

Biases in supervision: what are they and how can we deal with them?

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Biases in supervision: what are they and how can we deal with them?¹

'The capacity of the human mind for formulating and solving complex problems is very small compared to the size of the problems whose solution is required for objectively rational behavior in the real world' – Herbert A. Simon (1957)

1. This article does not necessarily reflect DNB position. This article is a translation of: R.M. Jansen en M. Aelen, 'Biases in toezicht: wat zijn het en hoe kunnen we ermee omgaan?' Tijdschrift voor Toezicht 2015-1, p. 5-22. The authors would like to thank Karina Raaijmakers, Femke de Vries and Frans de Weert for their comments on previous versions of this article. Furthermore they would like to thank Sarah Prince and Simon Prince for revisions on the English translation. Any questions or comments about this article can be sent to M.Aelen@DNB.nl.

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1. Introduction

The Turner Review into how the United Kingdom, and the rest of the world, should respond to the 2007/2008 financial crisis argued that:

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(...) the development of a greatly expanded financial sector and the rapid growth and increased complexity of the securitised model of credit intermediation was accompanied and, it was believed, made safe by the development of increasingly sophisticated mathematical techniques for the measurement and management of position taking risks.²

According to this report, financial supervisory authorities placed too much confidence in mathematical models that purported to predict how the financial sector and risks would develop. Put simply, this led supervisors to use incorrect assumptions, leaving them unable to anticipate financial risks and the consequences for the sector.

The demands placed on supervision should not be underestimated, however. Indeed, as the IMF notes, good financial supervision is intrusive, sceptical but proactive, comprehensive, adaptive and conclusive.³ The Financial Stability Board (FSB) explains that supervisory authorities 'exist for the purpose of always having a reasonably accurate assessment of the delicate balance between the risk taking of a financial institution and an appropriate level of capital available to absorb unexpected losses and intervening early when there is an imbalance'.⁴ These expectations imply that supervisory authorities are rational and predictable institutions and that they are able to make judgments and decisions in an objective,

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2. Financial Services Authority, The Turner Review: A regulatory response to the global banking crisis, London, March 2009, p. 44.
 3. IMF Staff Position Paper, The Making of Good Supervision, Learning to Say 'No' (SPN/10/08, May 2010).
 4. FSB, Intensity and Effectiveness of SIFI Supervision, Recommendations for enhanced supervision, November 2010.

consistent and decisive manner. Of course, supervisors have not always been able to fulfil these expectations and some observers doubt they will be able to do so in the future. In that respect Luyendijk writes that not enough has been done to tackle the problems in the financial sector and that nothing has changed.⁵

This study looks at why supervisory authorities may fail to see risks, underestimate risks or fail to take action to mitigate risks. This is not necessarily always due to a lack of expertise, professionalism or knowledge. Psychological processes can undermine the effectiveness of supervision without the authority being aware of this. So called biases influence the effectiveness of supervision, by having an impact on decision-making processes and judgment.

Biases are defined as the tendency for human judgments and decisions to include systematic errors due to cognitive factors rather than actual evidence.⁶ Biases influence the way in which people make judgments and therefore influence their actions. Everyone is affected by biases to a greater or lesser extent. The starting point for this study is that supervisors working at supervisory authorities are also – or, perhaps, particularly – affected by biases. Supervision is potentially less effective as a result. It is important that individual supervisors are aware of their biases (and those of their colleagues) and that they think about strategies for reducing biases so that impact of biases on the effectiveness of supervision can be minimised.

5. J. Luyendijk, *Dit kan niet waar zijn*, Amsterdam: Atlas Contact 2014.

6. This definition, which is frequently used, was derived from A. Tversky and D. Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, Science 1974, vol. 185, no. 4157, pp. 1124-1131.

For this study, we have drawn on the existing literature and on our experience as financial supervisors at De Nederlandsche Bank (DNB). That said, we believe that all internal or external supervisors may be susceptible to biases that affect how they form mental representations and make judgments and decisions.⁷ In addition to explaining the role biases play in supervision, this article makes a number of suggestions to help supervisors counter biases.

7. See, for example, M. Lückérath-Rovers on biases that affect supervisory boards: Ban de bias uit de boardroom, *Het Financieele Dagblad*, 9 May 2014.

2 Supervision

The definition of supervision as used by the Dutch government is:

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gathering information to determine whether an action or undertaking meets the prescribed requirements, using this information to make a judgment on this matter, and intervening where the information gives grounds for this.⁸

It captures three key elements. Supervision starts with the gathering of information on the sector, entities or individuals subject to supervision. Next, an opinion is formed (i.e. a judgment is made) concerning the information that has been received, obtained and processed – and an assessment is made as to whether action needs to be taken in response to, for instance, conduct that breaches standards. Keeping with this example, the supervisory authority's response will usually be to intervene, sometimes by taking enforcement action. DNB has taken these three elements of supervision and used them to define the three stages of the supervision process: (1) risk identification, (2) risk assessment and (3) risk mitigation.⁹ Intervention and enforcement come under risk mitigation.

