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Blinded by Bias

Chapter 11 | Conclusions and Recommendations

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Conclusions and Recommendations

In the lead-up to the February 2022 full-scale invasion of Ukraine, psychological and cognitive biases played a critical role in shaping Western decision-makers' threat perceptions and subsequent responses to Russia. Policymakers across Europe and the US struggled to interpret Moscow's intentions and calibrate their responses accordingly. While the US and the UK governments were certainly clear-eyed about the possibility of a full-scale invasion, other governments, including those of France, Germany, and the Netherlands, were reluctant to recognise the severity of the threat. These different perceptions were shaped not only by their respective intelligence positions, relationship with Russia, and strategic priorities, but also by underlying biases that influenced perceptions and decisions at critical moments throughout the crisis. As a result, many policymakers discarded the likelihood of a large-scale conventional war, underestimated Ukraine's ability to resist, and were hesitant to take actions that in their view might provoke Russia and escalate the crisis.

What then explains the lack of urgency and the reluctance to respond, followed by the sudden, and quite dramatic turn around after the invasion of 24 February 2022? Policymakers found it extremely hard to envisage an event that ran counter to deeply ingrained assumptions which, it turned out, affected their perceptions and clouded their judgement. As one former senior Dutch Ministry of Foreign Affairs official succinctly put it, "*For so long in the West [...] we have lived in such relative peace on our continent. It was just beyond imagination that anyone would be so stupid.*"[1] Intelligence that contradicted these long-held assumptions was dismissed. As a German official described: "*We were inclined to ignore it.*"[2] Even in the small circle of advisers of the British Prime Minister there was doubt about Putin's real intentions. As Boris Johnson recalled: "Three of the four [..] said that Putin was bluffing."[3]

This was despite the fact that according to all salient explanations of threat credibility–including reputation based on behaviour, core interests and capabilities–warning signs had been flashing red, and policymakers had ample reason to believe the threat was real.

Based on 44 interviews with high-level officials, this study demonstrates how psychological and cognitive biases led decision-makers to dismiss these flashing warning signs of Russian invasion–they were blinded by bias. Drawing on seminal and contemporary works exploring the role of biases in decision-making, threat perception and credibility in international security, this study shows how psychological and cognitive biases influenced Western decision-makers' threat perception, leading policymakers to discard available intelligence and indicators for a credible threat against Ukraine, and informing, on balance, overall cautious responses. At the same time, decision-makers and policymakers overestimated Russia's military capability while underestimating Ukraine's ability to defend itself. This was more than just a failure of analytics, it was a failure of imagination. On the basis of the evidence presented in

1 Interview 41

2 Interview 43

3 Johnson, *Unleashed*, 534

this study, it is no exaggeration to say that policymakers were blinded by bias. This is reflective, it must be added, of a wider societal context in which national populations had a very hard time envisaging the gruesome reality of war.

Despite their clearly negative effects as demonstrated in the lead-up to the Ukrainian crisis, biases must be accepted as part and parcel of the human psychological make-up. In the words of Dominic Johnson, biases "are evolved, adaptive dispositions of human nature that were favoured by natural selection [...] Biases are not decision-making problems; they are elegant *solutions* to decision-making problems".[4] Biases are heuristic shortcuts that are inherent to human decision-making as a result of human evolution. They can, in effect, play a very useful role, as has been shown in our deep evolutionary past. Yet, in today's world, these biases also clearly have negative effects as demonstrated in the lead-up to the crisis. Biases cannot – and arguably should – not be entirely eliminated, but there are ways to address biases and to some extent mitigate their effects. For each of the seven biases found in this study, a literature review has been conducted identifying how to mitigate them. This review yielded a total of 3 general recommendations and 20 recommendations clustered by bias.

Mitigatory Measures per Bias: Recommendations

Availability Heuristic

Eliminating the availability heuristic in human perception is not only impossible but also unwise as the heuristic serves an important purpose. Yet there are a variety of measures that can be implemented to help policymakers imagine the possibility of events that do not immediately come to mind and expand the pool of scenarios they imagine. In order to overcome the availability heuristic bias, it is first and foremost essential to increase awareness of the availability bias and recognise the potential risks associated with it. Building on that, mechanisms that facilitate the consideration of hard-to-imagine scenarios need to be fostered, including through the establishment of multidisciplinary teams and dialogue with allies whose knowledge and history differ from our own national memory.

The availability heuristic bias was prevalent in German, US and French decision-making, amongst others, prior to the invasion of Ukraine. Germany interpreted the military buildup as a show of force and as an intimidation tactic, attributing it to usual activities and thus missing the actuality of the threat. Similarly, US and French policymakers viewed the situation as one of coercive diplomacy in the Minsk context. They could not imagine the possibility of war. Addressing the availability heuristic could have expanded the range of scenarios available to these policymakers, including the possibility of large-scale war in Europe.

