

## Bias and error in risk assessment and management

Hazel Kemshall

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## Foreword

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HM Inspectorate of Probation is committed to reviewing, developing and promoting the evidence base for high-quality probation and youth offending services. *Academic Insights* are aimed at all those with an interest in the evidence base. We commission leading academics to present their views on specific topics, assisting with informed debate and aiding understanding of what helps and what hinders probation and youth offending services.

This report was kindly produced by Professor Hazel Kemshall, summarising key learning for practitioners and organisations in relation to risk management. Practitioners are often required to make decisions in challenging situations with incomplete information, and it is thus important to pay attention to the potential influence of subjective biases and individual emotions and values. To minimise error and ensure that decisions are balanced, reasoned and well-evidenced, practitioners need to seek and critically appraise information, and adopt an open, honest and reflective approach. At the organisational level, senior managers need to ensure that risk policies, procedures and assessment tools are unbiased and fit for purpose, with appropriate quality assurance, monitoring and training in place, and sufficient oversight of the whole system to ensure that good practice can be maintained. Within our routine inspections, we will continue to examine both the organisational approach and the practice in individual cases so that there is a sufficient focus on keeping people safe.



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**Hazel Kemshall** is currently Professor of Community and Criminal Justice at De Montfort University. She has research interests in risk assessment and management of offenders, effective work in multi-agency public protection, and implementing effective practice with high-risk offenders. She has completed research for the Economic and Social Research Council, the Home Office, Ministry of Justice, the Scottish Government, the Risk Management Authority, and the European Union. She has over 100 publications on risk, including *Understanding Risk in Criminal Justice* (2003, Open University Press), and *Understanding the Community Management of High Risk Offenders* (2008, Open University). Her most recent book *Working With Risk* was published by Polity in 2013. She has served on the Parole Board Review Committee, and is a former Board Member of the Risk Management Authority Scotland and has chaired the Risk Management Plan Approval Committee for Orders for Lifelong Restriction. She has completed research into European information exchange systems on serious violent and sexual offenders who travel across EU borders.

**The views expressed in this publication do not necessarily reflect the policy position of HM Inspectorate of Probation.**

# 1. Introduction

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Risk has been described as the 'world's largest industry' (Adams, 1995: 31; Denney, 2005, 2009); and it has become a key feature of criminal justice systems across most of the Anglophone countries, the European Union and more recently China (Li, 2015). Whilst the extent to which we are all working within a 'risk penology' is debated (see Kemshall, 2003, 2017, for an overview), risk is a critical part of practice for those working in prisons and probation.

There has been an increased focus on the development and use of risk assessment tools, particularly from the 1990s onwards, and in recent years a growing concern with the safe management of risky persons in the community (Kemshall, 2019). Risk is also an area of significant public scrutiny, and blame is quickly attributed when risk management fails. Ensuring that risk decisions are more right than wrong, are rooted in robust evidence, and are grounded within risk assessment tools and management techniques supported by current research is essential to achieving defensible decisions. However, decision making can be undermined by key challenges to individual professional practice, most notably personal bias and subjective errors in assessment and management responses. Faulty decisions can also stem from errors in the choice and use of risk assessment tools, including failing to apply robust criteria to the selection of tools and a lack of quality assurance in the use of risk tools (Fazel and Wolf, 2018).

Finally, practice takes place within an organisational context. Practice is rooted in and bound by policies, procedures and processes and, if well-constructed, these can help to ensure safe practice. However, organisational failures in risk management are well known and have been identified in child protection failures and probation serious further incidents (Calder 2008; Craissati and Sindall, 2009; Reder et al., 1993; Kemshall, 2010; Munro, 2011; Sidebotham, Brandon and Powell, 2010).

This Academic Insights paper covers four core areas for practitioners and those organisations involved in risk management. These are:

- (i) personal bias and sources of error
- (ii) how to combat bias and error, and how to improve decision making
- (iii) selecting risk assessment tools
- (iv) ensuring that organisational processes and responses to risk management are safe.

Understanding and addressing sources of failure can improve risk practice (Kemshall, Wilkinson and Baker, 2013).