Supervision is aimed at determining whether supervised entities comply with the rules or, alternatively, whether they exhibit behaviour that poses a threat to themselves or others. Where market supervision is concerned, the rules in question ultimately promote or monitor the operation of market forces – or, in the case of financial supervision, promote or monitor financial stability. Government interference in the form of supervision is

8. Kaderstellende Visie op Toezicht, Minder last, meer effect, The Hague 2005.

9. Focus! De vernieuwde toezichtaanpak van DNB. Amsterdam, April 2012. Available online at: www.dnb.nl/binaries/Focus_tcm46-271614.pdf.

12 justified because it is assumed that without supervision the market will fail.¹⁰ For this reason, the rules applying to the market are laid down in laws and regulations. The supervisory authority's role is to judge whether supervised entities comply with the rules and – in cases where this is found not to be the case – to decide on follow-up measures (enforcement). Making judgments and decisions is therefore one of the core activities of supervision. As a result, supervision is especially susceptible to biases.

10. A.I. Ogus, *Regulation: Legal Form and Economic Theory*, Oxford: Portland Oregon Hart Publishing 2004, p. 29. Market failures take various forms, such as monopolisation, negative externalities, information asymmetry and excessive risk-taking.

3. Biases and judgment

Put simply, a bias determines how people think about an issue, individual or situation and about how people deal with that issue, individual or situation. Biases influence how we approach matters, how we process information and how we reach decisions.

Tversky and Kahneman introduced the concept of heuristics and biases. They define heuristics as simplifying strategies that people use 'when dealing with complexity in making judgments and decisions'.¹¹ In other words, they can be considered short cuts that people use to come up with a solution to a problem quickly. Heuristics tend to provide a convenient way of dealing with complexity and act as a kind of survival mechanism. But, they can also lead to systematic biases that affect judgment and decision-making. In the process that Kahneman calls 'fast thinking', we sometimes take decisions that we would not have taken had we considered the issue in greater depth. Kahneman explains that the brain uses two systems for thought processes.¹² System One is our rapid, intuitive way of thinking (termed fast thinking), while System Two is our analytical, rational mode of thinking (slow thinking).

Kahneman uses the following experiment to illustrate the two systems:¹³

'A bat and a ball cost \$1.10. The bat costs one dollar more than the ball. How much does the ball cost?'

11. A. Tversky and D. Kahneman, Judgment under Uncertainty: Heuristics and Biases, Science, New Series 1974, vol. 185, no. 4157, pp. 1124-1131.
12. D. Kahneman, Maps of Bounded Rationality: Psychology for Behavioral Economics, The American Economic Review 2003, vol. 93, no. 5, pp. 1449-1475.
13. D. Kahneman, Thinking, Fast and Slow, Penguin Books Ltd 2012.

Most people answer quickly and intuitively that the ball costs \$0.10 (System One). The correct answer, however, is \$0.05, which people realise once they perform the calculation for themselves (System Two). This example shows how the brain tends to give rapid, intuitive answers that appear to be correct but are in fact incorrect when considered rationally.

It is possible to get round the problem of intuitive thinking in the example given above by spending more time thinking about the problem (and therefore engaging System Two). However, it is more difficult to do so in situations where judgments need to be made. There is usually subjectivity involved in making a judgment. A range of some circumstances or experiences – resulting from views about the sector that is subject to supervision or about previous incidents at specific supervised entities – can cloud the ability to make rational judgments. Personal characteristics, such as an aversion to unknown risks or a tendency to take the consequences of actions very personally, have an influence on judgment and decision-making.

Research has shown that biases are more likely to be found in judgment-based professions.¹⁴ For this reason, biases will have especially a great impact in professions with a focus on making judgments. In this context, Rachlinski explains, judges have a greater tendency to follow their intuition than engineers. The crux of Rachlinski's argument is that judges feel more comfortable when making judgments intuitively as they feel that they can defend such judgments more effectively.¹⁵ The Schiedam park murder is a

14. J.J. Rachlinski, *Judicial Psychology*, *Rechtstreeks* 2012/2, pp. 15-35.

15. J.J. Rachlinski, *Judicial Psychology*, *Rechtstreeks* 2012/2, pp. 15-35, p. 16.

good example of a situation in which Dutch judges may have been affected by this bias. The Posthumus Committee's evaluation report revealed that in this case both the police and the judicial authorities had suffered from tunnel vision when they assessed the evidence.¹⁶ This led to the probably wrongful imprisonment of an individual. In any event, the case prompted reforms at the Public Prosecution Service.¹⁷ Interestingly, a distinction can be made between different types of judges when it comes to intuitive judgments. An experiment showed that US military judges respond less intuitively than many other groups of judges. A possible explanation for this is that US military judges usually have a technical background. Moreover, the Uniform Code of Military Justice is extremely detailed.¹⁸ According to Rachlinski's reasoning, this level of detail limits opportunities for intuitive thinking to prevail. So, the risk of biases is lower if the rules and facts on which judgments have to be based become more detailed and clear.

16. F. Posthumus, Evaluatieonderzoek in de Schiedammer Parkmoord. Rapportage in opdracht van het College van procureurs-generaal, 2005, available online at www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2005/09/13/evaluatieonderzoek-in-de-schiedammer-parkmoord-rapport-posthumus.html.

17. In response to the report of the Posthumus Committee, the Minister published a letter announcing the Investigation and Prosecution Reinforcement Programme. The programme has five themes, one of which is the development of 'a culture of dissent and reflection, and permanent quality improvements'. The programme has the explicit aim of implementing dissent and preventing tunnel vision. See Parliamentary Papers (Kamerstukken II) 2005/06, 30 300 VI, no. 32, p. 3 et seq.