4 Johnson, *Strategic Instincts*, 291.

1. **Implement rare-risk training and education**
   Training and education can help individuals recognise and appreciate 'rare-risks', even those that they lack personal affinity with.[5] Since individuals respond to the information available to them, the way in which information is presented is of great significance. Less-imaginable scenarios that challenge existing perceptions must be presented in a clear and systematic manner.[6] Rare-risk and imagination training helps expand the range of imaginable scenarios by increasing awareness of the less-obvious scenarios and thus ensuring that these are considered.

2. **Form multidisciplinary teams**
   Decision-making and policy teams need to include individuals with a wider range of professional, disciplinary, cultural and personal backgrounds. Involvement of a diverse array of specialists including sociologists, political psychologists, and historians, alongside professionals with experience can help mitigate the availability heuristic. Their experiences and insights will help balance against blind spots, expand the range of scenarios considered, make the group more open towards new ideas, and improve decision-making.[7] The US' Tiger Team initiative is an example of a multidisciplinary team which was tasked with thinking through possible scenarios, responses and coercive threats to guide decision-making (even if it was tasked to prepare largely for the aftermath).

3. **Engage with allies to address gaps in national experiences**
   Engaging in dialogue with allies can reveal insights and perspectives that are otherwise overlooked. For example, Eastern European policymakers arguably had a deeper understanding of Russia due to their own experiences with Russia. Here, it is important to invest in cross-national confidence-building, in an effort to create the foundations for effective and meaningful dialogue and action in times of crisis. As the German case study has shown, distrust in the Five Eyes and American intelligence apparatus weighed heavily in European states' calculations on whether or not to act. Raising awareness of un-imaginable, un-desirable and therefore un-likely alternatives improves the ability of policymakers to imagine them as a real possibility in their assessments which is facilitated through closer interaction with allies.[8]

Cognitive Dissonance

Cognitive dissonance is the consequence of dismissing key intelligence that conflicts with preexisting ideas and beliefs, resulting in the dismissal, neutralisation and reframing of important signals. By relying on belief-supporting indicators and avoiding conflicting data and insights, threat and risk perceptions become faulty and fail to capture the reality of a situation.[9] In order to mitigate this bias, reforms are needed in the decision-making environment and process, allowing conflicting information to be duly considered at all levels. Specific measures include the fostering of environments conducive to open-thought and critical thinking, adapting information reporting through the chain to prevent the automatic dismissal

5 Pachur et al., 'How Do People Judge Risks', 326.

6 Raue and Scholl, 'The Use of Heuristics in Decision Making Under Risk and Uncertainty', 170–71.

7 David Rock and Heidi Grant, 'Why Diverse Teams Are Smarter', Harvard Business Review, 4 November 2016, https://hbr.org/2016/11/why-diverse-teams-are-smarter; Dianne J. Hall and Robert A. Davis, 'Engaging Multiple Perspectives: A Value-Based Decision-Making Model', *Decision Support Systems* 43, no. 4 (2007): 1588, https://doi.org/10.1016/j.dss.2006.03.004.

8 Hall and Davis, 'Engaging Multiple Perspectives', 1588; Tversky and Kahneman, 'Judgment under Uncertainty: Heuristics and Biases', 1127.

9 Yarhi-Milo, *Knowing the Adversary*, 241.

of conflicting information, nurturing creative thinking and developing multidisciplinary intelligence products to avoid belief-confirming analyses. France, the Netherlands and Germany interpreted Russian actions through a biased lens of their own preexisting ideas and beliefs, most notably: the belief that diplomacy and compromise were still possible and the belief in *Wandel durch Handel* and *Ostpolitik* policies. Accordingly, important signals and intelligence were neutralised and the actors failed to capture the reality of the Russian threat. A structural approach to integrating critical and conflicting ideas in the decision-making process could have alleviated this cognitive bias by challenging dominant beliefs.

4. Foster an environment conducive to critical thinking

Environments must be fostered in which ideas, opinions and criticisms, especially those against a dominant political narrative or conception, are allowed and taken seriously.[10] Encouraging critical thinking and discussion will help mitigate cognitive closure and discourse failure. Inviting challenging dialogue will contribute to a more complete picture of the reality and consequences of a possible threat, especially through dialogue in diverse groups. The establishment of a 'devil's-advocacy' group, specifically tasked with challenging generally accepted ideas and beliefs, not just within intelligence organisations but also within policy departments, is one mechanism to further this and improve decision-making.[11] A devil's advocacy group can formulate policy alternatives, aiding in the mitigation of the cognitive dissonance bias by stimulating and emphasising seemingly counter-intuitive analyses. Alternatively, red-teaming or premortem analyses can further act as means to routinise and institutionalise critical thinking; yielding different imaginations of possible developments and futures, especially when the use of artificial intelligence is integrated to generate more alternative scenarios and outcomes. Additionally, establishing anonymous feedback channels may provide a safe way to flag inconsistencies and (dominant narrative) biases in intelligence products or decision-making without fear of consequences.