## 2. Recognising and responding to sources of error

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### 2.1 Personal bias and sources of error

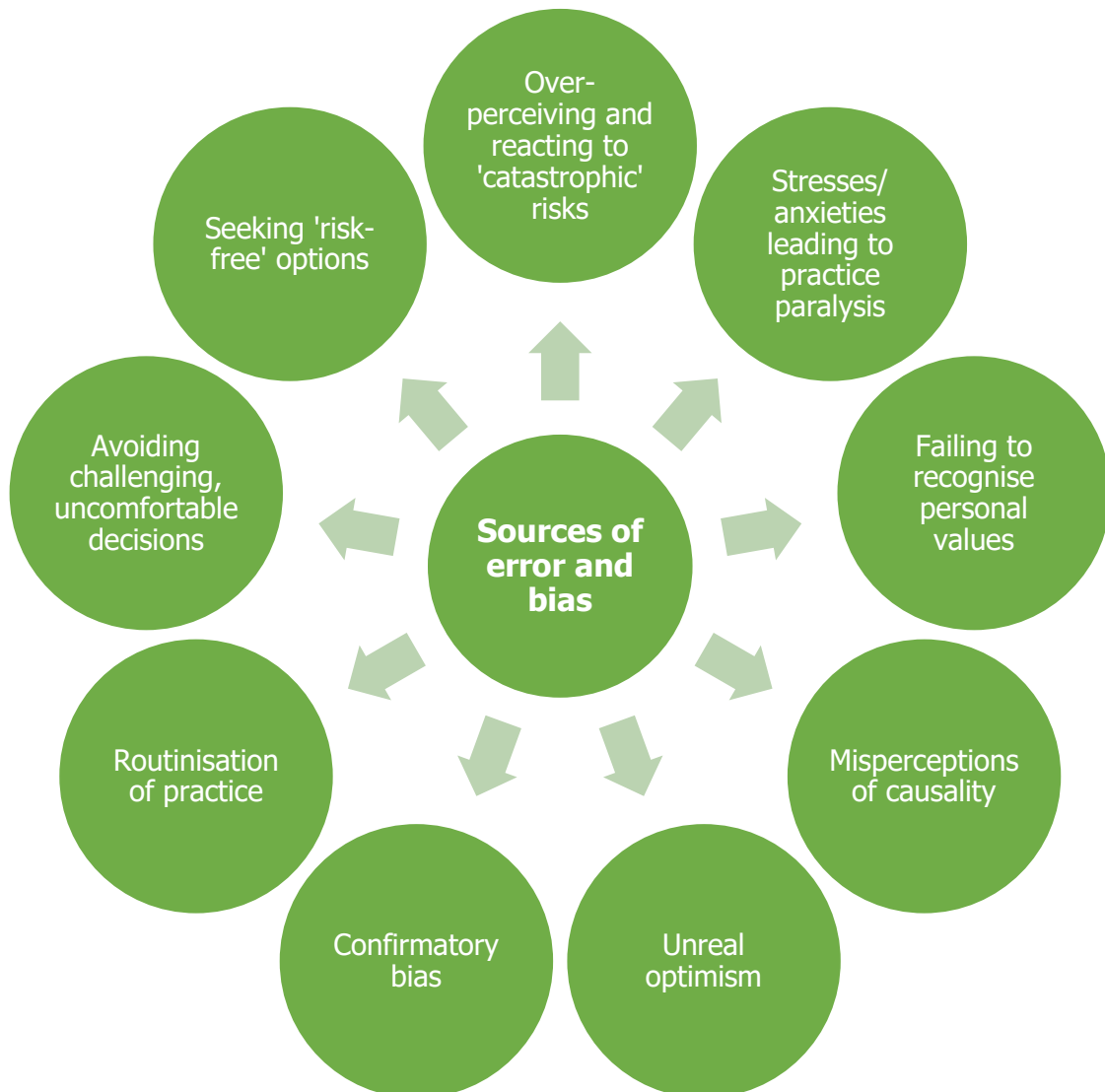
Practitioners are required to make decisions 'under conditions of uncertainty' (Webb, 2002), often in less than optimal circumstances and with less than full information. Cases are often also complex, multi-faceted, and challenging. In situations of limited time and resource, intuitive reasoning and recourse to a range of subjective biases can easily take place, sowing the seeds of potential error. A wide-ranging field of literature on risk perception has identified a number of sources of error and bias. In brief, these are<sup>1</sup>:

- Over perception and reaction to vivid and 'catastrophic' risks at times out of proportion to the likelihood of them happening. This can result in 'dread risks' where practitioners over-focus on the feared impact but fail to calculate the probability of the event occurring (Slovic, 2001; 2016; Slovic and Peters, 2006). This can result in mis-targeting of resources and/or over-intrusion and defensive, back-covering practice (Kemshall et al., 2013)
- 'Dread risks' can also create practitioner avoidance due to anxiety and challenge. A sense of being 'out of one's depth' (Slovic and Peters, 2006). Feelings of stress and anxiety can result in practice paralysis which can be insidious and corrosive
- Failure to recognise the personal values influencing individual practice and the role they play in both assessment and management decisions. The outcomes we see as desirable and worthy influence the choice of management strategies we employ in order to achieve case outcomes. This can be particularly acute in the balance of risks and rights, and rehabilitation and risk prevention. Being clear about our own values and desirable outcomes forms the explicit context within which such dichotomies have to be balanced (Kemshall et al., 2013; Killick and Taylor, 2020)
- Misperception of causality (Harkins, 2016). Because B follows A we tend to think A has caused B without fully analysing this and establishing the link (Dekkers and Vandenbroucke, 2013). We then focus on A as the way to prevent risk but do the wrong thing. X lost his job and then did Y, therefore employment is the risk solution. Actually, the situation can be more complex. X does Y in situations of stress or challenge because it is comforting, or re-establishes power, control and self-esteem. Therefore, any situation of stress and challenge needs avoiding, mitigating or managing, and employment is not the simple risk solution it appears in this example
- The power of '*unreal optimism*' has been much discussed in research (Munro, 2011; Parton, 1986; 2014). Practitioners tend to perceive small change for the better with greater weight than is justified by objective evidence. This can result in risk minimisation and/or a tendency to overemphasise benefits when presenting risk options
- The role of confirmatory bias has been noted in the risk perception literature, with risk assessors tending to select and weigh information that confirms initial views of risk, or which continue to confirm initial assessment (Slovic, 2016; Munro, 2011). Practitioners then fail to refine their risk assessment, and consequently risk management strategies are mis-aligned to risk

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<sup>1</sup> This list is not exhaustive, but refers to the most common (Slovic, 2016).

- Practice can become 'routinised', that is habitual and bureaucratic. In such circumstances, tasks are accomplished but risk is not mitigated, and routinisation of risk can result in an atrophy of vigilance in which practitioners become unresponsive to risk (Reason, 2009; see Ministry of Justice, 2020 *Serious Further Offence Review Joseph McCann* as an example)
- Some risk decisions are challenging – they can be uncomfortable, and a common response is to avoid such risk decisions, resulting in inaction and 'drift'. In some instances, practitioners avoid asking service users about risk, or do not adopt an investigatory stance towards actions and behaviours. This can result in risk management failures, for example because practitioners do not fully understand what is happening, or fail to respond to escalating risk (see HM Inspectorate of Probation, 2021)
- The tendency to seek 'risk-free' options in risk management practice, rather than accepting that risk management requires evidenced and robust weighing up of a number of risk options over time. Risk management always involves difficult choices between possible benefits and possible harms (Taylor, 2020a; Titterton, 2005). The key is how the balance between risk and safety is actually made and upon what evidence (see earlier [Academic Insights paper 2021/07](#) by Kemshall).



It is impossible to be free from bias. How we think about the world and consider risk is intrinsically tied up with our emotions, values and tolerance (or otherwise) of risk challenges. Learning to identify these significant sources of bias is critical for effective practice, and skills and competence can be taught and acquired (see Kemshall et al., 2013, chapter 3; Taylor, 2020b).