18. J.J. Rachlinski, *Judicial Psychology*, *Rechtstreeks* 2012/2, pp. 15-35, p. 20. Surprisingly, the study revealed that Dutch judges seemed to make judgments less intuitively than the other judges who were interviewed. According to Rachlinski, one reason for this was the difference between common law and civil law. Put briefly, the difference between the two types of legal system is that common law is based much more on case law. Judges play a greater role in creating law in common law legal systems than they do in civil law legal systems, in which statutory law prevails and judges therefore are given less opportunity to form judgments intuitively.

The degree to which individuals – and therefore supervisors too – are rational in terms of their thoughts and actions is limited.¹⁹ The concept of bounded rationality introduces limitations on the ability of individuals to process information when they have to solve problems or make decisions. These limitations relate to: (1) the risks and uncertainty of the outcome, (2) the lack of necessary information on alternatives, and (3) complexity and other limitations. Bazerman and Moore note that such limitations may prevent people from considering all possible alternatives and also make them more likely to accept the most obvious solution.²⁰

Thus, the fact that supervision is a judgment-based profession that is made more difficult by information asymmetry explains why supervisors are so susceptible to biases.²¹ There are two factors that make judgment particularly difficult in the case of supervision. First, as supervisors usually have some scope for discretion, a greater emphasis is placed on their ability to exercise judgment. Second, information asymmetry exists between the supervisory authority and its stakeholders – which creates an information gap that is difficult to bridge. Supervisors will need to decide what information they require so that they can make a judgment. This is a complex process, especially in the case of supervision that is based on principles or open standards (principles-based supervision).²² Both subjects are briefly explained in the following sections.

19. H.A. Simon, A Behavioral Model of Rational Choice, *The Quarterly Journal of Economics* 1955, vol. 69, no. 1, pp. 99-118 and H.A. Simon, *Theories of Bounded Rationality*, in: C.B. McGuire and R. Radner (eds.), *Decision and Organization*, North-Holland Publishing Company 1972, chapter 8, pp. 161-176.

20. M.H. Bazerman and D. Moore, *Judgment in Managerial Decision Making*, Wiley 2008 (7th edition), p. 5.

21. See, for example, J.J. Rachlinski, *Judicial Psychology*, *Rechtstreeks* 2012/2, pp 15-35, and see also Section 5.

22. For further information, see, for example, M. Aelen, *Beginselen van goed markttoezicht. Gedefinieerd, verklaard en uitgewerkt voor het toezicht op de financiële markten*, The Hague: Boom Juridische uitgevers 2014, p. 235 et seq. With regard to financial supervision in particular: F. de Vries, *How Can Principles-based Regulation Contribute to Good Supervision?* in: A.J. Kellerman, J. de Haan and F. de Vries (eds.), *Financial Supervision in the Twenty First Century*, Heidelberg: Springer 2013, pp. 165-185.

3.1 Information in the sphere of supervision

Supervisors depend on a range of sources for information. The first of these are supervised entities. Most of these entities are required to provide information to supervisory authorities, either on request or on a regular basis. Supervisors need to make judgments based on this information (in certain cases information obtained from other sources is also used). Supervisors are therefore largely dependent on information provided by third parties. Supervisory authorities have to contend with information asymmetry.²³ What this means is that in some situations supervisors have to make a judgment based on very little information indeed, while in other cases there may be an abundance of information that can be used. In some cases, the supervised entity has access to more information than the supervisor – which makes it difficult to assess whether conduct that breaches standards is an issue or whether an enterprise subject to supervision has excessive exposure to certain risks. Supervisors depend on the quality and reliability of the information they obtain from supervised entities and will have to verify such information as necessary. This requires the ability to interpret signs sent by the supervised entities.²⁴ Conversely, the information asymmetry between the supervisory authority and the sector sometimes takes the form of an abundance of information that makes it virtually impossible for supervisors to distil the relevant information.²⁵ Information obtained from different sources can be contradictory or provide an inaccurate or very limited view.²⁶ Nevertheless,

23. For information on supervision and information problems, see, for example, B. Baarsma, *Nederland Toezichtland – een economisch perspectief*, SEO Amsterdam, April 2005. Available at www.seo.nl/uploads/media/792_Nederland_Toezichtland_-_een_economisch_perspectief.pdf.

24. In this context, for information on adverse selection and signal theory, for example, see H. van Beusekom and K. Raaijmakers, *Improving Public Value in Regulatory Enforcement: Credible Signalling in Regulatory Relationships*, ANZSOG Occasional Paper 2011.

25. As a consequence, it has become increasingly important that supervisors are also able to work with big data. In this context, VIDE, the professional association for supervisors, held a conference on big data in November. In addition, the Market Supervision Platform will focus on this subject in 2015.

supervisors still have to make a judgment based on the information obtained and make decisions concerning possible intervention strategies.

