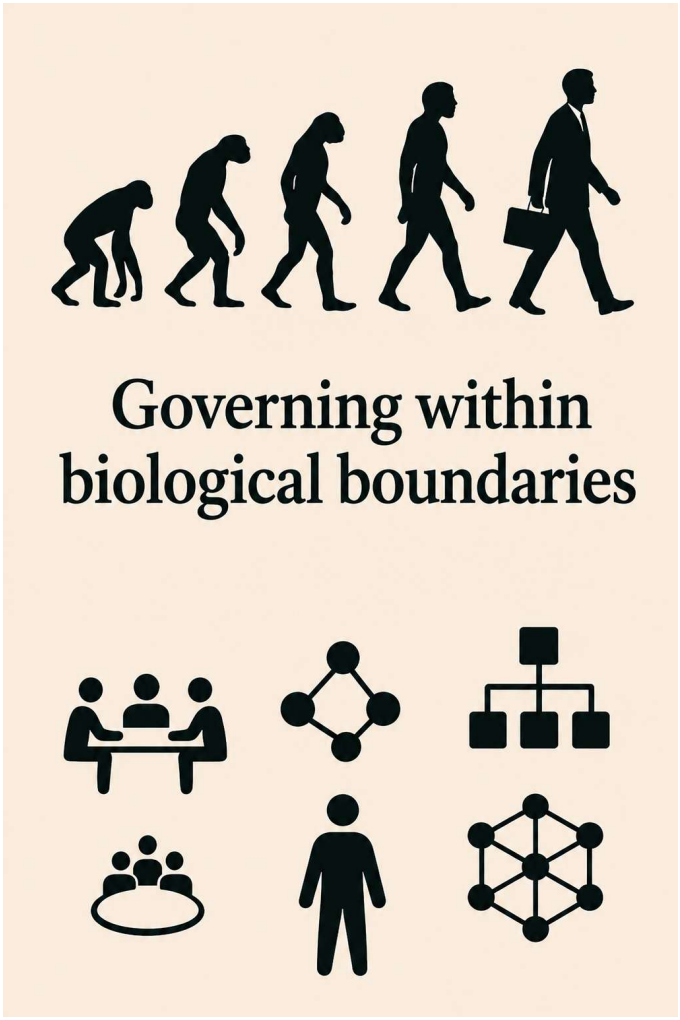
Governing within Biological Boundaries
The Role of Biological Constraints in Addressing Persistent Problems in Public Administration



Dr. R. Schimmel

Version 3.01
1th of August 2026

Abstract

This dissertation examines how evolutionary-biological constraints contribute to explaining policy outcomes in Dutch public administration. It starts from the question of the extent to which these constraints can function as an integrating factor alongside existing economic, legal and cultural explanatory models. In doing so, it seeks to illuminate a dimension of policy that often remains implicit: the influence of human nature on the acceptance and effectiveness of governmental interventions.

The theoretical part develops an analytical framework comprising ten evolutionary-biological constraints. These constraints — including sensitivity to status, territorial attachment, coalition formation and parental investment — are defined as behavioural mechanisms shaped during human evolution that may continue to influence collective decision-making and policy implementation. Within this framework, the concept of evolutionary-biological robustness (EBR) is also introduced: the extent to which policy proves sustainable because it takes account of these fundamental mechanisms.

The empirical study compares six Dutch policy cases representing three fields of societal conflict: economic redistribution (class conflict), ethnic and cultural integration (racial conflict), and gender relations (conflict between the sexes). Across these domains, evolutionary-biological constraints appeared to exert a systematic influence. Policy initiatives that disregarded such constraints — for example, threats to status in relation to executive remuneration or territorial threshold effects associated with migration — often proved less sustainable. By contrast, interventions that implicitly or explicitly acknowledged these constraints, as in shifts in norms concerning gender and power relations, displayed greater durability and effectiveness.

The synthesis of the six cases indicates that biological constraints can be understood as conditions that help determine the circumstances under which traditional policy instruments are effective. They do not replace economic, legal, religious or cultural policy instruments, but they do reveal some of their limitations. The framework of ten constraints appears to be broadly applicable, although some mechanisms emerged more clearly than others. This suggests that their relevance to policy may be understood as uneven or potentially hierarchical.

The study has several limitations. The analysis is based on a limited number of cases within a single national context, which requires caution regarding generalisability. In addition, not all constraints emerged with equal empirical prominence, raising questions about their relative weight and contextual dependence. These limitations point to the need for further research, including comparative studies in other countries and longitudinal analyses of normative change and institutional adaptation.

The dissertation contributes to theory development in public administration by showing that policy outcomes are not shaped exclusively by legal, economic or cultural factors. Evolutionary-biological constraints constitute an integrating dimension that may help explain why some policy interventions fail while others succeed. Systematically incorporating these constraints into the analysis makes possible a more robust and realistic understanding of effective governing.

Executive Summary: Governing within Biological Boundaries

Chapter 1 – Problem Definition and Research Context

The first chapter situates the study within the broader public administration literature. Explanations of policy failure have traditionally focused on economic, legal, and religious-cultural factors. These models assume that citizens rationally maximise utility, comply with rules, or subscribe to shared values. In practice, however, policies that appear internally coherent when designed along these lines often encounter unexpected and persistent resistance. Examples from Dutch public administration show that interventions which appear rationally persuasive regularly falter during implementation.

At the heart of the problem lies a missing dimension: human nature. Biological mechanisms such as status defence, territorial attachment, and group loyalty influence behaviour in ways that traditional models do not fully explain. This dissertation therefore starts from the observation that these evolutionarily shaped mechanisms may help determine policy outcomes. The resulting central question is: how can biological constraints function as an integrating factor within public administration, and what does this mean for our understanding of policy outcomes?

Chapter 2 – Theoretical Foundations

This chapter further develops the central research question — '*How can biological constraints function as an integrating factor within effective public administration, and what practical implications does this have for policy development and implementation?*' — by drawing on insights from evolutionary psychology, anthropology, and the behavioural sciences. These disciplines suggest that much human behaviour may be traced to mechanisms shaped during human evolution. Examples include tendencies towards hierarchy formation, territorial defence, loyalty to one's own group, and parents' propensity to invest in their children.

On the basis of this literature, a framework of ten biological constraints with potential relevance to policy is developed. These constraints are not conceived as rigid laws, but as structural conditions that influence the circumstances under which policy interventions are likely to succeed. The chapter also introduces the concept of evolutionary-biological robustness: policy is robust when it takes account of these fundamental behavioural mechanisms and may fail when they are disregarded or suppressed.

Chapter 3 – Theoretical Research Question 1

The first theoretical research question is: '*Which fundamental types of conflict are distinguished within public administration, how can they be classified according to biological patterns, and why are certain conflicts persistently resistant to traditional forms of regulation?*' The literature review identifies ten mechanisms that may be understood as constraints. These comprise carrying-capacity constraints, resource competition, reproductive strategies and mate selection,

territorial attachment, social hierarchy, altruism and reciprocity, parental investment, frequency dependence and environmental variability, life-history strategies, and coalition formation.

The chapter discusses the theoretical foundations of each of these constraints and the ways in which they may be identified empirically. Together, they constitute a framework that may not only deepen public administration scholarship, but also provide a basis for examining concrete policy cases.

Chapter 4 – Theoretical Research Question 2

The second theoretical research question is: '*Under what conditions do the anthropological assumptions underlying economic, legal, and religious regulatory mechanisms undermine their own effectiveness, and what role do biological constraints play in this process?*' This chapter presents ten evolutionary-biological mechanisms and uses empirical illustrations to show how they may facilitate or impede policy implementation.

It further argues that classifying and interpreting public administration problems in terms of class conflict, racial conflict, and conflict between the sexes may offer a productive analytical perspective. Although this tripartite classification is not absolute, its potential strength lies in distinguishing three arenas in which biological mechanisms may manifest themselves in different ways. Class conflict primarily concerns status and investment in children; racial conflict concerns territory and group loyalty; and conflict between the sexes concerns reproductive strategies and power relations. At the same time, the mechanisms are recognised as extending across domains: status plays a role in all three arenas, but takes a different form in each.

Chapter 5 – Theoretical Research Question 3

The third theoretical research question is: *Which biological constraints are most relevant to public administration, how can they be integrated into policy theory, and in what ways can they complement traditional regulatory mechanisms without replacing them?* This chapter develops a conceptual framework that enables biological insights to be integrated into policy theory. It formulates three theoretical conditions for such integration: structural heterogeneity, epistemic boundedness, and functional complementarity. Together, these conditions determine the circumstances under which evolutionarily informed explanations can be meaningful within public administration. The analysis shows that biological insights should not serve as alternatives to existing models, but as a plausibility filter through which economic, legal, and cultural explanations can be more effectively aligned. This produces a policy theory that does not regard human behaviour as infinitely malleable, but as embedded within biological and social constraints.

Chapter 6 – Research Design and Methodology

This chapter translates the theoretical conditions developed in Chapter 5 into a diagnostic analytical framework for the empirical study of policy processes. Six cases, distributed across the three fields of conflict — class conflict, race conflict, and sex conflict — were purposively selected because of their contentious and persistently intractable character. The approach is qualitative and abductive, and focuses on identifying patterns of policy failure associated with the neglect of biological constraints. Each case is reconstructed chronologically, after which the

cases are compared in order to identify recurring mechanisms. The analysis uses pattern matching and the triangulation of documents, policy statistics, and discourse analysis. Validity is analytical in nature: the value of the study lies in the plausibility of the patterns identified, rather than in statistical generalisation.

Chapter 7 – Class Conflict

This chapter analyses two cases within the domain of class conflict: executive remuneration and bonus regulation, on the one hand, and educational equality and parental privilege, on the other. Both cases examine why redistributive policies and meritocratic systems encounter structural resistance despite the widely shared rhetoric of equality and justice.

The first case shows how executive remuneration continued to escalate despite economic theories of optimal incentives, statutory bonus caps, and public indignation. Status competition is the central explanatory mechanism: remuneration committees systematically benchmark above peer-group averages — the so-called ratcheting effect — causing remuneration levels to rise irrespective of individual performance. Coalition formation within elite networks reinforces this pattern: non-executive directors and executives exchange roles within these networks, allowing reciprocal status affirmation to take the place of economic rationalisation. Statutory caps and say-on-pay regulation had limited effects because they did not address the underlying status logic, but merely sought to constrain its outcomes. Biologically informed alternatives that channel status competition through collective reputational mechanisms — as illustrated by Swiss and Japanese remuneration models — display greater durability.

The education case shows how equal-opportunity policies encounter parental investment as a biological mechanism. Parents systematically engage in behaviour that maximises the prospects of their own children, even where this undermines collective objectives of equality. Early-selection systems such as the Dutch system reinforce this mechanism by concentrating parental influence at an early and decisive point. Finnish and Swiss education systems, which postpone definitive selection or distribute status across multiple educational routes, appear to limit some of the opportunities for this dynamic to operate and are associated with smaller socio-economic gradients in educational outcomes.

Chapter 8 – Race Conflict

This chapter analyses two cases within the domain of identity conflict: immigration and social cohesion (Case A), and educational segregation (Case B). Both cases examine why policies intended to promote ethnic integration display systematically limited effectiveness, and what role territorial attachment and coalition formation play in this outcome.

The immigration case compares five countries — the Netherlands, Canada, France, Germany, and Sweden — which followed markedly different integration trajectories despite having broadly comparable resources and objectives. Traditional instruments — economic investment in disadvantaged neighbourhoods, legal anti-discrimination frameworks, and cultural awareness campaigns — had limited effects in all five countries on actual social cohesion and residential segregation. The biological analysis identifies three mechanisms that explain this pattern. Territorial attachment generates predictable behavioural responses once the concentration of residents with a migration background exceeds a certain threshold, irrespective of the objective liveability of the area. Coalition formation produces ethnic clustering that is

consistent across national contexts, regardless of whether official policy is based on multiculturalism or *républicanisme*. Perceptions of carrying capacity respond more strongly to the pace of demographic change than to absolute numbers, helping to explain why periods of rapid inflow generate disproportionate public unease.

The crucial difference between countries lies not in whether these mechanisms are activated — they are treated here as universal — but in the institutional response to them. Canada's proactive accommodation through a points-based system and geographical dispersal policies prevented demographic shocks capable of activating territorial defensive responses. France and Germany opted for the institutional denial of group identities, causing clustering to become less visible and more difficult to channel.

