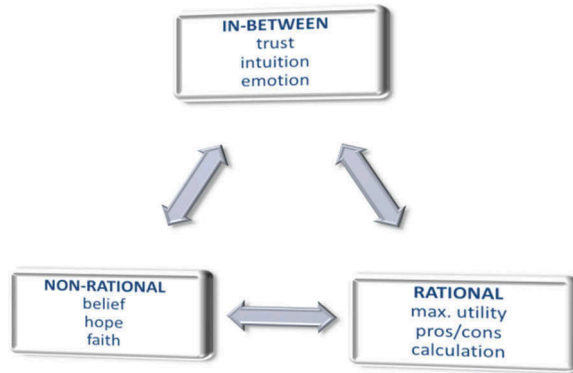
Figure 1.   Aspects of reasonably taking and managing risk and uncertainty.
Source: Author – see also: (Zinn, 2008: 442; 2018).

and uncertainty, whether or not they are experts. Such a triangular representation prevents the reading of the table in terms of a linear and gradual increase of rationality and the suggestion that one strategy is in general better than the other. Strategies are situated and how reasonable they are, depends on the particular conditions under which they are applied. Usually they complement each other in a variety of ways and help people to deal with different kinds of risk issues successfully.

As Porter (1996) has noted a blind *Trust in Numbers* can be harmful when individuals have to deal with uncertain futures and innovation. Trust can be helpful when individuals have to deal with stressful situations but it can increase vulnerability when it is misplaced or exploited. Hope and faith can be crucial sources of motivation when the future looks bleak and can also be misguiding. In this way, the triangle can be used as an analytical tool to describe a complex social reality.

How do different practices combine?

There is a growing body of research which shows how people combine different strategies when dealing with risk and uncertainty. There is good evidence that lay people and experts combine different strategies such as formalised expertise and intuitive knowledge (see Horlick-Jones, 2005; Horlick-Jones et al., 2007; Klein, 1998). Intuition might some-times come out of the blue but quite often it is a response to unconscious awareness of details which do (not) fit into a larger picture (Klein, 1998). From what might be called 'well-informed guesswork' to experience-based intuition, built over time of professional practice, the knowledge base might vary (Benner, 1984). Professional practice heavily relies on this experience when dealing with all kinds of risky tasks. Policemen when dealing with issues at a large festival have to balance whether to insist on formalised risk regulation and security measures and the risks of enforcing them (Horlick-Jones, 2005); the nurse who has to decide whether to take the risk to change the light bulb against regulations or expose the service user to risk (Sawyer, Green, Moran, & Brett, 2009); or the Captain of a firefighting crew to judge the safety when entering a burning house (Klein, 1998). Formalised procedures of good practice have to be translated into practice which to different degrees requires their interpretation and translation into specific con-text. There is no doubt, in all cases, whether one follows procedural rules or not, that

accidents will happen. Therefore, in an age of *heightened responsibilisation* (Zinn, 2012b), strategies are established to protect decision makers and organisations against allegations of negligence (Hood & Rothstein, 2001; Power, 2004). To what degree one uses experience-based expertise or strictly follows procedural rules depends on many factors. There is good evidence that efficient professional practice bases on both using formalised guidelines and if necessary override them to apply experience-based better knowledge even when this practice has to be concealed (Scamell & Stewart, 2014).

There is little doubt that emotions are involved in almost all activities, albeit in different ways. When decision makers are exposed to unexpected or high-risk situations they tend to stick to formalised rules that they cannot be made responsible when things go wrong (Vaughan, 1997). They are covered by the procedures even when everyday wisdom might have helped to prevent the worst. Empathy with the suffering of others can be as much a motivation as the anxiety to be blamed for negative outcomes. Disasters result sometimes when people stick to procedures to protect themselves rather than to act innovatively to solve an unexpected situation.

In *Voluntary Risk-taking* Lyng (2005) introduced the concept of edgework to suggest that active thrill-seeking is a strong positive driver for risk-taking. However, people engaging in edgework are usually not tired of life or reckless but careful planners, aware of the risks they take. The dependency on equipment being in perfect condition turns many into rational 'control freaks', carefully planning their edgework activity and calculating the risks involved in activities such as skydiving or B.A.S.E. jumping. Consequently the practice of edgework combines instrumental rationality, emotions and intuitive judgements in a very specific way.

When facing risk people might experience anxiety or even feel 'paralysed by fear' in ways that negatively impact upon their performance. In such cases strong confidence, or alternatively non-rational strategies, such as faith and belief, might help to stay calm to perform well in a dangerous task. Thus, rather than an expression of unreasonable assessment of real risks, such coping strategies can help to conduct a task efficiently. This might explain why professionals engaged in high-risk activities such as fighter pilots, aid workers or surgeons sometimes take resource not only in their own confidence and rational preparation but also believe in luck, fate and superstition (Bonß & Zinn, 2005).

Möllering (2006) argues that when knowledge ends, a 'leap of faith' or *trust* is required. At times where trust has become increasingly reflexive and decision based, trust cannot develop without positive experience proving trustworthiness. Trust is therefore based on more or less developed evaluations of trustworthiness which might combine artificial factors with experience. While research on *active trust* (Giddens, 1994) focused on the critical assessment of trustworthiness, other research has shown that the basis of trust and the motivation to trust varies. Researchers have started to explore how trust combines with other ways of dealing with risk and uncertainty. Brown and his colleagues (Brown et al., 2015) have argued that terminal cancer patients mobilise trust in doctors or a 'will to trust' in professional expertise to allow them to keep hope of an extended life or healing alive. From the patient's perspective, there is often an oscillation between desperation and hope observable. In such a context, when medical knowledge provides a rather daunting future, trust in a doctor, professional expertise and medical research helps to keep positive feelings and hope alive. Since positive feelings linked to hope have long been recognised as a source of support and healing, health services and doctors might encourage hoping to improve medical outcomes. However, commentators warn of a dark side to hope where 'choice' over treatment is disrupted by a willingness to maintain hopes, however unlikely (Brown et al., 2015).