5. Adapt the information cycle to prevent automatic dismissal of conflicting information

To mitigate judgement bias in information processing, steps need to be taken to prevent the neutralisation and dismissal of information contradicting dominant perceptions. Ignoring conflicting information, as was the case in neutralising Five Eyes intelligence, leads to faulty threat perceptions because key signals are overlooked in favour of confirming existing beliefs. Typically, this occurs when individuals are unconsciously defending previous assessments or beliefs rather than processing conflicting information. To prevent this, information reporting can be structured in such a way that contradictory information is reported in the chain, while training can help policymakers and decision-makers to process contradictory information.[12] For instance, intelligence analysts should adapt their hypotheses to conflicting information and identify the "for" and "against" arguments for each of these hypotheses. This reasoning should be accessible to consumers in order for them to process information through their own policymaking perspective.[13] These reforms will help mitigate the cognitive dissonance bias as they would ensure that critical information is not ignored and will improve threat perception abilities.

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10 Hatlebrekke and Smith, 'Towards a New Theory of Intelligence Failure? The Impact of Cognitive Closure and Discourse Failure', 182.

11 Charles R Schwenk, 'Effects of Devil's Advocacy and Dialectical Inquiry on Decision Making: A Meta-Analysis', *Organizational Behavior and Human Decision Processes* 47, no. 1 (1990): 170–72, https://doi.org/10.1016/0749-5978(90)90051-A.

12 Tetlock, 'Theory-Driven Reasoning About Plausible Pasts and Probable Futures in World Politics', 335.

13 Richards J. Jr. Heuer, *Psychology of Intelligence Analysis* (Center for the Study of Intelligence, Central Intelligence Agency, 1999), 175.

6. **Nurture creative thinking and encourage the transmission of atypical information to decision-makers.**
   Instead of focusing training and education solely on developing high intelligence and communication skills that many organisations typically select for, the focus should be shifted to nurturing creative and novel thinking capabilities. This would create a "tolerance for ambiguity" among analysts and policy advisors, allowing them to be more open to atypical information and intelligence.[14] At its core, this will help prevent policymakers from dismissing key intelligence on the grounds of it not being in the realm of possibilities based on their own ideas and beliefs. Both groups must be trained and equipped to take advantage of controversy and challenges to preexisting understandings, thus allowing less-filtered information to reach the top decision-makers. Establishing an 'Atypical Signal Processing' unit would further support this reform.[15] On top of this, conducting strategic forecasting with undesirable alternatives will enable belief-conflicting forecasts to reach, and be considered by, policymakers, preventing strategic surprises.

Mirror Imaging

The mirror imaging bias refers to individuals projecting their own rationality and strategic thinking on their adversary, culminating in, for example, the downplaying of the possibility of war as this would be an irrational choice according to Western rationality. Mitigating the mirror imaging bias can only be achieved through the acknowledgement and dutiful consideration of other rationalities. This requires first and foremost recognition of one's own as well as one's adversary's unique rationality to accept 'irrational' outcomes, and the development of operational codes to understand an adversary's worldview.[16] It can also be helped along by the establishment of frameworks with both allies and adversaries to increase the predictability of actions. One of the products of Western rationality was the irrationality of war which, paired with the belief that Russia was seeking concessions rather than a large-scale war, impacted threat assessments and consequent actions of, among others, the US and France. Greater awareness and knowledge of Russia's strategic thinking might have prevented policymakers from projecting their own rationality onto Putin, increasing the chance of recognising the rationality of an invasion from a Russian perspective.

7. **Recognise the adversary's unique rationality to acknowledge the possibility of 'irrational' outcomes**
   It is important to avoid dismissing an adversary's actions as irrational, implying impulsivity and a lack of reasonability.[17] Instead, it should be recognised that the adversary operates under a different and unique rationality, transforming seemingly irrational decisions into realistic possibilities. By labelling an adversary as *strangely irrational*, one is also labelling the undesirable policy options available to that adversary as *impossible* based on one's own perception of what constitutes rationality and possibility; as was the case in asserting the irrationality and costly nature of war.[18] But, when the supposed 'irrationality' of another actor is conceptually understood as a 'different rationality', actions available to that actor become *possible* scenarios and therefore require being taken seriously in strategic forecasting and policy options evaluations.

14 Bar-Joseph and McDermott, 'Change the Analyst and Not the System', 128.

15 Bar-Joseph and McDermott, 'Change the Analyst and Not the System', 133.

16 Beatrice Heuser, 'Heisenberg's Uncertainty and Strategic Defence Analysis: Of Biases, (Ir)Rational Actors and Other Animals', *The RUSI Journal* 170, no. 2 (2025): 18, https://doi.org/10.1080/03071847.2025.2474304.

17 Uriel Abulof, 'The Malpractice of "Rationality" in International Relations', *Rationality and Society* 27, no. 3 (2015): 358, https://doi.org/10.1177/1043463115593144; Daniel Kahneman, *Thinking, Fast and Slow* (Farrar, Straus and Giroux, 2011), 402.