The educational segregation case analyses three Dutch cities — Amsterdam, The Hague, and Rotterdam — which implemented different dispersal measures between 2010 and 2021. Economic measures to improve the quality of so-called 'black schools', legal mechanisms involving lotteries and postcode-based allocation, and cultural awareness programmes all had minimal effects on the ethnic composition of schools. Parents engaged in systematic compensatory behaviour — including increased use of denominational and other privately governed schools, residential mobility, and parallel educational pathways — which neutralised the effects of enforced mixing.

Residential segregation influences the local pool of pupils and therefore constitutes an important condition for school segregation, but territorial attachment does not independently explain actual school-choice behaviour. Coalition formation helps explain preferences for a socially recognisable school environment, frequency dependence explains how successive choices may reinforce changes in school composition, and parental investment helps explain why parents accept substantial costs when they perceive risks to their children.

The biologically informed alternatives derived from the case — phased changes in school composition, the development of a superordinate school identity, and adaptive implementation accompanied by monitoring — should be regarded as testable design options rather than as proven solutions. The central conclusion is that integration policy must address the institutional conditions under which segregation is reproduced, rather than treating individual school choices in isolation.

Chapter 9 – Sex Conflict

Chapter 9 analyses two cases within the domain of sex conflict: the gender pay gap in the Netherlands (Case A) and the issues associated with #MeToo (Case B). Both cases examine why gender inequality and asymmetries of power persist despite decades of legal, economic, and cultural intervention.

The gender pay gap case compares three countries — the Netherlands, Iceland, and the United Kingdom — each of which adopted a different policy route. The Netherlands implemented EU Directive 2023/970 through pay transparency without substantial sanctions. Iceland operates a certification system that actively enforces equality by placing the burden of proof on the employer. The United Kingdom introduced mandatory disclosure through Gender Pay Gap

Reporting. Despite this variation, policy outcomes converged: pay differentials persist in all three countries.

The biological analysis identifies three mechanisms. Reproductive strategies and differentiated preferences explain systematic differences in risk tolerance and preferences for stability that structure choices of sector and contractual arrangement. Male norms of status competition have shaped organisational cultures that value input over output and treat continuous availability as the standard — criteria that systematically favour employees without substantial caring responsibilities. Environmental sanctions discourage assertive behaviour by women through social and professional penalties that men displaying equivalent behaviour do not encounter. Policies that merely increase transparency without addressing these three mechanisms fail to engage with the institutional architecture that sustains pay differentials. Biologically informed alternatives — output-based job evaluation, nuanced transparency that acknowledges legitimate variability, and the diversification of status through multiple dimensions of recognition — have demonstrated greater effectiveness in limited trials.

The #MeToo case analyses four countries — the Netherlands, France, Sweden, and Canada — which display systematically limited policy effectiveness despite broadly shared objectives. Legal procedures encounter structural evidential difficulties. Economic sanctions are too weak to compel organisations to adopt preventive measures. Cultural interventions achieve changes in attitudes without corresponding changes in behaviour.

The biological analysis identifies three mechanisms that operate primarily within the surrounding environment, rather than at the level of victims. Social hierarchy and status competition facilitate harassment where power is highly concentrated and the expected costs of sanctions remain low: 73 per cent of reported cases involve a perpetrator in a higher hierarchical position. Perceptual asymmetry, understood as a manifestation of reproductive strategies, generates a category of transgressions in which the perpetrator is unaware that the conduct crosses a boundary, whereas a substantial proportion of other conduct is conscious and intentional — a distinction with direct policy implications. Coalition formation protects accused individuals institutionally through implicit in-group loyalty which, in male-dominated organisations, automatically prioritises protection of the group's own members over the proper handling of complaints.

Biologically informed alternatives — the rotation of power and external oversight, explicit consent frameworks, the recording of warning signals and detection of recurring patterns, and gender-diverse decision-making teams — each address a specific mechanism at the structural level. The central conclusion is that effective policy intervenes in the architecture of power structures and coalition dynamics, rather than focusing on individual attitudes or intentions.

Chapter 10 – Synthesis

This chapter answers the central research question. The six cases suggest that the same biological constraints recur across different policy domains. Sensitivity to status, territorial attachment, coalition formation, and parental investment were found to exert a significant influence on policy outcomes.

The chapter also clarifies why the three traditional policy instruments may display limitations. Economic instruments assume that people rationally maximise utility, but may overlook the fact that relative status can carry greater weight than absolute prosperity. Legal instruments

assume that rules will be followed, but may come into conflict with group loyalty and territorial boundaries. Religious-cultural instruments assume shared values, but may overestimate the willingness to include other identities where exclusionary mechanisms predominate.

Biological constraints may therefore function as conditions that help determine when traditional instruments are or are not effective. The framework of ten constraints appears to be largely valid: some mechanisms probably operate structurally, whereas others are context-dependent or less readily observable. The three-conflict taxonomy has proved useful as an organising device, although the mechanisms frequently overlap across domains.

The conclusion is that evolutionary-biological constraints may constitute an integrating factor within public administration. They may help explain why policy fails or succeeds, depending on the extent to which they are disregarded or acknowledged. They are, however, descriptive rather than prescriptive, unlike legal, economic, or religious-cultural policy instruments, and they are certainly not deterministic: they may help explain the failure of traditional policy instruments, but such explanations remain context-dependent.

Chapter 11 – Practical Application

The final chapter translates the findings into policy practice. Here, evolutionary-biological robustness is developed as a possible criterion for assessing policy. A policy may be considered robust when it takes account of biological constraints that may be deeply embedded in human behaviour.

The EBR scan is introduced as a brief, early-stage assessment in which policymakers ask five core questions: which status positions are affected, which territorial sensitivities are at stake, which group boundaries are being redrawn, what consequences arise for children and future generations, and whether the policy affects differing preferences and priorities between the sexes, life stages, or partner dynamics. The EBR assessment develops this process further by evaluating interventions systematically against the ten constraints, formulated as Ten Commandments. The purpose is not rigid application, but to increase the likelihood that policy will prove socially sustainable.

Concluding Reflections

The dissertation demonstrates that policy should not be understood solely in legal, economic, or cultural terms, and that evolutionary-biological constraints may constitute a crucial analytical dimension. By incorporating these constraints systematically into the analysis, a more realistic and durable understanding of effective governing may be developed. The study's contribution lies in making visible a dimension that often remains implicit: the possible role of human nature. At the same time, the conclusions are explicitly qualified, and further research is recommended into the relative hierarchy of the constraints, their context-dependence, and the dynamics of normative change.

.

Table of contents:

Abstract 3

Executive Summary: Governing within Biological Boundaries 5

Chapter 1 – Problem Definition and Research Context 5

Chapter 2 – Theoretical Foundations 5

Chapter 3 – Theoretical Research Question 1 5

Chapter 4 – Theoretical Research Question 2 6

Chapter 5 – Theoretical Research Question 3 6

Chapter 6 – Research Design and Methodology 6

Chapter 7 – Class Conflict 7

Chapter 8 – Race Conflict 7

Chapter 9 – Sex Conflict 8

Chapter 10 – Synthesis 9

Chapter 11 – Practical Application 10

Concluding Reflections 10

Chapter 1: A Crisis in Contemporary Public Administration? 17

1.1 Introduction: The Paradox of Advanced Governing Techniques and Persistent Problems 17

1.2 The Role of Economic Governing Instruments 17

1.3 The Role of Legal Governing Instruments 19

1.4 The Role of Normative Governing Instruments 20

1.5 Converging Patterns: Common Causes of Policy Failure? 21

1.6 A Possible Alternative: Evolutionary-Biologically Informed Public Administration 21

1.7 Central Research Question and Sub-questions 22

Chapter 2: Biological Constraints as the Missing Link in Public Administration 24

2.1 Introduction: From Symptoms to Causal Analysis 24

2.2 Scepticism towards Biological Influences in Contemporary Public Administration 24

2.3 Defining Biological Constraints 25

2.4 Integrating Evolutionary-Biological Insights into Public Administration 26

2.5 Empirical Validation: Indicators of the Operation of Evolutionarily Informed Policy 26

2.6 Conclusion 28

Chapter 3: A Taxonomy of Conflicts in Public Administration and Their Biological Operationalisation 30

3.1 Introduction: From Fragmentation to Systematic Classification 30

3.2 The Biological Approach to Conflicts in Public Administration 30

3.3 Evaluation and Elimination of Alternative Classifications 31

3.4 The Three Fundamental Types of Conflict 32

3.5 Operationalisation through Biological Diagnosis 33
3.6 Purpose and Necessity of the Taxonomy 38
3.7 Conclusion: Answer to Theoretical Research Question TRQ1 39
Chapter 4: Deconstructing Traditional Regulatory Mechanisms 42
4.1 Answering Theoretical Research Question TRQ2 and the Corresponding Methodological Approach 42
4.2 Economic Regulation: The Calculating Individual as Myth? 42
4.3 Legal Regulation: The Rule-Following Citizen as Fiction? 43
4.4 Religious and Cultural Regulation: Shared Meaning as Illusion? 45
4.5 Limitations Arising from Competing Mechanisms 46
4.6 Neglect of Biological Constraints as a Possible Cause of Policy Failure 47
4.7 Conclusion 48
Chapter 5: From Competition between Mechanisms to Biological Accommodation 50
5.1 Introduction: Three Lenses on the Integration of Biology and Governing 50
5.2 The Lacuna: A Lack of Evolutionary-Biological Plausibility 51
5.3 Theoretical Conditions for Integration: Policy Theory in the Narrow Sense 52
5.4 Conclusion 53
Chapter 6: Research Design and Methodological Justification 56
6.1 Introduction: Methodological Challenges 56
6.2 Research Philosophy and Positioning 57
6.3 Multiple-Case Study Design 57
6.4 Data Collection 58
6.5 Analytical Framework: A Four-Stage Procedure 59
6.6 Validity and Reliability 60
6.7 Ethical Safeguards 61
6.8 Methodological Limitations 61
6.9 Reflection and Methodological Innovation 61
Chapter 7: Class Conflict — Hierarchy and Distribution 64
7.1 Introduction 64
7.2 Case A: Executive Remuneration and Bonus Culture — Evolutionary Mechanisms in Social Hierarchy 65
7.2.1 Introduction 65
7.2.2 Stage 1: Multi-Stakeholder Problem Analysis 65
7.2.3 Stage 2: Analysis of Traditional Policy Mechanisms 67
7.2.4 Stage 3: Identification of Biological Constraints 69
7.2.5 Stage 4: Evaluation of Evolutionarily Informed Policy Alternatives 71

7.2.6 Conclusion 73
7.3 Case B: Educational Equality in the Netherlands — Evolutionary-Biological Mechanisms in Meritocratic Selection 74
7.3.1 Introduction — The Dutch Meritocratic Paradox 74
7.3.2 Stage 1 — Multi-Stakeholder Problem Analysis 74
7.3.3 Stage 2 — Analysis of Traditional Mechanisms 76
7.3.4 Stage 3 — Identification of Biological Constraints 77
7.3.5 Stage 4 — Plausibility of Evolutionarily Informed Alternatives 79
7.3.5.1 Cross-National Natural Experiments — Biological Mechanisms in Different Contexts 79
7.3.5.2 Predictive Biological Hypotheses 80
7.3.5 Evolutionarily Informed Policy Options 82
7.3.6 Conclusion 83
7.4 Cross-Case Analysis: Biological Mechanisms in Class Conflict 84
Chapter 8: Race Conflict — Territory and Identity 86
8.1 Introduction 86
8.2 Case A: Immigration and Social Cohesion — Territorial Mechanisms in Integration 87
8.2.1 Introduction 87
8.2.2 Stage 1: Multi-Stakeholder Problem Analysis 87
8.2.3 Stage 2: Analysis of Traditional Regulatory Mechanisms 88
8.2.4 Stage 3: Universal Biological Mechanisms, Divergent Institutional Responses 90
8.2.5 Stage 4: Plausibility of Biologically Informed Alternatives 92
8.2.6 Conclusion 94
8.3 Case B: Educational Segregation — Territorial Mechanisms in School Choice 95
8.3.1 Introduction 95
8.3.2 Stage 1: Multi-Stakeholder Problem Analysis 96
8.3.3 Stage 2: Analysis of Traditional Regulatory Mechanisms 96
8.3.4 Stage 3: Identification of Relevant Biological Constraints 98
8.3.5 Stage 4: Plausibility of Biologically Informed Alternatives 101
8.3.6 Conclusion 102
8.4 Cross-Case Analysis: Predictive Value of Biological Mechanisms 104
Chapter 9: Sex Conflict — Reproduction and Gender Inequality 108
9.1 Introduction 108
9.2 Case A: The Gender Pay Gap in the Netherlands — Evolutionary-Biological Mechanisms and Reproductive Strategies 109
9.2.1 Introduction 109
9.2.2 Stage 1: Multi-Stakeholder Problem Analysis 109