3.2 Principles-based supervision

Since the end of the 20th century, the legal framework for market supervision has become increasingly based on principles. Such legislation consists of open standards that focus initially on the supervised entities. As the standards are open, they are, by definition, open to multiple interpretations. Principles-based legislation relies on the idea that supervised enterprises should be given the room to act in accordance with the spirit of the law, rather than the letter of the law.²⁷ This purports to encourage norm-compliant behaviour. In addition, it gives supervisors more scope for assessing whether certain behaviour is compliant or not. This scope, however, is somewhat limited: supervisors will have to justify why they made a particular judgment and will also have to state how they will explain the standard before they can intervene. This is not easy in practice, particularly when the supervisor considers the situation harmful or potentially harmful.²⁸

26. Ten Heuvelhof and Stout argued that the information asymmetry between a supervisory authority and the market encourages strategic behaviour on the part of supervised entities. E.F. ten Heuvelhof and H.D. Stout, *Strategisch gedrag in netwerksectoren*, *TVT* 2010, no. 2, pp. 26-38.

27. For example R.K. Pijpers, *Wet- en regelgeving: kader, maar ook keurslijf*, in: M. Jurgens and R. Stijnen (ed.), *Compliance in het financieel toezichtrecht*, Deventer: Kluwer 2008, pp. 21-35, p. 29.

28. F. de Vries, *How Can Principles-based Regulation Contribute to Good Supervision*, in: A.J. Kellerman, J. de Haan and F. de Vries (ed.), *Financial Supervision in the Twenty First Century*, Heidelberg: Springer 2013, pp. 165-185, p. 166, and M. Aelen and M. van den Broek, *De dubbele rol van het recht bij de effectiviteit van het financieel toezicht*, *Tijdschrift voor Financieel Recht* 2014-1, pp. 12-22.

The highly-regulated financial sector is governed by a great many laws and rules – which can be broken down into open and closed standards. One of the open standards in the Dutch regulatory framework is that '[a financial institution] is to set up its operational management in a way that guarantees its operations are sound and controlled'.²⁹ Closed standards include a number of standards that have to be met before a bank is granted authorisation. For instance, there is a minimum amount of own funds that it must hold, and there is a minimum number of directors and supervisory board members that it must have.³⁰ The prohibition to pursue the business of a bank without authorisation is another example of a closed standard.³¹

Open standards and principles-based supervision place great responsibility on the judgment of supervisors. They have to ensure they clearly understand the standard, communicate the standard to the entities and enforce the standard in cases where they believe it has been breached. Supervisors must also be able to justify their judgment in court.

Both information asymmetry and the responsibility for interpreting open standards make judgment in the sphere of supervision hugely important. Biases affect this judgment – and can therefore undermine the effectiveness of supervision. The biases that we believe are of particular relevance for supervisors are discussed in the following section.

29. Section 3:17 of the Financial Supervision Act (Wet op het financieel toezicht – Wft)

30. Section 3:53(1), Section 3:15 and Section 3:19, respectively, of the Wft.

31. Set out in Section 3:2 of the Wft.

4. Relevant biases for supervisors

There are a great many biases that can affect how people make judgments and decisions. Lists of 150 to 200 different biases, ranging from the IKEA effect (a tendency that people have of placing a disproportionately high value on products they assembled themselves, regardless of the quality of the object) to stereotyping (expecting a member of a group to have certain characteristics without having actual information about that individual), can easily be found by performing an online search.³² Although the existence of various biases has been demonstrated in scientific experiments, many people are still reluctant to accept the concept. One reason for this is that the list of biases covers a rather extensive range of empirical patterns, as a result of which it is difficult to provide a clear overview of the concept or make the concept applicable in practice.³³

Lessons learned from the financial crisis however indicate what biases might play a role with regard to financial supervision. Since the 'credit crunch', a number of evaluations and parliamentary reviews into the crisis and the role of financial supervisory authorities have been held in the Netherlands and other countries. These include the Parliamentary Committee of Inquiry into the Financial System in the Netherlands, and The Turner Review in the United Kingdom.³⁴ These reviews revealed that, in the run-up to the crisis, supervisory authorities based their analyses mostly on incorrect assumptions regarding risks. We do not want to argue that failures to predict or respond to the financial crisis adequately – or indeed any other incident – are entirely attributable to irrational

32. http://en.wikipedia.org/wiki/List_of_cognitive_biases.

33. M. Hilbert, Toward a Synthesis of Cognitive Biases: How Noisy Information Processing Can Bias Human Decision Making, *Psychological Bulletin* 2012, vol. 138(2), pp. 211-237.

34. The Parliamentary Committee of Inquiry into the Financial System published two reports, 'Verloren krediet' (Parliamentary Papers (Kamerstukken II) 2009/10, 31 980, no. 4) and 'Verloren Krediet II' (Parliamentary Papers (Kamerstukken II) 2011/12, 31 980, no. 61). The first report looked primarily at the run-up to the 2008 crisis, while the second focused more on the measures taken since the crisis. FSA The Turner Review, London 2009.