18 Bronfenbrenner, 'The Mirror Image in Soviet–American Relations: A Social Psychologist's Report', 72–74.

8. **Develop operational codes to understand adversaries' worldviews, rationalities and policy alternatives**

   The development of an operational code of an adversary can help limit the projection of one's own rationality and worldview onto another. An operational code refers to a conceptual framework of an adversary, capturing their psychology, doctrines, character, trends, beliefs, ideas and other influences on their behaviour and policy decisions. The operational code is cross-dimensional, taking into account their socio-economic, cultural, political and historical context, creating an instrument that can be used to read and predict their behaviour. Importantly, the operational code must be understood as "premises and beliefs about politics" and not misunderstood as mechanical "rules and recipes".[19] Sources for insight may include policy documents and government strategies, but may also include local films, newspapers and other cultural texts to gain a deeper insight into the adversary's way of life and way of thinking. Having access to an operational code helps to understand an adversary's rationale, worldview, interests and policy alternatives, thereby providing a more realistic and holistic understanding of adversarial objectives and actions. Through the use of operational codes, policymakers can better assess the adversary's signals and actions and help mitigate tendencies for mirror imaging. In operational codes, personal interactions should be facilitated and treated as additional sources of insight and information.[20] Personal interactions give insights into decision-making contexts and intelligence-signals, enhancing our capacity to interpret behaviour and anticipate actions.[21]

9. **Establish rationality frameworks with allies and adversaries to increase the predictability and clarity of actions**

   The establishment of rationality frameworks with allies and symbolic frameworks with adversaries can help enhance the predictability of actions and reduce uncertainty.[22] These frameworks define what does and does not constitute acceptable behaviour and make it easier to expect and comprehend how actors are likely to respond to signals and situations.[23] Adopting common conceptions of behaviour with allies will reduce misunderstanding and improve the ability to expect behaviour. With adversaries' symbolic frameworks–a grammar for communication–will help interpret their behaviour as they may provide a clearer understanding of signals and expected responses. However, an ally-based rationality framework can be exploited by adversaries, as was seen in the member-state collective defence orientation and priority of NATO.

Poliheuristic Bias

The effect of the poliheuristic bias causes decision-makers to leave politically unpalatable scenarios outside of the scope of consideration. This bias can be counterbalanced by putting all options on the table, diversifying the perspectives, and greater engagement with domestic actors to gain a comprehensive understanding of public opinion.[24] The poliheuristic

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19 Alexander L. George, *The "'Operational Code": A Neglected Approach to the Study of Political Leaders and Decision-Making*, Memorandum RM-5427-PR (RAND Corporation, 1967), 196–97, https://www.rand.org/pubs/research_memoranda/RM5427.html.

20 Yarhi-Milo, *Knowing the Adversary*, 247.

21 Yarhi-Milo, *Knowing the Adversary*, 244–45.

22 Raymond Cohen, 'Threat Perception in International Crisis', *Political Science Quarterly* 93, no. 1 (1978): 105–7, https://doi.org/10.2307/2149052.

23 Tim Sweijs and Samo Zilincik, *Cross Domain Deterrence and Hybrid Conflict*, HCSS Security (The Hague Centre for Strategic Studies, 2019), 16–23, https://hcss.nl/wp-content/uploads/2021/01/Cross-Domain-Deterrence-Final_0.pdf.

24 Mintz, 'The Decision to Attack Iraq'.

bias impacted the Netherlands' decision against providing pre-invasion support to Ukraine because of the expected domestic economic costs associated with escalation. Similarly, the pacifist culture and belief in interdependency peace-guarantees resulted in inaction in both Germany and amongst NATO analysts. Escalation, and war, were deemed politically unpalatable and thus deterred early involvement. Consideration of a broader range of policy dimensions and perspectives in decision-making might have reduced the influence of the poli-heuristic bias by offsetting the perceived costs associated with a single dominant dimension.

10. Clearly define and consider all dimensions against which policy alternatives are compared

After generating and analysing a wide range of policy options, it is important to clearly define and scope the dimensions used to assess these alternatives, especially when it comes to deeming an alternative 'unacceptable' or 'unpalatable'.[25] The adoption of a linear compensatory or dimension-based approach–referring to evaluating all policy alternatives against all dimensions–will prevent a policy alternative from being dismissed based on a single dimension.[26] While these dimensions will vary depending on the situation, they must be clearly defined in response to both domestic and international circumstances. Additionally, it is essential to assign weight to each dimension and to decide on how many dimensions a policy must fail before it is rejected.[27] The clear definition, scope, and thresholds of these dimensions shape the cost-and-benefit analyses and influence decisions at both the initial evaluation and final decision-making stages. This systematic approach will help mitigate the poliheuristic bias by ensuring that the decision-making process is transparent and consistent, preventing policy alternatives from being dismissed based only on a key policymaker's perception and assessment.