9.2.3 Stage 2: Analysis of Traditional Policy Instruments 111
9.2.4 Stage 3: Identification of Evolutionary-Biological Constraints 112
9.2.5 Stage 4: Evaluation of Evolutionary-Biologically Informed Alternatives 115
9.2.6 Conclusion 116
9.3 Case B: The #MeToo Problem — Biological Mechanisms in Conditions of Power Asymmetry. 118
9.3.1 Introduction 118
9.3.2 Stage 1: Multi-Stakeholder Problem Analysis 119
9.3.3 Stage 2: Analysis of Traditional Policy Mechanisms 120
9.3.4 Stage 3: Identification of Biological Constraints 121
9.3.5 Stage 4: Evaluation of Biologically Informed Policy Alternatives 123
9.3.6 Conclusion 124
9.4 Cross-Case Analysis: Effectiveness of Evolutionary-Biologically Informed Alternatives 126
Chapter 10: Biological Constraints as an Integrating Factor — Cross-Case Synthesis 130
10.1 Introduction and Research Question 130
10.2 Cross-Case Analysis: Patterns across Six Cases 130
10.3 Validity of the Three-Conflict Taxonomy 131
10.4 Evaluation of the Framework of Ten Biological Constraints 132
10.5 Conclusion: Answer to the Central Research Question 135
10.6 Limitations and Further Research 136
10.7 Concluding Remarks 137
Chapter 11: Practical Guide for Policymakers 138
11.1 When Policy Encounters Invisible Forces 138
11.2 The EBR Scan: Five Core Questions 138
11.3 The EBR Assessment: Systematic Examination 139
11.4 The Ten Commandments for Public Administration 139
11.5 Practical Review Questions for Each Mechanism 140
11.6 Accommodation Strategies and Temporal Dimensions 141
11.7 Limitations and Ethical Considerations 142
11.8 Dutch Traditions as a Foundation 142
11.9 From Insight to Application 142
References (Excluding Case Studies) 144
Academic literature: 144
Empirical and institutional sources: 146
Reference Lists (Case Studies) 148
References for Case A (Chapter 7) 149
Executive Remuneration and Bonus Culture — Evolutionary Mechanisms in Social Hierarchy 149

References for Case B (Chapter 7) 150
Equality of Educational Opportunity in the Netherlands — Evolutionary-Biological Mechanisms in Meritocratic Selection 150
Specific References for Case A (Chapter 8) 152
Immigration and Social Cohesion — Territorial Mechanisms in Integration 152
Specific References for Case B (Chapter 8) 155
Educational Segregation — Territorial Mechanisms in School Choice 155
Specific References for Case A (Chapter 9) 157
The Gender Pay Gap in the Netherlands — Evolutionary-Biological Mechanisms and Reproductive Strategies 157
References for Case B (Chapter 9) 159
The #MeToo Problem — Biological Mechanisms under Conditions of Power Asymmetry 159

Chapter 1: A Crisis in Contemporary Public Administration?

1.1 Introduction: The Paradox of Advanced Governing Techniques and Persistent Problems

Modern Western democracies may possess the most sophisticated governing techniques in human history. They have refined economic instruments capable of steering markets, extensive legal frameworks capable of regulating behaviour, and influential communication systems capable of shaping norms. At the same time, these societies continue to face persistent problems that have proved resistant to policy intervention for decades, as repeatedly documented in research by the Netherlands Institute for Social Research and the Netherlands Environmental Assessment Agency: enduring inequality, ethnic tensions, gender discrimination, and declining social cohesion.

This chapter examines why traditional governing techniques often fall short when confronted with complex societal problems. Through an analysis of policy paradoxes, unintended effects, and persistent societal issues, it shows that these instruments regularly lack sufficient explanatory power. One important reason is that they implicitly rely on assumptions about human behaviour that are not always empirically tenable. This analysis provides the basis for an evolutionary-biological approach to public administration, which is developed in the chapters that follow.

The introduction first identifies the three principal categories of traditional governing techniques: economic instruments such as market incentives, taxation, and subsidies; legal instruments such as legislation, adjudication, and enforcement; and normative instruments such as public information, campaigns, and cultural change. It then develops the central argument that these instruments may fail systematically when they are based on inaccurate assumptions about human motivation and behaviour.

1.2 The Role of Economic Governing Instruments

Economic governing instruments are based on the principle that people respond to financial incentives as rational actors. This model assumes that individuals systematically weigh costs and benefits, process complete information, and maintain consistent preferences. Research in behavioural economics has, however, repeatedly challenged these assumptions.

Daniel Kahneman and Amos Tversky demonstrated that people make systematic errors of judgement in economic decision-making (Kahneman & Tversky, 1979). Their research on loss aversion showed that losses carry greater psychological weight than equivalent gains, a finding with fundamental implications for taxation and subsidy schemes. Richard Thaler's work on mental accounting shows that people do not regard money as fungible, but categorise it according to its source and intended use (Thaler, 1999). This finding may help explain why

energy subsidies do not necessarily lead to energy savings, but may instead result in increased comfort — an outcome that conventional economic models may fail to predict.

Dutch energy-subsidy policy illustrates a possible systematic failure of economic prediction. In *Evaluation of Energy Subsidy Policy 2015–2019*, the Netherlands Bureau for Economic Policy Analysis reports that the actual energy savings achieved through household insulation subsidies were often substantially lower than expected (Centraal Planbureau, 2019). Rather than reducing energy expenditure, households raised their thermostat settings. From a conventional economic perspective, this outcome is paradoxical, since rational actors would be expected to maximise energy savings. From an evolutionary-psychological perspective, however, the outcome may be interpreted as predictable: people seek to optimise comfort within the resources available to them. The subsidy was treated as an increase in the household's comfort budget rather than as an instruction to economise.

The childcare allowance system illustrates how economic incentives can generate unintended effects that run counter to the original policy objectives. Although the system was designed to encourage labour-market participation and broaden access to childcare, the Netherlands Institute for Social Research observed in *The Social State of the Netherlands* that households' actual childcare choices were strongly associated with socio-economic position rather than solely with the level of subsidy available (SCP, 2020). Lower-income groups made systematically less use of formal childcare than would be expected on the basis of the allowance alone, pointing to non-financial barriers such as information deficits, cultural norms surrounding childcare, and perceptions of quality. This pattern corresponds to what behavioural economics describes as 'sludge': administrative and cognitive frictions that weaken the effectiveness of financial incentives, particularly for the groups those incentives are intended to reach (Thaler & Sunstein, 2008; Sunstein, 2019). The childcare allowance case therefore suggests that policy instruments relying exclusively on price mechanisms may perpetuate social inequality when they fail to account for the non-economic determinants of behaviour.

The Dutch wealth tax in force between 1964 and 2001 illustrates how fiscal policy can provoke behavioural responses that policymakers did not anticipate. Wealthy households moved their tax residence to Belgium and other neighbouring countries — a pattern also observed in comparable European cases and systematically underestimated by standard models of taxation (Zucman, 2015; Saez & Zucman, 2019). This suggests that purely financial motives may not fully explain such behaviour: the perception of a tax regime as expressing societal disapproval of economic success may intensify the response in ways that rational-choice models do not capture (Frank, 1985; Shefrin & Thaler, 1988). Taxation therefore operates not only as an economic incentive, but also as a social signal.

These Dutch examples reveal consistent patterns that point to systematic limitations of economic instruments. Status competition can override cost minimisation, leading people to make economic choices that signal their social position even when those choices are financially suboptimal. Group identity can also affect individual calculations, as in the case of the wealth tax, which may have been perceived not merely as a financial burden but as an attack on the identity of successful entrepreneurs. Dutch citizens may be more willing to accept tax increases when these are linked to clearly identifiable reciprocal benefits, such as healthcare and education, whereas abstract objectives such as distributive justice may generate less compliance than concrete and reciprocal advantages.

1.3 The Role of Legal Governing Instruments

Legal governing instruments are based on the principle that people comply with rules when those rules are clearly defined and enforceable. This model assumes that legislation is universally applicable, that enforcement generates compliance, and that a sense of justice can override individual advantage. Empirical research on legal compliance nevertheless reveals systematic limitations to these assumptions.

Tom Tyler's research on procedural justice shows that compliance depends on perceptions of legitimacy, not merely on the likelihood of sanctions (Tyler, 2006). People follow rules when they regard the authority as legitimate and the procedures as fair. This helps explain why identical laws may produce different levels of compliance in different communities.

In 1994, the Netherlands introduced the Equal Treatment Act, designed to eliminate discrimination on the grounds of ethnicity, sex, and other characteristics. Research by the Netherlands Institute for Social Research in *Labour-Market Segregation in the Netherlands, 1995–2020* nevertheless shows that labour-market segregation between ethnic groups did not decline substantially (Sociaal en Cultureel Planbureau, 2021). Experiments conducted by the University of Amsterdam reveal the persistence of subtle discrimination by employers despite legal prohibitions (Universiteit van Amsterdam, 2020). Research indicates substantially higher prospects for applicants with Dutch-sounding names than for equally qualified candidates with Moroccan-sounding names. Legal enforcement appears to have limited effectiveness against such implicit biases.

Diversity measures at Dutch universities may also illustrate how legal instruments can produce unintended effects. Research suggests that explicit ethnic quotas and positive discrimination may increase ethnic tensions among students. The mechanism is paradoxical: attempts to eliminate discrimination through legal measures may heighten ethnic awareness by making group differences more explicit. This suggests that legal instruments do not operate neutrally, but may actively shape social categorisation.

Three biological mechanisms may systematically weaken the effectiveness of purely legal regulation. Human beings display evolved psychological tendencies towards group formation and in-group preference, which may undermine legal universalism. Laws that restrict loyalty to one's own group may mobilise intuitive resistance. People may also develop strong emotional attachments to particular places and communities, with legal interventions that threaten those attachments encountering systematic resistance irrespective of their formal validity. Finally, status differentiation is a widespread human phenomenon, meaning that legal egalitarianism aimed at eliminating all forms of hierarchy may come into conflict with evolutionarily rooted forms of status competition.

1.4 The Role of Normative Governing Instruments

Normative, or cultural-religious, governing instruments rest on the assumption that rational argument can bring about behavioural change. This model presupposes that people are receptive to new information, willing to revise their beliefs, and motivated to act consistently in accordance with their rational conclusions. Research on cognitive dissonance and motivated reasoning nevertheless shows that people systematically select information that confirms their existing beliefs and reject information that contradicts them. Leon Festinger's pioneering work in *A Theory of Cognitive Dissonance* demonstrated that people are more likely to adjust their perception of reality than to revise their fundamental belief systems (Festinger, 1957).

The Municipality of Amsterdam launched a campaign to promote social cohesion between ethnic groups. An evaluation by the Netherlands Institute for Social Research in *Evaluation of Amsterdam Social Cohesion Campaigns 2018–2021* reported mixed results: although awareness of diversity increased, actual inter-ethnic contact remained limited (Sociaal en Cultureel Planbureau, 2021). From an evolutionary-biological perspective, the limited effectiveness of such campaigns may be explained by evolved tendencies towards in-group preference that are not removed by cognitive appeals. Campaigns may alter attitudes without producing corresponding changes in behaviour.

Dutch climate campaigns illustrate the gap between attitudinal and behavioural change. In *Climate Awareness and Behaviour in the Netherlands 2019–2022*, the Netherlands Environmental Assessment Agency reports that, although surveys consistently show that Dutch citizens regard climate change as an urgent problem, actual behaviour — including air travel, meat consumption, and car use — has remained relatively stable (Planbureau voor de Leefomgeving, 2022). This pattern suggests that normative instruments may be effective in changing explicit attitudes while failing to address the underlying motivations that actually shape behaviour.