behaviour and biases on the part of supervisors. That said, it does seem likely that biases have some impact on the work of financial supervisors. Specific biases may arise in each of the stages of the supervision process. Based on a study of the literature and our own experience of evaluations of supervision (including supervision case histories) at DNB, we have come up with the following list of biases that we believe are relevant for the work of financial supervisors – and probably that of other supervisory authorities, too:

| Stage of supervision process | Relevant bias | Definition |
|------------------------------|---|--|
| Risk identification | Halo effect | The tendency to ascribe positive traits to a person based on one experience or impression. ^A More recent studies have demonstrated that this bias is also relevant for organisations, brands and products. ^B |
| | Confirmation bias | The tendency to search for confirmation of ideas, perceptions or beliefs by focusing on information that supports these ideas, perceptions or beliefs and ignoring conflicting information. ^C |
| | Availability bias (more commonly known as the availability heuristic) | The tendency to estimate the likelihood or frequency of future events based on the ease with which past events or associations can be recalled. ^D |
| Risk assessment | Information bias | The tendency to seek information even when this information does not affect the decision to be made or the action to be taken. ^E |
| | Single outcome calculation | The tendency to restrict possible outcomes to the most desirable outcome as determined by shared beliefs within the organisation at the time of the decision. ^F |
| | Ambiguity aversion | The tendency to prefer known risks over unknown risks or risks where information is limited or unavailable. ^G |

| Stage of supervision process | Relevant bias | Definition |
|---|---------------------|--|
| Risk mitigation (including enforcement) | Illusion of control | The tendency of people to overestimate the likelihood of personal success compared to what objectively would be considered realistic. ⁴ |
| | Anchoring effect | The tendency to use an initial value or 'anchor' in order to determine outcomes. ¹ |
| | Impact bias | The tendency to overestimate the intensity or duration of emotional reactions to a specific future situation. ¹ |

- A E.L. Thorndike, A Constant Error in Psychological Ratings, *Journal of Applied Psychology* 1920, 4 (1), pp. 2529.
- B See, for example, L. Leuthesser, C.S. Kohli and K.R. Harich, Brand Equity: The Halo Effect Measure, *European Journal of Marketing* 1995, vol. 29, no. 4, pp. 57-66.
- C J.J. McMillan and R.A. White, Auditors' Belief Revisions and Evidence Search: The Effect of Hypothesis Frame, Confirmation Bias, and Professional Skepticism, *Accounting Review* 1993, 68 (3), pp. 443-465.
- D D. Kahneman and A. Tversky, Availability: A Heuristic for Judging Frequency and Probability, *Cognitive Psychology* 1973, vol. 5, no. 2, pp. 207-232.
- E J. Baron, *Thinking and Deciding*, New York: Cambridge University Press 2007, pp. 177-181.
- F K. Jamieson and P. Hyland, Good Intuition or Fear and Uncertainty: The Effects of Bias on Information Systems Selection Decisions, *Informing Science Journal* 2006, vol. 9.
- G J. Baron, *Thinking and Deciding*, New York: Cambridge University Press 2007 (4th edition), pp. 284-285.
- H E.J. Langer, The Illusion of Control, *Journal of Personality and Social Psychology* 1975, vol. 32, no. 2, pp. 311328.
- I A. Tversky and D. Kahneman, Judgment under Uncertainty: Heuristics and Biases, *Science*, New Series 1974, vol. 185, no. 4157, pp. 1124-1131.
- J L.J. Sanna and N. Schwarz, Integrating Temporal Biases: The Interplay of Focal Thoughts and Accessibility Experiences, *Psychological Science* 2004, 15 (7), pp. 474-481.

Below we explain the potential effect of each bias and how this effect may be observed in supervisory practice. The examples used are illustrative in nature and do not pertain to a specific case.

- **Halo effect:** this bias may lead a supervisor suffering from tunnel vision and incorrectly ascribing all kinds of positive characteristics or qualities to the enterprise or its directors based on only one positive experience. Conversely, the supervisor may be swayed by a negative experience.³⁵
- **Confirmation bias:** this can lead the supervisor listening selectively and/or not incorporating certain information provided by the entity when identifying risks and causes of problems.
- **Availability bias:** this can lead the supervisor focusing exclusively on identifying known problems and not looking for problems that are not yet known (tail risks).³⁶
- **Information bias:** in this case, a supervisor may procrastinate and decide, based on a risk estimate, to carry out further analysis and/or request additional information, instead of intervening at an entity.
- **Single outcome calculation:** in this situation, the supervisor uses one possible outcome or scenario as the starting point for assessing a risk rather than exploring different alternatives.

35. This may have happened in the aforementioned example of the Schiedam park murder. During the evaluation it came to light that a false confession had led to the wrongful conviction. Judges did not take sufficient account of the fact that 'even when there has been no unlawful, or even deliberate, attempt to make a person confess, that person may still give a false confession. All kinds of errors, some of which were made in a previous phase, were reinforced by the lack of a critical attitude and dissent (...)'. F. Posthumus, Evaluatieonderzoek in de Schiedammer Parkmoord, Rapportage in opdracht van het College van procureurs-generaal, 2005 p. 167, available online at www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2005/09/13/evaluatieonderzoek-in-de-schiedammer-parkmoord-rapport-posthumus.html.

36. N. Barberis, The Psychology of Tail Events: Progress and Challenges, *American Economic Review*, 103(3) 2013, pp. 611-616. Tail events are rare, high-impact events.