Hope and positive emotions combine in a powerful way and provide people with emotional resources not only to deal with daunting future health prognoses but also to engage in high-risk illegal migration (Bastide, 2015; Hernandez-Carretero & Carling, 2012) or even revolution (Bloch, 1986). Bloch emphasises the importance of an imagined positive future state, which can form the basis of hoping and therefore a questioning and overcoming of an undesired present. In this way, hope is not only a powerful resource for initiating social change but also biographical change, in contrast to being a last resource when lacking agency or a strategy to shift responsibility.

However, as Cook (2016) has argued, hope and a re-enchantment of technology can be used to lift the burden of disastrous climate future off one's shoulders. But this does not necessarily lead to ignoring the future and the need to change behaviour in the present. Instead, in some cases hope regarding the future motivates individuals to concentrate on present-day activities, necessary for improved future prospects. This contrasts with other informants who used faith to ignore the reality of climate change and thereby to prevent undesirable perspectives to influence their present. In these latter cases no behavioural change in the present is considered.

These and other examples illustrate how people mobilise all kinds of strategies depending on availability of resources and identity/learned behaviour. A study on boat migration from Senegal showed that migrants are aware that they are taking high risk when engaging in the journey. For a number of reasons they have decided that they have to undertake the journey. They mobilise all kinds of cognitive and practical resources to cope with the risks and uncertainties (Hernandez-Carretero & Carling, 2012) such as faith in God and acceptance of predetermined fate, a talisman to protect against evil spirits and demons, trust in an experienced fisherman, preparing for the journey with enough drinking water, food and fuel (see also Bastide, 2015). It is rarely a single resource these migrants mobilise but a range of resources through which they respond to the different sources of risk and uncertainty they are facing.

Similarly aid workers have to deal with the knowledge of increasing risks of aid work (Roth, 2015). They also mobilise resources such as intuition and tacit knowledge, faith and/or trust that they will be flown out before the situation in a country becomes too dangerous. However, there are also a small number of aid workers mobilising the belief in predetermined fate. Both examples show that when rationality does not provide sufficient reasons and sufficient confidence in the ability to control risks and uncertainties, other resources are mobilised to enable people to engage in desired activities.

Different strategies can be combined in different ways. One strategy is sometimes dominant, sometimes different strategies complement and one strategy might be used to enable another. If an individual has a strong desire to engage in a high-risk activity all available rational, in-between and non-rational strategies might be mobilised. The key question pertains to the skills and experience one needs to decide about the *appropriate* combination of strategies to use in a particular situation.

Conclusion

There is evidence that when people deal with risk and uncertainty, they do not only use instrumental rationality and 'scientific' knowledge but can also draw on a number of other strategies. These other approaches, such as hope, faith and ideology, appear 'irrational' or non-rational from a rationalist point of view but, as I argued above, are valuable resources to improve well-being, to overcome undesirable situations or more generally, to invest into a not yet emerging but imagined and desired future. From the perspective of the rationalist orthodoxy, the strategies for dealing with uncertainty can and should be divided

into rational and non-rational. Such a dichotomy misses the important space of strategies *in-between*. Strategies such as trust, intuition and emotion harness resources of tacit or experiential forms of knowledge rather than expert knowledge or scientific expertise. These are efficient ways to deal with risk and uncertainty in many contexts. Therefore, all strategies are reasonable and ideal types can be depicted as a triangle of possible approaches, which individuals combine in different ways, depending on their preferences and the decision-making situation. These everyday strategies for dealing with risk and uncertainty when heading towards the unknown are culturally and institutionally framed.

The rationalist orthodoxy has long dominated modernising societies while at the same time individuals and organisation often disregard evidence and rationality when making decisions in contexts where expectations and pressure for technological innovation are high. Re-enchantment of science (Cook, 2016) and the commodification of hope (Petersen, 2015) seem to be typical developments in societies striving to subjugate even more parts of uncertain future and inner and outer nature.

When heading towards the unknown future, any reasonable strategies may be mobilised for desired purposes. Hope or faith can be mobilised to take high risks for a better future or to cope with unknown or daunting futures. Trust in others or institutions may be used, especially when individuals have no alternatives than to trust since their own knowledge and capabilities are limited, or they just think others will do better. Intuition and emotions are further resources which shape perception and responses to risk, not so much irrationally but on the basis of preconscious knowledge or experiences. Intuition and emotions are also influenced by all kinds of other important factors such as social norms.

Such an understanding of how strategies combine is the prerequisite for improving individual and institutional management of risk and uncertainty. This includes becoming aware of when particular strategies are lacking or underdeveloped and when harmful combinations such as a focus on procedures neglect other valuable resources to approach and cope with risk and uncertainty. In this context, a critical approach that examines the social institutions and players which influence the use of such strategies for their own purposes is desirable. Even though hope, trust and other strategies can be useful resources for change and improvement, they can also be mobilised to prevent socially desirable changes. To set these strategies and their institutional and cultural shaping in context is an important research domain.

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