Neurobiological research indicates that emotional memory systems — centred on the amygdala and related limbic structures — can operate more rapidly and automatically than prefrontal analytical processes (LeDoux, 1996; Damasio, 1994). This implies that normative appeals must compete with evolutionarily shaped emotional responses that may take precedence over deliberative reasoning under conditions of time pressure or stress. Social psychology further shows that group norms are consistently stronger predictors of actual behaviour than individual attitudes, a finding that has proved robust across a wide range of behavioural domains (Cialdini & Trost, 1998; Schultz et al., 2007). Normative campaigns that primarily address the individual therefore overlook the social embeddedness through which behaviour is actually regulated. Finally, research on habit distinguishes between the formation of intentions and the consolidation of behaviour: rational persuasion may occur relatively quickly, but habitual behaviour requires prolonged repetition within a supportive social context before new patterns become automatic (Wood & Neal, 2007; Verplanken & Wood, 2006). Normative policy instruments may therefore systematically overestimate the speed at which attitudinal change is translated into durable behavioural change.

1.5 Converging Patterns: Common Causes of Policy Failure?

Policy paradoxes across different domains appear to point to underlying and shared fields of tension. The first concerns the relationship between instrumental design and the motivations of those involved. Economic instruments assume rational responses to incentives, but may pay insufficient attention to status competition and dynamics of recognition. Legal instruments depend on compliance, but encounter group loyalty and perceptions of social justice. Normative instruments appeal to individual responsibility, but may underestimate the force of conformity and group norms.

A second field of tension concerns contextual sensitivity. Policy instruments are often designed as though they were universally applicable, whereas their effectiveness may vary considerably between relatively homogeneous and more diverse communities. What works within shared cultural frameworks is not necessarily equally effective in multicultural or fragmented contexts. A third field of tension concerns scale and time. Interventions that appear successful in the short term or at local level may prove less sustainable when scaled up or assessed over a longer period. This raises the question of whether short-term compliance and durable behavioural change are in fact governed by the same mechanisms.

These observations suggest that policy failure may arise not only from institutional or economic constraints, but also from an incomplete understanding of the biological foundations of human behaviour. Might policy sometimes conflict with deeply rooted evolutionary tendencies towards status competition, group loyalty, and social conformity? If so, under what conditions can policy channel such mechanisms rather than suppress them? This study proceeds from the hypothesis that effective public administration is better served not by disregarding biological constraints, but by developing a more precise understanding of their role in policy dynamics. This does not imply biological determinism; rather, it draws attention to the limits within which behavioural change takes place. On that basis, the following chapters examine how evolutionary-biological insights may contribute to explaining recurrent patterns of policy failure and to formulating plausible conditions for more sustainable governing.

1.6 A Possible Alternative: Evolutionary-Biologically Informed Public Administration

The preceding analysis suggests that recurrent policy problems may arise not only from resource scarcity, implementation failure, or political resistance — the conventional explanations of policy failure — but also from limitations in the conception of human nature on which policy is based. Governing instruments often rest implicitly on assumptions about rationality, compliance, and consensus formation that correspond only partially with observed behaviour.

This raises the question of whether those assumptions are sufficiently consistent with what behavioural and evolutionary research tells us about motivation, cooperation, and group dynamics. Economic instruments generally assume that people make rational calculations, yet research indicates that status, recognition, and comparison with others may weigh more heavily than purely financial incentives. Legal instruments rest on the idea of universal compliance with rules, whereas studies show that perceptions of justice, loyalty, and territorial attachment may

shape behaviour more strongly than the formal probability of sanction. Normative instruments rely on rational persuasion and deliberation, but communication research shows that social conformity and identity signalling affect the force of argument.

An evolutionary-biological approach is not a deterministic alternative, but a conceptual framework in which policy is understood as an interaction between cultural institutions and biologically shaped motivations. It asks how policy can make use of human behavioural tendencies rather than simply oppose them, and under what conditions those tendencies can be channelled towards socially desirable outcomes. The expression of such predispositions varies across cultural and institutional contexts and therefore requires differentiated strategies. From an evolutionary perspective, people appear, for example, to be responsive to long-term investment in offspring, community, and legacy (Trivers, 1974; Hrdy, 2009). The working hypothesis is that policy aligned with such motivations may contribute more effectively to sustainability and legitimacy than policy based on the assumption that human behaviour is infinitely malleable.

1.7 Central Research Question and Sub-questions

The aim of developing a systematic analysis of policy failure from an evolutionary-biological perspective has led to the following research question:

Central research question: '*How can biological constraints function as an integrating factor within effective public administration, and what practical implications does this have for policy development and implementation?*'

This central question is addressed through six sub-questions that structure the theoretical development and empirical examination. The theoretical research questions are:

TRQ1: '*Which fundamental types of conflict are distinguished within public administration, how can they be classified according to biological patterns, and why are certain conflicts persistently resistant to traditional regulation?*'

TRQ2: 'U*nder what conditions do the anthropological assumptions underlying economic, legal, and religious regulatory mechanisms undermine their own effectiveness, and what role do biological constraints play in this process?*'

TRQ3: '*Under what theoretical and methodological conditions can biological constraints be integrated into public administration theory and policy design in such a way that they complement, rather than replace, traditional regulatory mechanisms?*'

The answers to TRQ1, TRQ2, and TRQ3 have resulted in a theoretical framework. To examine this framework, the following empirical research questions were formulated:

ERQ1 — *Explanatory Power:* *To what extent do biological constraints explain policy failure more effectively than traditional explanations such as inadequate resources, deficient implementation, or political opposition*?

ERQ2 — *Predictive Value:* *Can assessments of biological constraints reliably predict where policy measures will encounter systematic resistance or implementation problems*?

ERQ3 — *Effectiveness of Alternatives:* *Do biologically informed policy alternatives demonstrate substantially greater effectiveness than traditional approaches when resources and political support are controlled for?*

Answering these research questions requires a phased approach. The dissertation is therefore structured as follows. Chapter 2 develops the central research question in greater depth. TRQ1, TRQ2, and TRQ3 are subsequently addressed in Chapters 3, 4, and 5, respectively. Chapter 6, 'Methodology', specifies how the empirical research questions are to be answered and how the validity and reliability of those answers are to be safeguarded. The substantive answers to ERQ1, ERQ2, and ERQ3 are presented in Chapters 7, 8, and 9, with more detailed analyses provided in Annexes 1 to 6. In each chapter, the three research questions are examined from a different perspective: class conflict, race conflict, and sex conflict. Chapter 10 brings the findings together in a synthesis and answers the central research question. Chapter 11 seeks to translate the dissertation's insights into practical terms through a set of Ten Commandments.

Chapter 2: Biological Constraints as the Missing Link in Public Administration

2.1 Introduction: From Symptoms to Causal Analysis

This chapter explores the contours of the central research question by asking: '*Which biological mechanisms can function as constraints on effective public administration, and how can they be conceptualised as limitations within the architecture of institutional arrangements?*'

The methodological approach adopted in this chapter develops a theoretical framework in which biological factors are conceptualised as constraints within the architecture of institutional arrangements. The chapter first analyses why mainstream public administration often neglects biological dimensions, then develops the concept of evolutionary-biological constraints as limitations rather than determinants, and finally demonstrates how this perspective may offer new explanations for persistent policy failure.

The relevance of this question derives from a tension that can be observed within parts of public administration scholarship. In some theoretical traditions, human behaviour is treated primarily as something shaped by institutions, whereas other approaches regard behavioural factors either as given or as falling outside the domain of policy. Both positions have theoretical limitations. The first leaves unexplained why individuals, under certain conditions, consistently act in ways that diverge from their perceived self-interest; the second does not adequately explain why policy interventions that are well designed by conventional standards systematically underperform in particular cases.

An evolutionary-biologically informed approach may offer a third route by recognising that human behaviour is shaped by evolutionarily formed preferences and cognitive dispositions without lapsing into biological determinism. The hypothesis is that biological constraints operate as parameters that define the range within which institutional solutions remain feasible.

2.2 Scepticism towards Biological Influences in Contemporary Public Administration

Scepticism towards biological explanations in public administration appears to be fuelled in part by several persistent misconceptions that structure the debate. A first source of confusion is the presumed opposition between nature and culture: the assumption that biological and cultural explanations are mutually exclusive. This dichotomy overlooks the continuous interaction between the two levels, as documented in the literature on gene–culture co-evolution (Richerson & Boyd, 2005). Evolutionary-biological mechanisms may generate preferences for particular social arrangements, but their concrete expression is shaped by cultural and institutional context.

Closely related is the fear of biological determinism: the assumption that biological explanations necessarily imply fatalism about social change. An understanding of biological

mechanisms may, however, provide more effective points of intervention for behavioural change by allowing interventions to be aligned with psychological realities rather than designed in disregard of them (Pinker, 2002).

A third source of resistance concerns moral confusion surrounding the naturalistic fallacy: the implicit equation of what is 'natural' with what is 'good' or 'just'. Biological insights are sometimes rejected out of concern that they might morally legitimise existing inequalities, whereas a descriptive analysis of biological mechanisms does not entail normative approval (Hume, 1740/2000). Finally, a preference for single-dimensional explanations also plays a role. The complex interactions between biological preferences, cultural norms, and institutional incentives may be regarded as analytically unmanageable, encouraging simplification at the expense of explanatory power.

2.3 Defining Biological Constraints

Biological constraints can be conceptualised as limitations within the architecture of policy arrangements, whereby evolutionarily shaped psychological mechanisms define the range of feasible social arrangements without dictating specific outcomes. The metaphor is analogous to the way in which physical laws determine which bridges can be built without prescribing which bridges ought to be built.

These constraints have three essential characteristics. The first is stochastic rather than deterministic operation: biological mechanisms increase or decrease the probability of particular behaviours and preferences, but do not determine them absolutely. Research on kin preferences, for example, suggests that bias in favour of family members makes nepotism more likely, but does not render it inevitable (Hamilton, 1964).

The second characteristic is sensitivity to context: the same biological mechanisms may produce different outcomes depending on cultural norms and institutional incentives. Competitiveness may generate destructive conflict or constructive innovation depending on how it is channelled (Henrich, 2016).

The third characteristic is amenability to accommodation: biological constraints require accommodation rather than submission. Effective institutional design may work with evolutionary tendencies by channelling them towards socially desirable outcomes.

Four examples relevant to policymaking illustrate these principles. The first concerns carrying-capacity constraints. Research on resource dilemmas suggests that humans possess evolved mechanisms for recognising resource scarcity and overpopulation (Hardin, 1968). These mechanisms may affect the acceptance of immigration policy, environmental regulation, and the distribution of wealth. For public administration, this implies that policies which disregard carrying-capacity limits may encounter systematic resistance regardless of rational arguments concerning sustainability or economic benefit.

A second example concerns status competition and social hierarchy. Evolutionary psychology suggests that human beings are universally motivated by relative social position rather than by absolute prosperity alone (Henrich, 2016). Status competition may not be eliminable, but it can be channelled. For public administration, this suggests that effective policy may use status

incentives as a complement to material incentives, with public recognition for sustainable behaviour potentially proving more effective than financial rewards alone.

A third example concerns reciprocity and justice. Human beings appear to possess a highly developed sense of fairness and to respond negatively to perceived injustice even where doing so harms their material interests (Fehr & Gächter, 2002). This mechanism supports social cooperation, but may also generate resistance to effective policy where that policy is perceived as unfair. For public administration, this implies that policy acceptance may depend on procedural justice and on the perception that burdens are distributed fairly.

A fourth example concerns territorial attachment and identity. Human beings develop emotional bonds with particular places and communities. Research in social psychology shows that such attachment may motivate care for collective goods, but may also produce exclusionary behaviour and resistance to change (Tajfel & Turner, 1979). For public administration, this suggests that successful policy should respect existing attachments and provide gradual pathways of adjustment rather than impose abrupt change.

These four examples form part of a broader framework. That broader framework comprises ten mechanisms and is presented in Chapter 3. The mechanisms concerned are ‘evolutionary-psychological mechanisms’, which are frequently described in this dissertation as ‘evolutionary-biological mechanisms’ because their ultimate origins lie in population biology.

2.4 Integrating Evolutionary-Biological Insights into Public Administration

Given the scepticism described in Section 2.2, research into evolutionarily informed policy must satisfy a number of methodological conditions. Biological hypotheses require empirical testing against observable behaviour and policy outcomes, rather than acceptance on the basis of intuitive plausibility. This makes systematic comparison across societies and time periods essential. Biological factors also constitute only one layer within complex causal networks: effective analysis integrates evolutionary-biological, economic, institutional, and cultural explanations without privileging any single level. Recognition of biological constraints should furthermore encourage more creative institutional design, rather than resignation in the face of presumed immutability, since the same biological mechanisms can be channelled through different institutional arrangements. Finally, strict normative neutrality is required: biological constraints describe what is, not what ought to be. Normative objectives remain political choices, determined democratically within the limits of psychological feasibility. Translating these insights into policy therefore requires a layered analysis in which mechanism identification, diagnosis of tensions, and sensitivity to context are systematically connected. This approach is developed further in Chapter 11.