11. Diversify the perspectives that feed into decision-making to ensure a balanced assessment

A more diverse group of specialists should be involved in making assessments of the costs and benefits of policy options.[28] Involving different perspectives will balance against the 'top of the head phenomenon', which occurs when decision-making is based on few perspectives and simple thinking.[29] By diversifying the team and the dimensions used in evaluations, the poliheuristic bias is mitigated. Besides the decision-making process, engaging with diverse and alternative mind-sets–through, for example, debates, devil's advocate simulations, war gaming and joint-brainstorming–will train policymakers' thinking and reasoning skills.[30]

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25 Klaus Brummer and Kai Oppermann, 'Poliheuristic Theory and Germany's (Non-)Participation in Multinational Military Interventions. The Non-Compensatory Principle, Coalition Politics and Political Survival', *German Politics* 30, no. 1 (2021): 106–21, https://doi.org/10.1080/09644008.2019.1568992; Alex Mintz, 'Foreign Policy Decision Making in Familiar and Unfamiliar Settings: An Experimental Study of High-Ranking Military Officers', *The Journal of Conflict Resolution* 48, no. 1 (2004): 96–97.

26 Mintz, 'The Decision to Attack Iraq', 597; Mintz, 'Foreign Policy Decision Making in Familiar and Unfamiliar Settings', 98.

27 Brummer and Oppermann, 'Poliheuristic Theory and Germany's (Non-)Participation in Multinational Military Interventions. The Non-Compensatory Principle, Coalition Politics and Political Survival', 109.

28 DeRouen and Sprecher, 'Initial Crisis Reaction and Poliheuristic Theory', 57–58.

29 Oppermann, 'Delineating the Scope Conditions of the Poliheuristic Theory of Foreign Policy Decision Making', 26; Shelley E. Taylor and Susan T. Fiske, 'Salience, Attention, and Attribution: Top of the Head Phenomena', in *Advances in Experimental Social Psychology*, ed. Leonard Berkowitz, vol. 11 (Academic Press, 1978), https://doi.org/10.1016/S0065-2601(08)60009-X.

30 Richards J. Jr. Heuer, *Psychology of Intelligence Analysis* (Center for the Study of Intelligence, Central Intelligence Agency, 1999), 178, 181.

12. Engage with domestic actors to gain a better understanding of public opinion and foreign policy-flexibility

Involving a broad range of domestic actors – such as local councils, NGOs, and various businesses – in foreign policy decision-making will help ensure that policymakers at least take domestic opinion into account.[31] On top of this, by engaging with domestic actors, the range of policy options available (especially on sensitive issues) and the costs the public is willing to bear becomes clear. This will allow for more realistic and socially acceptable foreign policy decision-making, mitigating the poliheuristic bias by understanding what alternatives are politically palatable and by holding decision-makers accountable to the public. Domestic audience-oriented communication strategies are key to gaining public support. However, it must always be noted that involving public opinion in foreign policy decision-making may have the adverse effect of adopting emotional decisions, creating an international perception of inconsistency, or further risks associated with making decisions without complete information.

Representativeness Heuristic

The representativeness heuristic can, amongst other things, lead to distorted capability and risk assessments. Mitigating the representativeness heuristic involves having a better understanding of the frequency and probability of events as well as a careful consideration of cases to reduce the risk of stereotyping. Especially to the French government, the notion of a full-scale invasion was not imaginable. French capability and risk assessments were based on previous Russian operations in the Middle East and Africa. This, in combination with a weak Ukrainian capability assessment, resulted in the lack of support and aid prior to the invasion. Improved, evidence-based assessments of capabilities and probabilities might have alleviated the effects of the representativeness heuristic, reducing the risk of stereotyping Russian and Ukrainian capabilities.

13. Implement base-rate and regression analyses to improve judgements of probability

To improve decision-making, it is essential to highlight the importance of so-called base-rates or probabilities of an event occurrence.[32] In plain terms, if you'd roll a dice twice and land on a five both times, the probability (base-rate) of rolling a five a third time is again a one in six chance. These base-rates are often overshadowed by perceived trends, resulting in inaccurate expectations, for example in military capability assessments. Through a team of discipline specialists, a set of base-rates and regressions can be compiled and presented to the policymakers.[33] This approach ensures that all pivotal data is considered in evaluations, thus improving threat and capability assessments. The inclusion of base rates will reduce emphasis on confirmation bias by balancing against dominant narratives. In addition, this can also be combined with the development of a standardised bias checklist, used to ensure that policymakers consider the strengths and weaknesses of all actors and policy alternatives. As a check mechanism, this can prevent the overlooking of actors and can further ensure the evaluation of the base-rates and otherwise neglected facts.

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31 Oppermann, 'Delineating the Scope Conditions of the Poliheuristic Theory of Foreign Policy Decision Making', 27.

32 Kahneman and Frederick, 'Representativeness Revisited', 69; Philip E. Tetlock, 'Knowing the Limits of One's Knowledge', in *Expert Political Judgment: How Good Is It? How Can We Know?* (Princeton University Press, 2009), 85, https://doi.org/10.1515/9781400830312.