- **Ambiguity aversion:** the supervisor may have the tendency to simplify complex risks so that the risk can be understood or managed. As a result, the risk may not be assessed in sufficient depth and decision-making may not be well-founded.
- **Illusion of control:** supervisors have access to an extensive range of tools that they can use to intervene at supervised institutions. The illusion of control bias may come into play when supervisors are excessively confident about the nature and timing of the intervention but the risk is beyond their actual influence.
- **Anchoring effect:** this bias may be observed when risks are mitigated (e.g. during the process of enforcement) and when the supervisor uses a starting position as a basis for judging the progress and results achieved. This may lead the supervisor being satisfied with the progress and the results achieved when, in fact, the risk has not been mitigated adequately.
- **Impact bias:** sometimes supervisor have to take enforcement measures against an institution in order to mitigate risks. A supervisor may overidentify with the institution and overestimate the consequences of a measure for the institution. This may lead the supervisor to decide not to take any measures.

Biases can have a wide range of effects on the way in which supervisors make judgments and decisions. As explained above, biases may lead to hesitation when bold decisions need to be taken – and to excessive faith in the impact of supervision. The existing literature contains little research on this subject. That said, one effect of biases that has been written about extensively (although rarely in connection with biases) is regulatory capture.

4.1 Regulatory capture as a consequence of biases

As noted above, information asymmetry makes supervisory authorities dependent on the information they receive from supervised entities.

For this reason, supervisors will always have contact with the supervised entities. Supervisors who have intensive contacts with supervised entities may end up identifying with them. This is usually referred to as 'social identification'.³⁷ Kwak provides a logical explanation for the process:

(...) you are more favorably disposed toward someone you have shared cookies with, or at least it is harder for you to take some action that harms his or her interests. Relationships matter because we care about what other people think of us, in particular those people with whom we come into contact regularly.³⁸

People subtly modify their behaviour because it is important to them that they are liked. This is more likely to happen when people who work for a supervisory authority used to work for a supervised entity. According to Veltrop and De Haan:

(...) social identification with the financial sector does negatively affect supervisory task performance and supervisors who come from the industry are more likely to socially identify with the financial sector.³⁹

37. D. Veltrop and J. de Haan, I just cannot get you out of my head: Regulatory capture of financial sector supervisors, DNB Working Paper no. 2014-410.

38. J. Kwak, Cultural Capture and the Financial Crisis, in: D. Carpenter and D.A. Moss, Preventing Regulatory Capture. Special Interest Influence and How to Limit it, New York: Cambridge University Press 2013, p. 89.

39. D. Veltrop and J. de Haan, I Just Cannot Get You out of my Head: Regulatory Capture of Financial Sector Supervisors, DNB Working Paper no. 2014-410, p. 24.

An obvious consequence of social identification is 'regulatory capture'. 'Regulatory capture occurs when public officials instead of serving the public interest, as they are mandated to do, end up acting systemically to favor specific vested interests.'⁴⁰ For Kwak, regulatory capture is the result of 'unconscious biases that regulators become subject to'.⁴¹ These biases, which can include the halo effect and anchoring, affect the starting point used by supervisors for gathering information and making a judgment.

The existing literature often links regulatory capture to visible lobbying activities⁴² – but regulatory capture due to invisible psychological processes probably presents a greater threat for supervisors.⁴³ This is because regular contact between supervisors and supervised enterprises is inherent to the supervisory profession. In addition, sectoral supervisors in particular have an interest in recruiting employees from the sector with a view to reducing information asymmetry.⁴⁴ These individuals will more likely identify with the entities they supervise. As a consequence, the halo effect or anchoring may lead to such individuals unconsciously using different starting points when making judgments and decisions. In other words, a supervisor who has been captured by a supervised institution will make decisions that are

40. D. Veltrop and J. de Haan, I Just Cannot Get You out of my Head: Regulatory Capture of Financial Sector Supervisors, DNB Working Paper no. 2014-410, p. 5, with reference to G.J. Stigler, The Theory of Economic Regulation. The Bell Journal of Economics and Management Science, vol. 2, issue 1, p. 3–21.

41. J. Kwak, Cultural Capture and the Financial Crisis, in: D. Carpenter and D.A. Moss, Preventing Regulatory Capture. Special Interest Influence and How to Limit it, New York: Cambridge University Press 2013, p. 98.

42. See for extensive examples on amongst others the oil industry and motor trucking industry G.J. Stigler, The Theory of Economic Regulation. The Bell Journal of Economics and Management Science, vol. 2, issue 1, p. 3–21.

43. See also M. Aelen, Beginselen van goed markttoezicht. Gedefinieerd, verklaard en uitgewerkt voor het toezicht op de financiële markten, The Hague: Boom Juridische uitgevers 2014, p. 117.

44. D. Veltrop and J. de Haan, I Just Cannot Get You out of my Head: Regulatory Capture of Financial Sector Supervisors, DNB Working Paper no. 2014-410, p. 4.

different from those made by an individual who does not suffer from biases to the same extent.

Finally, regulatory capture can also give rise to other biases, such as the impact bias. Supervisors who overidentify with an institution may view the potential failure of an institution as a personal failure – and may tend to ignore negative signals (ostrich effect⁴⁵) or avoid awkward decisions about intervening at an institution (impact bias). The message for supervisors is that regulatory capture arises imperceptibly and may occur because they feel particularly responsible for a specific entity or its supervision. There may therefore be no malice or intent involved at all. Supervisors who are favourably disposed may (and will) be easily captured.⁴⁶

45. This bias is the tendency to avoid a high-risk situation by pretending it does not exist. For the definition of this bias, see, for instance: D. Galai and O. Sade 'The 'ostrich effect' and the relationship between the liquidity and the yields of financial assets', SSRN working paper, July 2003.