2.5 Empirical Validation: Indicators of the Operation of Evolutionarily Informed Policy

Two illustrative comparisons may provide insight into the effectiveness of biologically sensitive policy. The first compares pension reform in the Netherlands and Greece. The Dutch

approach may be interpreted as biologically sensitive because it involved a gradual transition across generations that respected acquired rights, retained collective elements that accommodated group loyalty, linked outcomes to economic performance in a manner that supported reciprocity, and communicated transparently about the necessity of reform in order to promote perceptions of fairness (OECD, 2013).

The Greek approach appears to have been more conventionally economic in orientation, involving abrupt reductions that curtailed acquired rights, individualisation that weakened group solidarity, one-sided sacrifices without reciprocity, and externally imposed measures that lacked domestic ownership (International Monetary Fund, 2012). The outcomes suggest that the Dutch reforms enjoyed broader social acceptance and proved more politically sustainable, despite the two countries facing comparable demographic and economic challenges.

The second comparison concerns immigration policy in Canada and Europe. The Canadian approach may be interpreted as biologically sensitive because it combines skills-based selection that accommodates competitive logic, a points-based system with transparent criteria that promotes perceptions of fairness, multiculturalism within a framework of shared values that supports a balance of identities, and regional dispersal that accommodates territoriality (OECD, 2019).

European approaches appear to have been more conventionally legal in orientation, with humanitarian obligations serving as the primary criterion, complex procedures lacking a clear underlying logic, multiculturalism without corresponding integration requirements, and concentration in urban areas. Canadian immigration studies suggest that Canada has achieved greater public acceptance of immigration and better integration outcomes despite comparable levels of cultural diversity (Statistics Canada, 2018).

Possible indicators for future research into biological compatibility may encompass four dimensions. The first is policy durability: evolutionarily informed policy may display greater political stability because it creates less friction with psychological preferences. The second is spontaneous compliance: policy aligned with evolutionary-biological mechanisms may generate higher levels of voluntary compliance. The third concerns unintended consequences: evolutionarily informed policy may produce fewer counterproductive side effects because it takes account of predictable human responses. The fourth is implementation cost: policy that works with biological mechanisms rather than against them may require lower levels of enforcement and administrative expenditure.

2.6 Conclusion

The provisional answer to the research question is that biological constraints may function as a missing link in public administration. In this capacity, they operate as limitations within the architecture of institutional arrangements composed of different combinations of economic, legal, and cultural-religious policy choices. These constraints may help explain why technically optimal policy sometimes fails because it conflicts with evolutionary-biological preferences. They may also indicate more effective alternatives by showing how such preferences can be channelled rather than disregarded.

Three provisional implications for policymaking can be identified. The first concerns a redefinition of administrative rationality: rational policy should take biological realities into account rather than ignore them. This may result in more complex but more effective intervention strategies. The second implication concerns the integration of explanatory levels: effective policymaking should combine economic, legal, and normative explanations rather than select a single level of analysis. The third implication is an empirical reorientation: policy evaluation should systematically examine how interventions interact with biological mechanisms, rather than assessing only whether they achieve their explicit objectives.

Chapter 3: A Taxonomy of Conflicts in Public Administration and Their Biological Operationalisation

This chapter addresses theoretical research question TRQ1: '*Which fundamental types of conflict are distinguished within public administration, how can they be classified according to biological patterns, and why are certain conflicts persistently resistant to traditional regulation?*'

3.1 Introduction: From Fragmentation to Systematic Classification

The analysis of governing failure in Chapter 1 and the identification of biological constraints in Chapter 2 raise a fundamental question: if traditional mechanisms fail because they disregard biological realities, how can problems of public administration be classified in a way that makes these biological dimensions explicit?

Public administration is confronted with a multitude of overlapping and competing classifications of conflict. Political scientists refer to left–right dimensions, sociologists to class conflict, economists to market failure, legal scholars to problems concerning the rule of law, and cultural anthropologists to clashes of values (Lipset & Rokkan, 1967). This fragmentation may impede a systematic understanding of why certain conflicts persist and why traditional interventions frequently fail.

This chapter develops a biologically informed taxonomy intended to cut through this conceptual confusion by heuristically ordering many persistent conflicts into three recurring categories corresponding to evolutionary challenges. The taxonomy is then operationalised through a systematic diagnostic framework that enables policymakers to identify and assess specific biological constraints.

3.2 The Biological Approach to Conflicts in Public Administration

From an evolutionary perspective, conflict may be understood metaphorically as the driving force of evolution: without competition there is no selection, and without selection there is no adaptation. Social organisation may evolve through comparable mechanisms, with different groups and strategies competing for limited resources (Wilson, 2007). Conceptualising problems of public administration as manifestations of evolutionary tensions makes explicit the opposing interests that consensus-oriented approaches often obscure. It may generate testable hypotheses about behaviour, help identify why compromise is difficult, and suggest intervention strategies that take fundamental conflicts of interest into account.

The proposed taxonomy of forms of societal conflict does not derive from a single theoretical tradition, but from a comparison of insights drawn from sociology, political economy, and anthropology. Rather than proceeding from abstract assumptions, an inductive approach was adopted: recurring patterns of societal tension were compared across different historical periods and governing contexts. The aim was not to construct a comprehensive explanatory model, but

to identify a workable ordering that is empirically recognisable, historically tenable, and relevant to public administration.

Three considerations guided the selection of the fundamental categories. First, the forms of conflict had to recur across a wide range of societies and historical periods. Secondly, they had to be recognisable within policy and governing practice — not merely theoretical, but observable in concrete fields of societal tension. Thirdly, they had to be sufficiently distinct to avoid complete overlap, while together covering a broad range of enduring societal conflicts.

This comparison produced a concise but robust classification.

Three forms of conflict recur across periods and cultures: class conflict, in which economic inequality and the distribution of resources are central; race conflict, in which group identity, territory, and cultural dominance are at stake; and sex conflict, in which reproduction, status, and patterns of care generate structural friction. Together, these three categories form the analytical framework used in the following sections to examine whether apparently novel conflicts — such as generational and ideological conflict — are genuinely independent types or merely variants of these underlying patterns.

3.3 Evaluation and Elimination of Alternative Classifications

Having distinguished three fundamental types of conflict — class, race, and sex conflict — the question arises whether additional categories are required to explain contemporary societal tensions. Two candidates recur regularly in the sociological literature: generational conflict and ideological or value conflict.

At first sight, generational conflict appears to constitute an independent category. Tensions between younger and older cohorts manifest themselves in debates about climate and pensions, in labour markets, and in healthcare policy. They became especially visible during the COVID-19 pandemic, when the economic interests of younger people were weighed against the health risks faced by older people (Parry & Urwin, 2011; Pötschke & Danner, 2021). Closer analysis, however, suggests that such tensions can be understood as combinations of existing forms of conflict.

The distribution of economic costs and benefits often reflects status and class conflict, with younger generations seeking a redistribution of opportunities and older generations defending accumulated positions (Ryder, 1965; Mannheim, 1928). Differences in time horizons and residential mobility introduce territorial dimensions: younger people tend to orient themselves more globally, whereas older people are often more locally oriented (Beck, 1992). Differences associated with sex and life stage also shape caring responsibilities and reproductive investment strategies. Generational conflicts may therefore be better understood as intersections of class, race, and sex conflict within particular historical contexts (Gilleard & Higgs, 2020).

Ideological conflicts — between progressive and conservative movements, secularisation and religious revival, or technocratic and populist perspectives — are likewise sometimes presented as autonomous categories. Comparison across time and cultures, however, indicates that ideological cleavages often function as symbolic expressions of the same structural tensions. Progressive and conservative orientations correlate with status and class positions; the defence

of national or ethnic identity reflects territorial conflict; and views on family, gender, and reproduction display the contours of sex and generational conflict (Haidt, 2012; Inglehart, 1997; Norris & Inglehart, 2019). Ideological conflicts may therefore function as epiphenomena: they articulate structures of interest and identity in moral or cultural terms.

A heuristic historical example illustrates this principle. The Hook and Cod Wars in fifteenth-century Holland are often described as a dynastic factional conflict, but can also be analysed in terms of three overlapping dimensions: economic rivalry between mercantile and landed elites — class conflict; regional loyalties among urban and territorial elites — territorial conflict; and family alliances and marriage strategies — sexual and reproductive conflict (Israel, 1995; Blom & Lamberts, 1999). This reinterpretation makes no claim to historiographical completeness, but illustrates how apparently unique conflicts can be understood as combinations of the three fundamental types.

The provisional conclusion is that neither generational nor ideological conflict requires a separate classification. Both operate as composite and expressive forms of already identified structural tensions. This conclusion is heuristic rather than absolute: it does not exclude the existence of other context-specific forms of conflict, but offers a workable framework for further analysis.

3.4 The Three Fundamental Types of Conflict

The three types of conflict identified above can be linked to the deeper behavioural and adaptive mechanisms introduced in Chapter 2.

Class conflict may be defined as conflict over vertical social ordering, the distribution of status, and the allocation of resources, driven by evolved mechanisms of dominance hierarchy and status competition. The biological basis of this argument is that dominance hierarchies occur in many social species, including primates (de Waal, 1982). The psychology of status competition encompasses both dominance-based competition, expressed through intimidation or force, and prestige-based competition, expressed through the demonstration of competence. These mechanisms may have evolved because status provides access to resources and reproductive opportunities.

Empirical manifestations include labour disputes over pay distribution and working conditions, debates about progressive taxation and wealth taxes, educational selection and meritocratic systems, and various forms of conflict over inequality. From the perspective of resistance to governing interventions, egalitarian policies often encounter opposition because they may run counter to mechanisms of status competition. Effective interventions might accommodate status needs while limiting destructive forms of competition.

Race conflict may be defined as conflict over territory and group identity. More specifically, it concerns horizontal group demarcation, territorial control, and in-group/out-group loyalty, driven by coalitional psychology and mechanisms of territorial defence. Its biological basis lies in the proposition that in-group/out-group mechanisms evolved because cooperation within groups conferred survival advantages, whereas competition with out-groups threatened access to resources (Tajfel & Turner, 1979). Territorial psychology and coalition formation are

widespread human characteristics that may be activated automatically when group identity or territorial control is perceived to be under threat.

Although ‘race conflict’ is a historically charged term — particularly in view of Nazi Germany and apartheid — it is retained here because of its analytical precision. The term ‘identity conflict’ is also used on occasion and should be understood as synonymous with it within the context of this dissertation.

Empirical manifestations include debates on migration and immigration policy, ethnic tensions and processes of segregation, regionalism and conflicts over decentralisation, and different forms of nationalism and globalism. From the perspective of resistance to governing interventions, multicultural policies that disregard group differences may encounter opposition because they can be perceived as threatening in-group loyalty. Effective interventions might accommodate group identity while limiting hostility towards out-groups.

Sex conflict may be defined as conflict over reproductive strategies, mechanisms of mate choice, and the sexual division of labour, driven by parental investment theory and sexual selection. Its biological basis lies in sex differences in reproductive biology — such as ova versus sperm, and gestation versus competition for mating access — which may generate different evolutionary strategies (Trivers, 1972). These differences are not deterministic, but create statistical tendencies that may be expressed in preferences and behaviour.

Empirical manifestations include sex differences in labour-market participation and pay progression, debates on reproductive rights and childcare, sexual harassment and violence, and different forms of gender policy. From the perspective of resistance to governing interventions, gender-neutral policies that disregard biological differences risk generating unintended inequalities. Effective interventions might accommodate differentiated preferences while safeguarding equality of opportunity.

3.5 Operationalisation through Biological Diagnosis

The three-conflict taxonomy provides a systematic classification, but requires operationalisation before it can be used for practical policy diagnosis. Policymakers need concrete instruments with which to identify evolutionary-biological mechanisms and assess their relevance to specific policy problems.

The following diagnostic framework is a conceptual proposal intended as a heuristic diagnostic instrument. It operationalises the biological constraints introduced in Chapter 2 into ten systematic elements through which potential incompatibilities between proposed interventions and biological realities can be identified before costly implementation begins.