33 Jervis, 'Representativeness in Foreign Policy Judgments', 492.

14. Create multidisciplinary expert centres to enhance specific actor and country knowledge

The establishment of specialised country and actor expertise centres will deepen understanding of the context, capabilities and worldview of adversaries, all of which influence their policies and, in turn, shape ours.[34] These centres must involve multidisciplinary expertise, including language specialists and topic and regional experts. By providing a more multidisciplinary view, the expertise centres will help policymakers and analysts respond to all relevant factors–not just military or political considerations.[35] Moreover, these centres enable capability assessments that involve both material and immaterial factors, ensuring that policymakers' perceptions are based on a broad range of inputs.

Groupthink

Groupthink is the product of dominant narratives within bureaucracies and alliances preventing individuals from considering options that they expect to be considered outrageous by others or higher-ups in the hierarchy. Groupthink can be exacerbated when individuals perceive a (critical or dissenting) perspective as being at odds with the dominant organisational narrative. Consequently, they experience the need to self-censor potentially critical or dissenting thoughts because of the need to be considered as part of 'the group'.[36] To mitigate this bias, it is important to address hierarchical structures in decision-making and to encourage creative and critical thinking. Specific measures to accomplish this include creating non-hierarchical and multidisciplinary workgroups, encouraging creative and dissenting thoughts through a horizontal decision-making environment, removing the unanimity decision-making requirement in initial stages in the decision-making process and adopting internal mitigation mechanisms that relieve image-protection and top-down pressures. The combination of distrust in US intelligence and organisational pressures led to French and German policymakers following dominant organisational beliefs in diplomacy and compromise. Interestingly enough, in the UK the groupthink bias was internally mitigated through calls to present unfiltered policy options to the decision-makers, without omitting what is expected to be contrary to organisational beliefs and pressures. In other bureaucracies, similar efforts to reduce hierarchical pressures might have enabled dissenting views to reach higher-level decision-makers, reducing the effects of groupthink bias.

15. Create non-hierarchical multidisciplinary workgroups to foster critical thinking

Introducing small multidisciplinary discussion groups to interpret information independently, without the presence and influence of a key decision-maker or department, will serve as a step towards mitigating hierarchy-caused groupthink.[37] Discussion groups can include specialised teams, such as a devil's advocate team (responsible for challenging dominant narratives) or an operational code team (evaluating the behaviour of the actors from the perspective of the actor concerned). These groups should present their findings and proposals for broader deliberation. By initially excluding senior figures, discussions can take place in a freer and more open environment in which diverse perspectives can emerge without top-down pressures. While this approach does not fully eliminate all pressures, like in-group pressures, it does significantly reduce

34 Renz, 'Western Estimates of Russian Military Capabilities and the Invasion of Ukraine', 227–28.

35 James Hackett et al., 'If New Looks Could Kill: Russia's Military Capability in 2022', IISS, 15 February 2022, https://www.iiss.org/online-analysis/military-balance/2022/02/if-new-looks-could-kill-russias-military-capability-in-2022/; Masters and Merrow, 'How Do the Militaries of Russia and Ukraine Stack Up?'

36 Hogg and Gaffney, 'Group Processes & Intergroup Relations'.

37 Hogg and Gaffney, 'Group Processes & Intergroup Relations', 5.

the dominance of top-level leadership over the evaluation process, thus fostering critical thinking and mitigating the groupthink bias.

16. **Adopt a horizontal decision-making environment to encourage dissenting voices**
A horizontal decision-making environment can help reduce hierarchical pressures, thus allowing for open debate and the mitigation of the groupthink bias. Here, dissenting voices must be both encouraged and protected in order to prevent group conformity out of fear of repercussions.[38] Removing unanimity requirements in initial decision-making stages is one way to allow alternative viewpoints to have a greater chance of being heard and considered. This approach also reduces group polarisation, preventing extreme consensus decisions driven by in-group pressures instead of critical analysis. [39] Thus, by fostering an open, non-hierarchical and horizontal decision-making culture, decision-making will become more critical and resistant to the groupthink bias which can emerge in rigid hierarchical systems.[40]

17. **Adopt internal mitigation mechanisms to balance against image-protection and top-down pressures**
The worldview of policymakers significantly influences the decision-making process by shaping the dimensions and narratives that they prioritise. This can lead to groupthink and consequently defective processing and biased threat perceptions. To mitigate this effect, internal mechanisms must be introduced that balance against top-down influences and self-protective tendencies in policymaker groups. One way to achieve this is by actively engaging policymakers with critical and adversarial perspectives, ensuring that opposing perspectives are heard, considered and challenge the dominant narratives within the organisation.[41] Additionally, decision-making structures should incorporate face-saving mechanisms that safeguard against decision-making being based on self-protective tendencies (avoiding reputational and image damage).[42]