## 2.2 How to combat bias and error

Risk work requires 'good judgement', that is, judgement which is well informed, balanced, reasoned and critical, avoiding bias and discrimination (Kemshall et al., 2013: 43). The exercise of judgement involves 'the ways in which people integrate multiple, probabilistic, potentially conflicting cues to arrive at an understanding of the situation' (Goldstein and Hogarth, 1997: 4). This is a complex process, and involves us in recognising and managing uncertainty, and in understanding and balancing differing and potentially competing outcomes. Critically appraising information can be helpful in reducing the impact of bias and values, and in enhancing sound judgement and safer practice (Brandon et al., 2008). It is important that critical reasoning can replace first impression and certainty bias. So, for example, a simple exercise using the following checks can help (adapted from Kemshall et al., 2013: 51):

- make the first impression and the evidence it is based on explicit
- explicitly check any first impression against contrary or disconfirming views/perspectives/evidence
- make a deliberate and conscious effort to think of evidence for the opposing view
- consider whether the information disconfirms what you already believe
- consider why the information makes you uncomfortable and why you are tempted to discount it
- identify the other consequences or possible outcomes that the information requires you to consider
- identify the changes to the risk assessment and the risk management plan that the information requires you to make.

Adopting a self-critical, reflective approach to decisions is fundamental to safe risk practice. In coming to any risk decision, considering the following (adapted from: Munro, 1996, 1999; Slovic, 2016; and Kemshall et al., 2013: 57; see also: Taylor, 2020b) can also help improve decision making:

- don't overemphasise the 'vivid, concrete, emotive, first impressions, or the most recent'
- don't overlook the 'dull, abstract, statistical and old'
- know your weaknesses and review honestly your emotional investment in the case
- constructively test your views, be evidential, seek information you do not have, and be prepared to have your views challenged and tested by colleagues
- change your mind in the light of new information and evidence
- consider alternative actions and outcomes
- use management supervision and advice, and seek challenge.

All risk decisions involve choices and balance (Titterton, 2005; Taylor, 2020a). These decision choices and balancing acts always involve values, that is, values about the desirable actions to take and desirable outcomes. We are more likely to undertake tasks that fit with our value base, and we are more likely to seek the outcomes we value and desire, even if

this is done unconsciously. Our values may not be shared with the service user, or with other workers or agencies, and this in itself can be a source of mis-understanding, conflict and risk management failure. It is therefore important that we have a way to manage choices and options well, for example by assessing clearly the risks associated with any option and any mitigations required in order for the option to be acceptable (Taylor, 2020a).

Codes of practice and guidance often attempt to regularise shared values for a profession and guide decision making towards desirable options and outcomes. This approach usually strengthens defensible decision making (Carson and Bain, 2008). Explicit reflection on the role of values in decision choices can prevent personal values from skewing our view of the range of options and outcomes genuinely available, and enable practitioners to fully consider the most optimal risk management strategy (Campbell and Taylor, 2020). The following considerations are recommended (taken from Kemshall et al., 2013: 61):

- how did values influence how you perceived the potential outcomes of the risk?
- how did values influence how you weighed up the decision choices open to you?
- which of these values were personal?
- which of these values would a body of responsible professional peers recognise as reasonable and applicable?
- what consultation with colleagues or managers did you undertake or should have undertaken?

### 2.3 Risk assessment tools – ensuring appropriate tool selection

Risk assessment tools have a long history, starting in the 16<sup>th</sup> century alongside the rise in trade and shipping. Actuarial tables have their early beginnings in probability calculations of lost cargo and shipwrecks during this period, and Lloyds of London is rooted in this history (Kemshall, 2003). The 20<sup>th</sup> century saw an increase in formal risk assessment tools, and in criminal justice the early origins of risk tools and probability scores began with the Burgess parole predictor in 1928 (Burgess, 1929). The 1990s onwards saw increasing use and sophistication of tools, including:

- those which calculated probability scores of reconviction (e.g. OGRS, Copas and Marshall, 1998)
- those which aimed to structure professional judgement onto the right risk factors with the dual function of both aiding assessment and also guiding risk management planning and interventions (Andrews, Bonta and Wormith, 2004, 2006).

By the early 21<sup>st</sup> century, focus had turned to combined tools (see [evidence summary](#)), and to the development of key criteria for choosing a risk assessment tool (McIvor and Kemshall, 2002). These criteria have been refined in the intervening years (Serin, 2015; Serin and Lowenkamp, 2015), with research literature identifying the following as **essential** features of a risk assessment tool:

- validated for use against a relevant population
- the risk factors used in the tool should have a proven track record of reliability and predictability
- it should be able to differentiate between low, medium and high risk
- it should have good inter-user reliability (consistency across raters/assessors)
- it should assist workers to make relevant risk management plans
- it should be non-discriminatory.