The first element is ***carrying-capacity constraints***. Ecological research suggests that every population has a maximum size that its ecosystem can sustain over time (Meadows et al., 1972). More recent socio-ecological models extend this principle to human environments through the concept of ‘social carrying capacity’: the maximum pressure a society can absorb without a loss of social cohesion or institutional stability (Hardin, 1968; Catton & Dunlap, 1980; Ehrlich & Ehrlich, 1990; Dunbar, 1992). When population pressure, migration, or economic growth exceeds this threshold, tensions may arise that are structural rather than primarily political. In

the context of public administration, this implies that interventions can be sustainable only when they remain within both ecological and social carrying capacities.

The second element is ***resource competition***, the behavioural consequence of scarcity within an environment bounded by carrying capacity. Once structural limits become salient, individuals and groups activate strategies designed to preserve or expand their access to resources. Research on resource dilemmas shows that scarcity — whether actual or perceived — activates competitive mechanisms that may undermine cooperation (Ostrom, 1990, pp. 88–102). From an evolutionary-biological perspective, competition functions as an adaptive mechanism: it promotes the selection of more effective strategies, but generates friction when individuals experience a loss of relative position (Barkow, 1975; Daly & Wilson, 1988). This phenomenon of perceived scarcity helps explain why rivalry and status competition persist even under conditions of objective abundance (Frank, 1999).

In human societies, this is expressed in behavioural patterns such as defensive resource protection, comparison with reference groups, and symbolic forms of prestige acquisition when material growth stagnates. Resource competition is thus the psychological translation of ecological limitation: once structural carrying capacity has been reached, selective pressure shifts from expansion to positioning. This mechanism helps explain why perceptions of inequality or loss of recognition may threaten social stability even where aggregate prosperity does not decline.

The third element comprises ***reproductive strategies and mate choice***. Research in evolutionary psychology suggests that differences in reproductive biology give rise to differing logics of investment and selection (Trivers, 1972; Buss, 1989). The central paradox of human reproduction is that reproductive success depends not primarily on the number of offspring, but on the quality and durability of investment in them. Because human children remain dependent for a prolonged period, a strategy that concentrates resources, care, and reputation within stable social structures may be advantageous. At the same time, maintaining such stability requires continued competition for partners and resources, because reputation and status affect the capacity to provide investment.

This asymmetry helps explain average differences between men and women. Women bear higher minimum biological investment costs through pregnancy and lactation and may optimise reproductive success through more selective mate choice, stability, and resource security. Men incur lower minimum biological costs and may more often pursue success through competition and signalling behaviour that conveys investment capacity or dominance. Sexual selection may reward both strategies in different ways: traits signalling reliability, care, or status can each increase the likelihood of reproductive partnership.

In observable behaviour, this dynamic is expressed through distinct but overlapping patterns: competitive displays of status and dominance, signalling of reputation and reliability, long-term pair bonding, and heightened sensitivity to betrayal or reputational damage. Individuals continually adjust their social strategies to life stage and environmental pressure. Younger men tend to invest relatively more in competition and risk-taking, whereas older individuals and women tend more often towards care, cooperation, and social bonding. Status and reputation remain central regulatory principles shaping behaviour even in contexts that appear remote from reproduction.

The fourth element is ***territorial attachment***. Research in social and environmental psychology shows that people develop strong emotional bonds with particular places and communities (Altman & Low, 1992). Such attachment is not merely economic or functional, but is rooted in the evolutionary advantages of place-based stability: long-term familiarity with an environment increased the predictability of resources, safety, and social support (Hinde, 1987; Wilson, 1978).

Within human societies, this mechanism acquires a symbolic and collective dimension. Places function as repositories of identity and reciprocity: those who belong to a place participate in a shared history of cooperation and trust (Altman & Low, 1992; Relph, 1976). The loss or forced transformation of such an environment activates not only rational opposition, but also stress responses comparable to territorial defence in other social mammals (Bowlby, 1969; Hinde, 1987).

Observable behavioural expressions include a preference for proximity to kin, resistance to sudden relocation, emotional attachment to neighbourhood or village communities, and selective openness towards newcomers depending on shared symbols or codes of conduct. These responses may be understood as adaptive attempts to preserve the integrity of the social niche, a phenomenon with both ecological and social foundations (Wilson, 1978). From a diagnostic perspective, the mechanism helps explain why spatial interventions requiring relocation or reorganisation often provoke emotionally charged resistance: they may unintentionally undermine the evolutionarily rooted need for predictable proximity (Altman & Low, 1992).

The fifth element is ***social hierarchy and status competition***, mechanisms deeply rooted in the evolutionary history of group-living species. Anthropological and primatological research shows that hierarchical organisation occurs in virtually all human societies and plays a central role in regulating cooperation and resolving conflict (Brown, 1991; de Waal, 1982). From an evolutionary perspective, status functions as a signal of competence and reliability: individuals who visibly contribute to group interests or possess scarce capabilities gain reputational advantages and privileged access to resources.

This prestige hierarchy (Henrich & Gil-White, 2001) exists alongside the more direct dominance hierarchy, in which physical force or control over resources predominates. In human groups, the two forms may alternate or coexist: prestige promotes cooperation, while dominance enforces order.

The biological motivation underlying status competition lies in the association between status and reproductive or social success. Higher status increases access to resources, partners, and coalitions, thereby potentially increasing the survival prospects of offspring (Barkow, 1975; Wilson, 1978). Status loss therefore activates powerful emotions such as shame and humiliation, which serve to regulate hierarchical position. Observable expressions include the pursuit of recognition, sensitivity to relative standing, conformity to group norms, and competitive achievement behaviour.

At the same time, societies also constrain destructive rivalry by developing rituals, symbols, and institutions that regulate status — from formal rankings to titles and reward systems — and thereby increase the predictability of social interaction (Fiske, 1992). Social hierarchy is therefore not simply a departure from human equality, but an evolved means of balancing cooperation, reputation, and group stability.

The sixth element comprises ***altruism and reciprocity,*** fundamental mechanisms underlying the evolution of human cooperation. Social-psychological and evolutionary research shows that the psychology of reciprocity is not merely a moral principle, but an adaptive system that regulates trust, reputation, and group cohesion (Axelrod, 1984; Trivers, 1971).

From an evolutionary perspective, three principal pathways through which altruistic behaviour has evolved can be distinguished. The first is direct reciprocity, in which assistance is returned to someone who previously provided help. The second is indirect reciprocity, in which reputation functions as an information mechanism: 'I help you because I know that you help others.' The third is kin-selected altruism, in which the probability of shared genetic transmission increases the propensity to provide assistance (Hamilton, 1964). These mechanisms operate together as selective filters: individuals who cooperate with reliable partners improve both the survival prospects of their genes and the resilience of their social networks.

Within human communities, altruism is reinforced by systems of social reputation. Praise, shame, and guilt function as regulatory emotions that promote cooperation and discourage exploitation (Nowak & Sigmund, 1998; Fehr & Gächter, 2002). The evolutionary stability of cooperation thus rests on a subtle balance between reciprocity, reputation, and the punishment of free riders. Observable behavioural expressions include spontaneous helping within small groups, selective reciprocity in the form of personal favours, sensitivity to fair distribution, and the social sanctioning of exploitative behaviour. These behaviours reflect evolved strategies that sustain reciprocal cooperation within human groups.

The seventh element is ***parental investment***, a central mechanism of evolutionary success among species characterised by high investment in relatively few offspring, including humans. Evolutionary-biological research shows that parents have evolved mechanisms for investing resources, time, and energy in the welfare and future reproductive prospects of their offspring because such investment increases the likelihood of genetic transmission (Trivers, 1974; Hamilton, 1964).

This investment logic extends beyond direct parent–child relationships through kin selection: the evolutionary principle that individuals tend to invest in genetically related others because their success indirectly contributes to the propagation of shared genes. Grandparents and other relatives therefore also allocate resources to genetically related individuals (Hrdy, 2009). Humans are further distinguished by prolonged biparental care and shared child-rearing within wider social networks — a form of cooperative breeding — which enables children to survive despite exceptionally long periods of dependency (Burkart et al., 2009).

In behavioural terms, this mechanism is expressed in strong motivations towards protection, investment in education and future prospects, and pronounced emotional responses to threats affecting the welfare of offspring. Such motivation is evolutionarily adaptive: parents who invest heavily in their offspring increase not only their children's prospects of survival, but also their own inclusive fitness through reputational and kin effects. Observable manifestations include caring behaviour, the financial prioritisation of the family, the transmission of skills and values, and intergenerational solidarity. These patterns help explain the widespread tendency towards parental sacrifice and the emotional intensity surrounding decisions that affect children's futures. They do not represent cultural aberrations, but deeply rooted biological strategies for preserving kin advantage.

The eighth element combines two interrelated mechanisms: ***frequency dependence and environmental variability***. Together, they help explain how adaptive behaviour is maintained within populations and adjusted to changing conditions. Frequency dependence means that the payoff of a strategy depends on how frequently others adopt the same strategy. In evolutionary game theory, the fitness value of behaviour is determined not by its intrinsic value, but by its relative rarity or prevalence (Maynard Smith, 1982). Behaviours that become too widespread may lose their advantage, while rare alternatives may become beneficial. This dynamic helps explain social phenomena such as waves of fashion, policy diffusion, and the cyclical appeal of conformity and innovation.

Environmental variability refers to the evolutionary advantage of behavioural flexibility under unpredictable or changing conditions (Levins, 1968). Species and societies that maintain a broad repertoire of strategies tend to be more resilient than highly specialised systems. Diversity functions as a buffer: variation in behaviour, norms, and institutions increases the likelihood that at least some strategies will remain effective under altered conditions.

In human contexts, these mechanisms together form a principle of adaptive balance: individuals and institutions alternate between stability and variation in ways that maximise survival prospects. Observable expressions include adjustment to group norms, imitation of successful innovators or 'early adopters', and the maintenance of variation within systems so that unexpected environmental shocks can be absorbed. The evolutionary significance of this relationship is that survival depends not only on efficiency, but also on adaptability: the capacity to respond to social signals without eliminating internal variation.

The ninth element comprises ***life-history strategies***, which describe how behavioural priorities and patterns of investment shift as individuals age. Developmental-psychological research shows that people pursue different objectives and make different risk trade-offs at different stages of life (Erikson, 1950). From an evolutionary-biological perspective, this reflects life-history theory, which examines how organisms allocate limited time and energy between growth, reproduction, and survival (Kaplan et al., 2000).

Across the human life course, this is expressed in recognisable patterns. Younger people invest relatively more in competition, exploration, and risk-taking, which may increase opportunities for status acquisition and mate access. Adults shift their attention towards care, stability, and cooperation, thereby promoting offspring survival and social reputation. Older people more often prioritise the transmission of knowledge, protection of kin, and preservation of group cohesion.

These age-dependent shifts are not merely culturally arbitrary, but may represent biologically grounded optimisation of investment returns across the life course. Observable behaviours include age-related differences in risk tolerance, status ambition, altruism, and caring motivation. The coexistence of these strategies within a single population creates a functional distribution: younger people contribute more to innovation and competition, adults to stability and productivity, and older people to continuity and social transmission. This dynamic balance makes human societies adaptive across generations through an interaction between biological life stage and social role that supports both evolutionary and cultural continuity.

The tenth element is ***coalition formation,*** the evolutionary mechanism through which people establish cooperative alliances in order to increase mutual advantage, protection, or influence. Social-psychological research shows that people ***possess*** deeply rooted tendencies towards

group formation based on shared identity and reciprocal support (Brewer, 1999). From an evolutionary perspective, coalition formation constitutes a crucial extension of kin-selected altruism: cooperation is not limited to genetic relatives, but also encompasses strategic alliances among unrelated individuals (Tooby & Cosmides, 1996; de Waal, 1982).

Such alliances increase survival prospects by enabling collective defence, information exchange, and the distribution of risk. Successful coalitions depend on reputation and reliability: members who contribute consistently retain status and protection, whereas free riders are excluded.

Anthropological research shows that hunter-gatherer groups and modern organisations display comparable patterns: partnerships are formed, maintained, and dissolved on the basis of reciprocity and shared objectives (Dunbar, 2004). The evolutionary logic of coalition formation thus helps explain the existence of political, economic, and social networks: they reduce uncertainty and strengthen collective power. Observable behavioural manifestations include loyalty, reputation management, diplomacy, and symbolic rituals that reinforce group cohesion.