Self-deterrence

The self-deterrence bias refers to policymakers refraining from taking stronger action out of fear of this causing further escalation with the adversary. Central to this is the risk propensity of policymakers, their issue-framing and the desire to preserve the status quo, even in the wake of an adversary seeking to disrupt this. Thus, in an effort to mitigate the self-deterrence bias, attention must be given to risk-propensity and its effects on decision-making behaviour and on increasing actor-predictability which includes measures to foster more calculated risk-taking behaviour, attention to escalation risks and risks associated with inaction, challenges to dominant issue-framing, and the establishment of shared-expectations frameworks should be established to prevent decision-making hesitancy and to ensure that all policy alternatives aligned with the framework are given due consideration. The self-deterrence bias was reflected across the board: Germany avoided interference due to the desire to avoid legitimising Russian actions, the US over-estimated the risks associated with military support, and this culminated in a lack of support for Ukraine and the dismissing of military options

38 Tetlock et al., 'Assessing Political Group Dynamics', 418; Marlene E Turner and Anthony R Pratkanis, 'A Social Identity Maintenance Model of Groupthink', *Organizational Behavior and Human Decision Processes* 73, no. 2 (1998): 224, https://doi.org/10.1006/obhd.1998.2757.

39 Hogg and Gaffney, 'Group Processes & Intergroup Relations', 7.

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41 Badie, 'Groupthink, Iraq, and the War on Terror', 293.

42 Turner and Pratkanis, 'A Social Identity Maintenance Model of Groupthink', 224.

in Germany, France and the Netherlands. The risks of involvement and escalation were perceived as too great, resulting in self-deterrence and inaction. Awareness of one's own risk-propensity and consideration of the risks associated with inaction might have reduced the influence of self-deterrence by reducing the perceived probability and severity of escalatory dynamics.

18. Address the risk-propensity of policy and decision-makers to foster calculated risk-taking

To ensure that decisions are based on cost-benefit calculations rather than fear-driven risk avoidance, institutional low risk aversion or other influences like cultural pacifism, policy and decision-makers must first understand and acknowledge their own risk-propensity.[43] This requires first and foremost awareness, which can be achieved through stress tests, worldview assessments, and participation in decision-making scenario exercises and war gaming.[44] These exercises will allow decision-makers to practice responding to high-stress scenarios in a calculated, rather than reactionary, manner, reducing the influence of risk aversion or unnecessary risk taking. Following these assessments, risk-management frameworks should be developed to ensure the inclusion of cost-benefit appraisals guiding decision-making. These frameworks can also account for the areas in which policymakers exhibit higher levels of avoidance or risk-taking. (This process should also be extended to intelligence analysts, ensuring that intelligence products do not exclude or emphasise certain analyses based on analyst risk-propensities.) Beyond structural tests and adjustments, psychological resilience training should be introduced into training decision-making. Techniques such as stress management will allow policymakers to maintain rationality in decision-making, preventing fear-driven thinking from undermining calculated decision-making. By introducing self-awareness assessments, structured frameworks and resiliency training, decision-making becomes more resistant to the self-deterrence bias.

19. Outline escalation risks and risks of inaction to challenge worst-case scenarios

To address the self-deterrence bias among policymakers and in decision-making, it is essential to introduce checks and models to challenge worst-case scenarios and to highlight the risks of both escalation and inaction. One approach would be to model both escalation and inaction risks in intelligence products and policy memos. Another possible strategy is to engage in alternative hypothesis testing. Through alternative hypothesis testing, intelligence analysts, critics, and devil's advocacy groups should be enabled to actively challenge the worst-case scenario of the inevitable escalation perspective. By questioning what is perceived as a 'gain' or 'cost' and offering alternative perspectives on different outcomes, policymakers are provided with a broader overview of potential scenarios.[45] Additionally, escalation ladder modelling should be employed to map potential adversary responses to different policy alternatives. Such detailed models, visualising possible areas of escalation, would offer policymakers a clearer picture of potential risks and the full range of potential outcomes. Finally, bias detection measures must be integrated into the analysis process. This will ensure that intelligence products available to policymakers are not heavily influenced by biases and will provide bias checks on policymakers.

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43 Paul A. Kowert and Margaret G. Hermann, 'Who Takes Risks? Daring and Caution in Foreign Policy Making', *The Journal of Conflict Resolution* 41, no. 5 (1997): 611.

44 Jan Oliver Schwarz et al., 'Combining Scenario Planning and Business Wargaming to Better Anticipate Future Competitive Dynamics', *Futures* 105 (January 2019): 133, https://doi.org/10.1016/j.futures.2018.10.001.

45 Levy, 'Prospect Theory and International Relations', 291–92, 300.

20. Establish 'shared- expectations' to ensure all policy alternatives aligned with the common goal are considered

Mitigate the self-deterrence bias by creating clear 'shared-expectations' frameworks, at a national or multilateral level, that establish common goals.[46] These expectations and goals constitute clear objectives that policy decisions should seek to achieve, ensuring that all policy alternatives that align with these objectives are considered.[47] Additionally, this would prevent policymakers from hiding behind indecision and push them to act more decisively.