The following can also be understood as **desirable** features of a risk assessment tool (McIvor and Kemshall, 2002: p. 51; see also: Moore, 2015):

- user friendly
- resource lean
- 'easy' to train staff to use appropriately
- the process of use is transparent and accountable (particularly important in those cases where assessment decisions are subsequently challenged).

The Risk Management Authority in Scotland have produced a document 'rating' risk assessment tools against these criteria, both for general and specialist tools. RATED (RMA, 2019) provides an important guide to criminal justice practitioners for choosing and applying tools. The use of RATED or other well-evidenced selection criteria helps to ensure that risk tool selection is unbiased and fit for purpose. Structural sources of bias must also be considered. Risk assessment, particularly actuarial assessment, has been critiqued on the grounds that existing inequalities of race and gender can be compounded, with particular groups profiled for interventions and attention (Fitzgibbon, 2007; Hannah-Moffat and O'Malley, 2007; Harcourt, 2007; Laing and Noaks, 2002). The use of aggregated data, often based upon white males, can contribute to lack of specificity for certain groups. Recent years have seen an increase in the number of specific tools designed to achieve a greater fit with those groups to whom they are applied (RMA, 2019).

## **2.4 Ensuring that organisational processes and responses are safe**

Risk failures can be located in systems, procedures and policies, that is at the organisational level, as well as at the level of individual error. It is important that this source of error is not ignored, and that appropriate action is taken if required.

### **Dangerous organisations**

Risk management failures, principally in child protection and other areas of social work but also including criminal justice (HM Inspectorate of Probation, 2006; Munro, 2011; Reder and Duncan, 2004; Sheppard, 1996; Sinclair and Bullock, 2002; Stanley and Manthorpe, 2004), have led to some academics arguing that organisations themselves can be dangerous (Calder, 2008, 2011). Such organisations contribute to risk management failure through unsound policies and procedures, poor oversight and supervision of staff, and lack of quality assurance for critical decision making. In addition, dangerous organisations can also have a negative and unhelpful value base, with a tendency towards over-precaution in decision making and a blame culture when failures occur (Brandon et al., 2009; Sidebotham et al., 2010). Blame cultures can inhibit learning and consequently errors can recur (Brandon et al., 2009; Stanley and Manthorpe, 2004).

### **Improving organisational responses to risk**

Effective risk systems are likely to produce the most effective practice (Calder, 2011). However, such systems require action; they do not occur of their own accord. In particular, senior managers need to ensure that: risk policies and procedures are fit for purpose; risk practice is appropriately quality assured and monitored; and there is sufficient oversight of the whole system to ensure that good practice can be maintained. Importantly, risk policies should state clearly the underpinning values and required practice standards, and where possible the minimum competencies for staff, ongoing training requirements, review procedures, and management oversight responsibilities (Carson and Bain, 2008; Titterton,

2005: 69-71). A simple review at senior management level can be helpful in establishing fitness for purpose (Kemshall et al., 2013: 134):

- does your risk policy have a clear statement of aims and objectives?
- is the underpinning value-base of the risk policy clear?
- does it clearly allocate roles and responsibilities?
- does it indicate how risk dilemmas are to be resolved and competing outcomes evaluated and balanced?
- does it state minimum staff competence, training requirements and management oversight?
- does it clearly allocate resources?
- has the policy been clearly explained to staff? If staff were asked about the policy, would they be able to explain the policy and what they are required to do?
- does the policy **un**helpfully encourage shortcuts and non-compliance from staff?

### 3. Conclusion

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Decisions about risk are often challenging and are framed by conditions of uncertainty. Subjective bias and the reliance on values, both conscious and unconscious, tend to play a part in managing both anxiety and uncertainty. 'Good judgement' has many obstacles to overcome, but it can be enhanced by a greater practitioner and organisational understanding of key biases and values in the decision-making process. Good decision making in risk work can be both taught and quality assured. At the organisational level, the selection of risk assessment tools should be underpinned by well-evidenced selection criteria. More generally, risk policies and procedures should be strengthened through carrying out a relatively simple 'fitness for purpose' test, ensuring that a slide into a 'dangerous organisation' is avoided.

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