In-group preference and out-group differentiation are not aberrations, but adaptive responses to the need for reliable cooperation. The human tendency to form and maintain coalitions therefore reflects a fundamental balance between competition and solidarity: individuals advance their own interests by strengthening the collective on which their success depends.

3.6 Purpose and Necessity of the Taxonomy

The three categories correspond to fundamental challenges faced by human ancestors: survival through the acquisition of status, reflected in class conflict; protection through group cooperation, manifested in identity conflict; and reproduction through mate choice, expressed in sex conflict. This tripartite classification is intended to provide broad coverage of the primary adaptive challenges that have shaped human psychology.

A systematic analysis of persistent conflicts in public administration suggests that many cases can be traced to one or more of these three categories. Forms of policy resistance that cannot be adequately explained by resource shortages, implementation problems, or political power balances may be related to biological mechanisms within this taxonomy.

The taxonomy may also indicate where policy measures are likely to encounter resistance. Interventions that run counter to social hierarchy, group loyalty, or reproductive strategies may generate systematic implementation problems irrespective of the level of political support or the resources available.

3.7 Conclusion: Answer to Theoretical Research Question TRQ1

The answer to TRQ1 is that public administration can, in many cases, interpret fundamental types of conflict through three recurring biological patterns corresponding to evolutionary challenges: class conflict concerning hierarchy and distribution, race conflict concerning territory and group demarcation, and sex conflict concerning reproduction and the division of labour. These conflicts may remain persistently resistant to traditional regulation because they arise from evolutionarily shaped psychological mechanisms that cannot be regulated away through economic incentives, legal rules, or cultural appeals alone.

This taxonomy emerged from an evaluation of alternative classifications in which generational conflict, ideological conflict, and factionalism could often be traced to combinations of the three fundamental types. The classification is a conceptual proposal intended to satisfy four criteria: empirical robustness through cross-cultural and historical validity; practical recognisability through operationalisation in concrete policy domains; biological grounding through correspondence with adaptive challenges; and relative completeness through broad coverage of persistent conflicts.

The ten-element diagnostic framework transforms the taxonomy from an academic classification into a heuristic instrument through which policymakers can systematically assess which biological constraints are relevant to particular interventions. The framework may help predict where traditional mechanisms are likely to fail and may suggest evolutionarily informed alternatives.

The following chapters analyse why traditional regulatory mechanisms may fail systematically when they disregard these biological realities, how biological integration may create complementarity rather than competition between mechanisms, and how the explanatory power and effectiveness of this evolutionarily informed approach can be examined empirically across the three types of conflict. The principal innovation lies not in acknowledging that conflict exists, but in understanding such conflicts as manifestations of evolutionary psychology that must be channelled rather than suppressed if governing is to be effective.

Chapter 4: Deconstructing Traditional Regulatory Mechanisms

4.1 Answering Theoretical Research Question TRQ2 and the Corresponding Methodological Approach

This chapter addresses theoretical research question TRQ2: '*Under what conditions do the anthropological assumptions underlying economic, legal, and religious regulatory mechanisms undermine their own effectiveness, and what role do biological constraints play in this process?*'

Answering this question requires a detailed examination of each regulatory mechanism in turn. The chapter therefore first analyses the anthropological assumptions underlying each mechanism, then documents the empirical anomalies that challenge those assumptions, and finally identifies the biological constraints that may limit the effectiveness of each mechanism. The methodology combines conceptual analysis of theories of public administration with empirical assessment of policy failure and evolutionary-biological explanations of the patterns identified.

4.2 Economic Regulation: The Calculating Individual as Myth?

Economic regulation rests on the rational-actor model: a calculating individual who systematically seeks to maximise personal utility within a given incentive structure. This approach assumes that people respond predictably to material rewards and sanctions, process complete information, and maintain consistent preferences across time and context. Herbert Simon criticised this model by arguing that human decision-making is constrained by cognitive limitations. Rather than calculating optimal choices, people often make decisions that are 'good enough' — a process he described as bounded rationality (Simon, 1955).

Becker's extension of economic logic to all human behaviour is an important example of this approach (Becker, 1976). Criminal behaviour, marital choices, discrimination, and political participation are all analysed as outcomes of cost–benefit calculations by rational individuals. This reduction of human complexity to economic optimisation underpins policy instruments such as tax incentives, subsidies, fines, and market mechanisms.

Experimental economics has, however, documented numerous empirical departures from the predictions of rational choice theory. In the Ultimatum Game, people reject economically advantageous transactions when they perceive them as unfair. The Dictator Game frequently reveals altruistic behaviour in the absence of any expectation of reciprocity. Public-goods experiments demonstrate conditional cooperation that depends on perceptions of group norms rather than on individual reward.

Camerer's synthesis of behavioural game theory challenges the central assumptions of economic man (Camerer, 2003). People use heuristics rather than optimisation, display

systematic cognitive biases, and allow their choices to be influenced by contextually irrelevant factors. These departures are not random, but follow predictable patterns that may in some cases be better explained by evolutionary psychology than by economic rationality.

Three hypotheses concerning biological mechanisms may help explain the limited effectiveness of purely economic incentives. The first concerns reciprocity and fairness psychology. Human beings may possess evolved psychological mechanisms for detecting fairness that can override material self-interest. Trivers's theory of reciprocal altruism may explain why people sacrifice economic gain in order to punish unfair treatment (Trivers, 1971). Policies that rely exclusively on material incentives may therefore be vulnerable to crises of legitimacy.

The second hypothesis concerns status competition as opposed to wealth maximisation. Evolutionary psychology suggests that people invest substantially in relative status rather than in absolute prosperity alone. The consumption of positional goods and status signalling may undermine economically rational behaviour. Hirsch's analysis of the social limits to growth documents how status competition may reduce economic efficiency (Hirsch, 1976).

The third hypothesis concerns group loyalty as opposed to individual self-interest. Human beings may possess strong psychological tendencies towards in-group favouritism and out-group discrimination. Social identity theory shows that group membership can override economic incentives (Tajfel & Turner, 1979). This may help explain why economic policy often fails when it places different ethnic or cultural groups in direct competition with one another.

Concrete policy examples may illustrate these limitations of economic regulation. Tax evasion remains persistent in many countries despite severe financial penalties. Alm and Torgler show that compliance depends more on tax morale and perceived fairness than on the probability of detection or the severity of sanctions (Alm & Torgler, 2006). Countries with greater social cohesion display lower rates of evasion despite broadly comparable economic incentives.

Labour-market discrimination likewise reveals a persistent tension with Becker's model of discrimination, which predicts that market competition will eliminate discrimination because discriminatory employers incur higher costs (Becker, 1957). Empirical evidence nevertheless shows discrimination persisting over decades. Audit studies document continuing discrimination against minority applicants in recruitment despite the economic irrationality of such behaviour (Bertrand & Mullainathan, 2004).

Environmental policy also illustrates the limitations of economic instruments. Carbon pricing and related economic measures have had limited success in changing consumption behaviour, as documented in evaluations of the EU Emissions Trading System (European Environment Agency, 2020). Griskevicius and colleagues show experimentally that pro-environmental behaviour may be driven more strongly by status signalling and social norms than by economic cost (Griskevicius et al., 2013).

4.3 Legal Regulation: The Rule-Following Citizen as Fiction?

Legal regulation rests on the rule-following citizen as an ideal type: a norm-internalising actor who systematically complies with legal rules when they are communicated clearly and enforced consistently. This approach assumes that people are intrinsically motivated to obey the law,

recognise legal authority as legitimate, and regard clear rules backed by predictable sanctions as sufficient to secure compliance.

Hart's concept of legal obligation from the internal point of view may be understood as an example of this approach (Hart, 1961). Legal subjects are assumed to accept rules not merely out of fear of sanctions, but through genuine recognition of legal authority. This conception of law as internally binding underpins regulatory strategies that rely primarily on the specification and enforcement of rules.

Research on legal compliance nevertheless reveals systematic departures from predictions based on rule-following. Tyler's work on procedural justice demonstrates that compliance depends more on the perceived legitimacy of authorities than on the clarity of rules or the severity of sanctions (Tyler, 2006). People often fail to obey laws they regard as illegitimate, irrespective of the level of enforcement.

Within the behavioural law literature, authors such as Cass Sunstein have criticised the assumption that legal actors respond rationally to rules. Research shows that citizens frequently misunderstand legal requirements, systematically misjudge risks, and tend to believe that they themselves are more likely to comply than others. Classical deterrence models therefore often overestimate expected levels of compliance (Robinson & Darley, 2004).

Three biological mechanisms may, in many cases, limit the effectiveness of purely legal regulation. The first concerns coalition formation and group loyalty. Human beings possess evolved psychological tendencies towards group formation and in-group favouritism that may undermine legal universalism. Brewer's research on in-group favouritism shows that people systematically prefer members of their own group even where group divisions are arbitrary (Brewer, 1999). When legal rules conflict with group loyalties, individuals often prioritise solidarity with their own group over formal compliance, as indicated by Henrich's cross-cultural studies of norm-related behaviour (Henrich et al., 2006). In such contexts, anti-corruption laws may be less effective because informal obligations towards relatives or network partners weaken the operation of formal rules (Rose-Ackerman & Palifka, 2016).

The second mechanism concerns the recognition of authority and the psychology of hierarchy. Legal authority depends on the recognition of legitimate hierarchy, yet human beings possess a complex evolved psychology of authority recognition that may conflict with formal legal structures. Traditional authority, charismatic authority, and other Weberian forms may compete with legal-rational authority for legitimacy (Weber, 1922/1978).

The third mechanism concerns territorial attachment and local autonomy. Human beings develop strong psychological bonds with place and community that may generate resistance to centrally imposed legal rules. Legal universalism may conflict with evolved preferences for local control and communal autonomy. This may help explain persistent resistance to national legal standards in regions with a strong local identity.

Concrete policy examples illustrate these limitations of legal regulation. Anti-discrimination legislation has had limited effects despite the existence of extensive statutory frameworks. The Netherlands Institute for Social Research documents persistent labour-market segregation between ethnic groups notwithstanding legal prohibitions (Sociaal en Cultureel Planbureau, 2021). Bertrand and Mullainathan's audit study reveals substantial racial discrimination in recruitment decisions despite legal regulation (Bertrand & Mullainathan, 2004).

Drug legislation provides another illustration. Decades of criminalisation and severe sanctions have failed to reduce drug use substantially. Portugal's experiment with decriminalisation suggests that treatment-based approaches may be more effective than punitive legal strategies, although this outcome reflects integrated social interventions rather than legal change alone (Hughes & Stevens, 2010).

Anti-corruption policies have produced mixed results across cultural contexts. Countries with strong traditions of family loyalty continue to display persistent corruption despite severe legal sanctions. Data from Transparency International indicate that legal frameworks are often insufficient to reduce corruption in the absence of complementary social and economic measures (Transparency International, 2020).

4.4 Religious and Cultural Regulation: Shared Meaning as Illusion?

Religious and cultural regulation rests on the meaning-seeking individual as a theoretical construct: a value-internalising actor who systematically absorbs shared values and communal norms through processes of socialisation. This approach assumes that people are intrinsically motivated towards social connectedness, genuinely embrace communal values, and can be regulated behaviourally through cultural transmission.

Durkheim's analysis of the elementary forms of religious life illustrates this approach (Durkheim, 1912/1995). Religious beliefs and practices are understood as expressions of collective consciousness that regulate individual behaviour through internalised moral obligations. This conception of culture as an internally motivating force underpins policies based on values education and community mobilisation.

Research on cultural regulation nevertheless reveals limitations in value-based approaches. Inglehart and Welzel's World Values Survey shows that cultural change proceeds far more slowly than the timelines within which policy is generally implemented (Inglehart & Welzel, 2005). Traditional values may persist across generations despite intensive efforts at modernisation. More fundamentally, experimental psychology challenges the assumption of authentic value internalisation. Social desirability bias, pressures towards conformity, and other psychological mechanisms may create an appearance of consensus without producing genuine behavioural change. Cultural policy often generates superficial compliance without deeper transformation (Geertz, 1983).

Three biological mechanisms may limit the effectiveness of purely cultural regulation. The first concerns group identity and out-group competition. Religious and cultural movements often strengthen in-group bonds at the expense of relations with out-groups. Boyer's work in the cognitive science of religion suggests that religious belief may reinforce group cohesion while also intensifying intergroup conflict (Boyer, 2001). Cultural policies that privilege particular traditions may therefore marginalise other groups.