Table 4 below offers a summary of the 20 measures.

Table 4. Biases and mitigatory measures

Cognitive Bias	Description	Mitigation Measures
Availability heuristic	Policymakers had not experienced war: it was hard to imagine the possibility.	1. Implement rare-risk training and education. 2. Form multidisciplinary teams. 3. Engage with allies to address gaps in national experiences.
Cognitive dissonance	Policymakers dismissed key intelligence that conflicted with preexisting ideas and beliefs about engagement with Russia.	4. Foster an environment conducive to critical thinking. 5. Adapt the information cycle to prevent automatic dismissal of conflicting information. 6. Nurture creative thinking and encourage the transmission of atypical information to decision-makers.
Mirror imaging	Policymakers projected their own rationality and strategic thinking onto Russia: war is irrational from a Western perspective, therefore our opponent will think so too.	7. Recognise the adversary's unique rationality to acknowledge the possibility of 'irrational' outcomes. 8. Develop operational codes to understand adversaries' worldviews, rationalities and policy alternatives. 9. Establish rationality frameworks with allies and adversaries to increase the predictability and clarity of actions.
Poliheuristic bias	Policymakers preferred not to consider politically unpalatable situations that would come with high (domestic) costs.	10. Clearly define and consider the dimensions against which policy alternatives are compared. 11. Diversify the perspectives that feed into decision-making to ensure a balanced assessment. 12. Engage with domestic actors to gain a better understanding of public opinion and foreign policy-flexibility.
Representativeness heuristic	Policymakers overestimated Russia's capabilities on its recent successes in other types of conflicts and underestimated Ukrainian capabilities.	13. Implement base-rate and regression analyses to improve judgements of probability. 14. Create multidisciplinary expert centres to enhance specific actor and country knowledge.
Groupthink	Policymakers did not openly consider scenarios and options that were seen to be at odds with existing dominant narratives within organisations.	15. Create non-hierarchical multidisciplinary workgroups to foster critical thinking. 16. Adopt a horizontal decision-making environment to encourage dissenting voices. 17. Adopt internal mitigation mechanisms to balance against image-protection and top-down pressures.
Self-deterrence	Policymakers refrained from taking stronger action out of fear for further escalation by the adversary.	18. Address the risk-propensity of policy and decision-makers to foster calculated risk-taking. 19. Outline escalation risks and risks of inaction to challenge worst-case scenarios. 20. Establish 'shared-expectations' to ensure all policy alternatives aligned with the common goal are considered.

[46] Levy, 'Prospect Theory and International Relations', 295; Sweijs and Zilincik, *Cross Domain Deterrence and Hybrid Conflict*, 16,22-23.

[47] Levy, 'Prospect Theory and International Relations', 295.

Even though biases cannot, and should not, be overcome, it is essential to take the steps to mitigate their effects in pursuit of effective and conducive decision-making. It must also be acknowledged that biases cannot be understood nor mitigated in isolation. They each shape and influence each other, acting in tandem to drive perceptions, worldviews and inevitably evaluations and policy assessments.

The aforementioned 20 mitigatory measures were created in response to different actors' threat perceptions and assessments prior to the Russian invasion of Ukraine. These measures constitute a reflexive synthesis of steps that, with the advantage of hindsight, could have been taken to improve the decision-making process and outcome. They provide a foundation for both institutional and individual growth.

On top of the need to prevent inconsistencies, wrongful assessments and the need to understand what underlying assumptions shape one's own decision-making, it is equally as important to understand and contextualise the biases and worldview of both adversaries and allies. Knowing what biases influence their decision-making is a useful tool for understanding their actions and shaping one's own response accordingly: 'know thy enemy, know thyself'.

Mitigatory Measures: General Recommendations

Overall, we offer the following three recommendations:

1. Recognise and acknowledge biases through training

Greater awareness of the existence of biases, and their effects, facilitates efforts to overcome them. The effects of biases must be recognised through bias awareness and bias reduction trainings and simulations and exercises. Groups around policymakers can also be trained to respond and mitigate biases by, for example, adjusting intelligence products to also highlight atypical and critical perspectives and policy alternatives.

2. Develop operational frameworks to understand the adversary

Adversary operational frameworks need to be developed to gain a better understanding of the adversary's perspective and *modus operandi* from their own side, including through the input of more diverse, multidisciplinary teams and through cross-national dialogue with allies.

3. Foster critical thinking and consider conflicting information

Information cycles surrounding key decision-makers should include atypical information and conflicting worldviews. Structured and routinised challenges to dominant institutional narratives can complement efforts to stimulate critical thought, for example through red teaming, devil's advocate groups and reducing top-down hierarchical pressures.

Preventing future crises such as the onset of war in Ukraine may be impossible. But recognising and learning from past mistakes is not. When the next crisis inevitably emerges – and in today's world, they present themselves in quick succession – it is important to recognise and mitigate the biases that influence the perceptions and shape the decisions that are intended to keep us safe.

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