46. J. Kwak, Cultural Capture and the Financial Crisis, in: D. Carpenter and D.A. Moss, Preventing Regulatory Capture. Special Interest Influence and How to Limit it, New York: Cambridge University Press 2013, p. 77. Kwak refers to: N. Bagley, Agency Hygiene, Texas Law Review 2010, 89, 20, pp. 1-14 and S.M. Davidoff, The Government's Elite and Regulatory Capture, Dealbook, New York Times, 11 June 2010.

5. Countering biases

We have explained thus far (1) what biases are, (2) that biases affect how supervisors make judgments and decisions, (3) which biases affect supervisors, and (4) the potential effects of biases. In this section, we consider how we can counter biases. What can supervisors do to become aware of their biases and how can they overcome these biases?

Research has demonstrated that people are better at identifying the biases of others than they are at identifying their own.⁴⁷ In fact, people have a natural tendency to ignore their own biases.⁴⁸ This leads to the disappointing conclusion that it would be an illusion to think that individuals can counter their own biases.⁴⁹ Biases are pervasive because they are part of human nature, are often hard-wired and are highly resistant to reflection.⁵⁰ To limit the influence of biases, people need help from each other. Although the amount of research that has been carried out into effective de-biasing strategies is limited, the existing literature and day-to-day practice offer a number of tools for recognising and countering biases. These tools focus on the organisation of internal dissent and ensuring sufficient diversity within the organisation. They also have at least one thing in common: countering biases means actively intervening in the process by which a judgment or decision is made.⁵¹

47. D. Kahneman, D. Lovallo and O. Sibony, *The Big Idea: Before You Make That Big Decision...*, Harvard Business Review June 2011, p. 4 and M.H. Bazerman and D. Moore, *Judgment in Managerial Decision Making*, Hoboken, Wiley 2008, pp. 195-198.

48. E. Pronin, *Perception and misperception of bias in human judgment*, Trends in Cognitive Sciences 2006-1, pp. 37-43, p. 37.

49. D. Kahneman, D. Lovallo and O. Sibony, *Before you make that big decision...*, Harvard Business Review June 2011.

50. D. Lovello and O. Sibony, *The case for behavioral strategy*, McKinsey Quarterly March 2010, p. 7.

51. Bazerman and Moore mention the process of unfreezing, change and refreezing for specifically changing behaviour. M.H. Bazerman and D. Moore, *Judgment in Managerial Decision Making*, Hoboken, Wiley 2008.

- One way of countering biases is to consider the facts from a number of different perspectives. The challenge here is to encourage supervisors to interpret facts in a variety of ways and to consider other potential explanations for those facts. This can be achieved by working with different hypotheses, by reframing the facts, by encouraging supervisors to use role reversal techniques and by introducing an element of competition in order to obtain different perspectives.⁵²
- One risk associated with biases is that some perspectives, views and/or opinions may be neglected or entirely ignored. To avoid this risk, it is important that all valid perspectives, opinions and/or judgments of supervisors, experts and other parties are to be made explicit before coming to a shared judgment.⁵³ Recent studies show that when analogies between different examples are made more explicit, this helps to counter biases that are associated with those specific examples. Another useful exercise involves consciously taking on the role of an outsider and taking a more detached view of the situation.⁵⁴ Lückcrath-Rovers mentions working with techniques in which specific teams or team members present counterarguments to a proposed decision or judgment. Essentially, divergent opinions need to be encouraged.⁵⁵
- Healthy dissent needs to be organised at all levels of the supervisory authority's organisation, including the senior level. Organising dissent at this level is crucial for countering biases. That said, biases play a role

52. D. Lovello and O. Sibony, The case for behavioral strategy, McKinsey Quarterly March 2010, p. 8.

53. D. Lovello and O. Sibony, The case for behavioral strategy, McKinsey Quarterly March 2010, p. 11.

54. M.H. Bazerman and D. Moore, Judgment in Managerial Decision Making, Hoboken, Wiley 2008, pp. 191-195.

55. M. Lückcrath-Rovers, Bouwstenen voor High Performing Boards, Tilburg University 2014, p. 24.

in hierarchical relationships, too. The term 'sunflower management' implies that at hierarchical organisations people are swayed by what they believe to be the wishes or viewpoint of executives and senior management.⁵⁶ Obviously, a phenomenon of this kind is disastrous for the implementation of dissent and the countering of biases.

- In the supervisory profession, a group of people is often involved in making judgments and decisions. This group process leads, in itself, to biases (e.g. groupthink⁵⁷), which can interfere with a careful decision-making process. This risk can be mitigated by ensuring diversity in the group, in order to enable an open debate on the judgment or decision to be made. Diversity here needs to be interpreted broadly and can include diversity based on ethnicity, background, roles, risk appetite and preferences.⁵⁸ It should be noted that there is no scientific consensus on the impact of diversity on the quality of decisions.⁵⁹ Too much diversity can actually have a negative impact on decision-making. Moreover, research shows that experience of certain problems is not, in itself, sufficient to counter biases in decision-making.⁶⁰

56. D.P. Lovallo and O. Sibony, Distortions and deceptions in strategic decisions, *McKinsey Quarterly* 2006-1, p. 23.

57. This is the tendency to ensure harmony or conformity in their beliefs or judgments within a group. This concept was introduced by I.L. Janis in his book *Victims of Groupthink: A Psychological Study of Foreign Policy Decisions*, Houghton Mifflin Company 1972.

58. D. Lovello and O. Sibony, The case for behavioral strategy, *McKinsey Quarterly* March 2010, p. 11.

59. See, for example, E. Mannix and M.A. Neale, What Differences Make a Difference? The Promise and Reality of Diverse Teams in Organizations, *Psychological Science in the Public Interest* 2005, vol. 6, no. 2, pp. 31-55. Also on this topic: R.B. Adams, J. de Haan, S. Terjesen & H. van Ees, 'Board diversity: Moving the Field Forward', *Corporate Governance: An International Review*: 2015, vol. 23 issue 2, p. 77-82.

60. M.H. Bazerman and D. Moore, *Judgment in Managerial Decision Making*, Hoboken, Wiley 2008, pp. 186-188, and J.J. Rachlinski and C.R. Farina, *Cognitive Psychology and Optimal Government Design*, Cornell Law Faculty Publications, Paper 755 (2002-1), pp. 558-560.

- As described above, some biases lead to risks being ignored or underestimated. Uncertainty about future outcomes is an important variable that supervisors tend to avoid in their judgments and decisions. In order to counter biases of this kind, it is therefore crucial that uncertainty is specifically identified as a variable. Scenario analyses, decision trees and pre-mortem sessions are useful tools that can help in this process.⁶¹ In a pre-mortem analysis, judgments are analysed before they become final or are given. In addition, a future scenario in which the project has failed is considered, and the causes that led to that failure are identified.⁶² An informed analysis of the expected outcomes should also be performed, so as to make judgments as objective as possible.⁶³
- Some biases can lead to an overly cautious approach being taken with respect to the intended outcomes of decisions. To counter this, it is important to set ambitious targets that genuinely force supervisors and supervised entities to take specific action.⁶⁴
- Finally, it is vital to evaluate judgments and decisions retrospectively. This can be done by performing a post-mortem analysis, in which questions are asked to determine the extent to which judgments and decisions have been influenced by possible biases. If evaluations of this kind are included as a standard, this will eventually provide greater insight into the biases at an organisation.

61. D. Lovello and O. Sibony, The case for behavioral strategy, McKinsey Quarterly March 2010, pp. 9-10.

62. M. Lückerath-Rovers, Bouwstenen voor High Performing Boards, Tilburg University 2014, p. 24.

63. M.H. Bazerman and D. Moore, Judgment in Managerial Decision Making, Hoboken, Wiley 2008, pp. 181-185.

64. D. Lovello and O. Sibony, The Case for Behavioral Strategy, McKinsey Quarterly March 2010, pp. 9-10.

Kahneman, Lovello and Sibony provide a checklist that can also help decision makers in the field of supervision to detect and counter biases. These questions are as follows:

Questions that decision makers should ask themselves

1. Is there any reason to suspect motivated errors, or errors driven by the self-interest of the recommending team?
2. Have the people making the recommendation fallen in love with it?
3. Were there dissenting opinions within the recommending team?

Questions that decision makers should ask the team making recommendations

4. Could the diagnosis of the situation be overly influenced by salient analogies?
5. Have credible alternatives been considered?
6. If you had to make this decision again in a year, what information would you want, and can you get more of it now?
7. Do you know where the numbers come from?
8. Can you see a halo effect?
9. Are the people making the recommendation overly attached to past decisions?

Questions focused on evaluating the proposal

10. Is the base case overly optimistic?
11. Is the worst case bad enough?
12. Is the recommending team overly cautious?⁶⁵

65. List of questions taken in its entirety from D. Kahneman, D. Lovallo and O. Sibony, Before you make that big decision..., Harvard Business Review June 2011.

6. Conclusion

Biases affect the way in which people think and act at all times and in all situations. They often prove useful and help people avoid mistakes or accidents, but sometimes they have a negative impact on judgments and decisions. Increasing awareness of the effect of biases in the field of supervision is important because making judgments and decisions is a key aspect of a supervisors work. It is crucial to realise that supervisors are frequently unable to recognise their own biases, let alone take action to counter them. Supervisors need each other's help to do this – and attention needs to be paid to countering biases. Although the evidence concerning effectiveness is inconclusive, it would appear that diversity in supervision teams and the organisation of dissent in the judgment and decision-making process help reduce the influence of biases in practice. In addition, various existing techniques for analysing judgment and decision-making can be applied. That said, it is important to ensure that checking for the presence of biases does not become such a standard exercise that its effect is minimised.

In this study, we have contributed to the debate on biases among supervisors and drawn attention to the importance of raising awareness of how biases affect the way in which supervisors make judgments and decisions. We would recommend that, as a first step towards dealing with biases, supervisors perform an evaluation of key case histories to check for the presence of biases in research and decision-making and that they incorporate in their organisations a culture in which decisions are challenged. Finally, we would call on the scientific community to carry out more detailed studies of the way in which supervisors are affected by biases and the effect of this on supervision.

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