The second mechanism concerns cognitive modularity and belief formation. According to cognitive science, human beings possess evolved psychological modules for coalition detection, kin recognition, and other social functions that may resist cultural programming. Barrett's research in the cognitive science of religion suggests that certain beliefs are more

intuitively compelling than others because they correspond to evolved psychological dispositions (Barrett, 2004).

The third mechanism concerns individual differences and personality variation. People vary systematically in their openness to cultural influence, religiosity, and attachment to traditional values. McCrae and Costa's research in personality psychology indicates that individual differences in openness, conscientiousness, and other traits predict responsiveness to cultural influence, although such relationships remain context-dependent (McCrae & Costa, 2008). Uniform cultural policy disregards this variation in personality.

Concrete policy examples illustrate the limitations of religious-cultural regulation. Dutch integration courses intended to transmit Dutch values appear to have had limited long-term effects on the behaviour or attitudes of immigrants, although important differences exist between the policy cultures of the Netherlands and those of other countries. Follow-up evaluations report only minimal differences in value orientation between participants and non-participants after several years (Joppke, 2007).

Values education likewise appears to have limited effectiveness. Various studies suggest that moral education programmes in schools have little effect on actual behaviour despite increasing knowledge of ethical principles. Kohlberg's theory of moral development has been criticised for cultural bias and for its limited capacity to predict behaviour (Klaassen, 2002).

Community building presents similar difficulties. Initiatives intended to create community frequently struggle to generate authentic social bonds between different ethnic or religious groups. Predictions derived from the contact hypothesis are not consistently confirmed: Pettigrew and Tropp's meta-analysis shows that, although contact often reduces prejudice, its effects are context-dependent and may under some conditions increase prejudice (Pettigrew & Tropp, 2006).

4.5 Limitations Arising from Competing Mechanisms

Rather than reinforcing one another, the three mechanisms may produce recurring patterns of interference when their underlying anthropological models come into conflict. Tensions between economic and legal logics may arise where market incentives undermine legal compliance because the potential economic gains are substantial. Tax-avoidance strategies frequently exploit legal loopholes for economic advantage. Financial incentives may also reduce people's willingness to comply with rules for their own sake by encouraging them to interpret behaviour primarily as a response to rewards or sanctions.

Legal and cultural authority may conflict where legal universalism weakens cultural particularism by delegitimising traditional structures of authority. Laws protecting religious freedom may conflict with principles of non-discrimination. Cultural exemptions from legal requirements may in turn undermine legal universalism and principles of equal treatment.

Economic and cultural values may also clash where market mechanisms erode communal ties through the commercialisation of social relationships. Anderson's analysis of markets and morality shows how economic reasoning may corrupt non-market values (Anderson, 1993).

The commercialisation of education, healthcare, and other sectors frequently provokes cultural resistance.

These patterns of interference generate several characteristic risks in contemporary governing. Policy cycles may emerge in which different mechanisms are successively emphasised as previous approaches fail, producing cyclical policy change without durable solutions. Economic liberalisation may be followed by regulatory re-regulation, which triggers cultural resistance and eventually prompts a renewed economic emphasis.

Implementation gaps may arise where policy designed according to the logic of one mechanism fails during implementation because it encounters resistance generated by others. Top-down legal mandates may fail to achieve either economic efficiency or cultural acceptance. Crises of legitimacy may emerge where contradictions between different regulatory logics undermine the legitimacy of the system as a whole. Citizens receive conflicting signals about appropriate conduct, leading to cynicism and disengagement from political processes.

4.6 Neglect of Biological Constraints as a Possible Cause of Policy Failure

All three traditional mechanisms share a possible weakness: they operate through analytical ideal types that are often insufficiently realistic and that disregard evolutionary-biological realities. ‘Economic man’, ‘legal man’, and ‘religious man’ are theoretical constructs that may diverge systematically from actual human behaviour. These ideal types may contribute to policy failure because they predict behavioural responses that occur only inconsistently in practice. Real people are partly rational, partly rule-following, and partly meaning-seeking, but they act within evolutionary constraints that help determine when, and under what conditions, each tendency predominates.

Biological constraints provide an explanatory framework that may indicate when economic incentives are more likely to work: namely, when material incentives align with evolved psychological dispositions such as reciprocity, status competition, and kin favouritism. They are less likely to succeed when they conflict with those dispositions. Legal compliance is more likely where legal authorities are perceived as legitimate in ways that correspond with evolved patterns of authority recognition, and where rules align with preferences for group loyalty. Cultural transmission is more likely to succeed where new cultural elements are compatible with evolved psychological modules and strengthen rather than threaten group identity.

One implication for future research and policy is that, rather than choosing among economic, legal, or cultural approaches, effective governing may require the integration of all three within biological constraints. Biological constraints do not eliminate the need for traditional mechanisms, but may help specify the conditions under which those mechanisms are effective. Economic incentives remain necessary, but might be designed to activate evolved mechanisms of cooperation rather than appeal exclusively to self-interest. Legal rules remain essential, but might be grounded in recognisable patterns of authority and in the psychology of group loyalty. Cultural values remain important, but might build upon rather than conflict with evolved social dispositions.

4.7 Conclusion

Economic, legal, and religious regulatory mechanisms may be only partially effective when they fail to take adequate account of biological constraints. This is particularly likely where their underlying assumptions about human behaviour have only limited empirical support. Under such conditions, behavioural responses become less predictable. Economic man, legal man, and religious man are useful analytical ideal types, but they underestimate the complexity of human nature and its biological foundations.

Three factors may contribute to the reduced effectiveness of policy based exclusively on these ideal types: limitations in predictive power, where expected behaviour occurs only rarely or inconsistently; interference between regulatory mechanisms, where different normative frameworks weaken rather than reinforce one another; and an increased risk of legitimacy problems, where citizens receive conflicting signals about what constitutes appropriate behaviour.

Biological constraints provide an additional explanatory framework that may help clarify when and why different regulatory approaches succeed. A better understanding of these underlying conditions makes it possible to design economic, legal, and religious regulation as complementary rather than competing instruments of contemporary governing. The following chapter develops this integration systematically.

Chapter 5: From Competition between Mechanisms to Biological Accommodation

5.1 Introduction: Three Lenses on the Integration of Biology and Governing

Public administration has long developed as a discipline that seeks to explain human organisation in terms of rational, legal, or cultural principles, generally without explicit reference to the biological roots of human behaviour. Yet the question of the relationship between nature and governing is not new. Over the past half-century, several academic traditions have attempted to connect natural and social levels of explanation. These efforts have produced three influential approaches, each of which seeks in its own way to incorporate biological insights into social theory: Douglass North's institutional economics, the behavioural public policy associated with Richard Thaler and Cass Sunstein, and the cultural evolution theory developed by Robert Boyd and Peter Richerson. Together, they form a three-lens framework showing that evolutionary ideas can indeed be fruitful within public administration, provided that they are embedded with sufficient care.

The first lens, institutional economics, understands institutions as the humanly devised 'rules of the game' that make cooperation possible within structural constraints (North, 1990). North emphasises that institutions do not arise arbitrarily, but develop within the limits imposed by cognitive capacity, transaction costs, and shared norms. In that sense, his approach implicitly recognises biological constraints: behaviour is not infinitely plastic, but embedded in human tendencies towards reciprocity, reputation formation, and loss aversion. This approach therefore provides a bridge between evolutionary stability and administrative order, but remains largely descriptive. Institutional economics explains why institutions emerge more convincingly than it explains how they can be designed to shape behaviour structurally.

The second lens is behavioural public policy, associated most prominently with Thaler and Sunstein (2008). It incorporates insights from cognitive psychology into policy design, for example through nudges that respond to systematic biases and heuristics. Its contribution is normative and micro-behavioural: policy should work with human nature rather than against it. This approach translates biological and cognitive insights into governing instruments, but is limited by its tendency to leave the wider institutional and cultural framework underexamined. Its emphasis on individual choice architecture leaves open questions concerning the durability and legitimacy of such behavioural interventions.

The third lens, developed within cultural evolution theory (Boyd & Richerson, 1985, 2011), shifts the focus towards macro-level processes. Culture is understood here as an evolutionary system that, like biological populations, is subject to variation, selection, and transmission. This approach provides an explanatory framework for the diffusion of institutions, values, and norms. It shows how behavioural patterns can stabilise across generations through imitation, social learning, and group selection. In doing so, it introduces a dynamic perspective on continuity in governing: policy is not merely a rational intervention, but also a form of cultural transmission. This lens, too, has its limitations, however, because it rarely specifies how evolutionary insights can be translated into normative policymaking or institutional design.

Taken together, these three lenses show that the integration of biological insights into public administration is possible, but has not yet found a conclusive form. Each perspective explains part of the picture: the institutional lens illuminates the structural constraints on behaviour, the behavioural lens the psychological mechanisms involved, and the cultural lens the transmission of behaviour across generations. What remains absent is a coherent integrative framework capable of connecting these levels without lapsing into reductionism. Put differently, public administration possesses three partial bridges between nature and governing, but not yet a single coherent span.

This lacuna provides the basis for the third theoretical research question of this dissertation: *Under what theoretical and methodological conditions can biological constraints be integrated into public administration theory and policy design in such a way that they complement, rather than replace, traditional regulatory mechanisms*? The purpose of this chapter is to identify those conditions. Its focus is not on constructing a new evaluative framework, but on determining the intellectual and empirical conditions under which such a framework can function meaningfully. The chapter thus forms the conceptual keystone of the theoretical part of the dissertation: it connects the earlier account of biological constraints to the need for integration within public administration and prepares the ground for the methodological elaboration presented in Chapter 6.

5.2 The Lacuna: A Lack of Evolutionary-Biological Plausibility

Although the three approaches discussed above each contribute in their own way to a more realistic conception of human beings, public administration in its present form remains caught in a structural tension: it often operates as though behaviour were susceptible to unlimited steering, whereas evolutionary psychology suggests that behaviour is deeply embedded in relatively stable motivational patterns. This creates a mismatch between policy assumptions and behavioural reality. Institutions are designed as though citizens were rational actors, yet citizens respond as evolved organisms with cognitive limitations, social reflexes, and moral intuitions that cannot simply be reprogrammed.

The three traditional regulatory logics — economic, legal, and religious-cultural — share a common deficiency: each presupposes a conception of human beings in which behaviour is treated as infinitely malleable. Each system abstracts one dimension of human nature and elevates it into a theoretical point of departure: economics reduces motivation to incentives, law to obligation, and religion to meaning. In doing so, they disregard the biological substrate on which all such behaviour rests: limits to cognitive capacity, sensitivity to status, the need for reciprocity, and the deeply rooted tendency towards group formation. As a result, their interventions often appear stable on paper but prove fragile in practice. Policies fail not because they are irrational, but because they are evolutionarily unrealistic: they conflict with mechanisms shaped over millennia of social selection.

Public administration therefore possesses three regulatory logics that are partly successful but incompletely grounded. Economics explains motivation but neglects moral context; law creates order but underestimates social dynamics; culture provides meaning but may reinforce irrational rigidity. So long as these logics are not systematically connected to the behavioural conditions from which they arise, the discipline will remain vulnerable to policy failure. This

is the lacuna addressed in this chapter: the absence of an integrated level of explanation capable of bridging biological constraints and principles of institutional design.

The following section examines the theoretical conditions under which such integration can take place meaningfully. The emphasis therefore shifts from deficiencies to possibilities: how can public administration become evolutionarily realistic without abandoning its normative core?

5.3 Theoretical Conditions for Integration: Policy Theory in the Narrow Sense

The integration of biological constraints into policy theory requires more than an expansion of the available explanatory repertoire. It calls for a fundamental reconsideration of the theoretical assumptions on which policy models rest. Policymaking is not an autonomous cognitive process, but a behavioural phenomenon operating within evolutionarily shaped limits of perception, motivation, and cooperation. To integrate biological insights without lapsing into reductionism, three theoretical conditions must be satisfied: structural heterogeneity, epistemic limitation, and functional complementarity. These conditions define the intellectual space within which policy theory can be biologically grounded without losing its explanatory coherence.

1. Structural heterogeneity: multi-level explanation of policy dynamics. Policy theories generally describe policy change as arising from interactions among actors, ideas, and institutions. From an evolutionary perspective, these layers are not separate dimensions but interdependent levels of selection. Micro-level behaviour — individual perceptions, interests, and emotions — meso-level structures — coalitions, networks, and policy subsystems — and the macro-level context — institutional and cultural frameworks — influence one another through feedback loops comparable to multilevel selection processes in evolutionary systems (Boyd & Richerson, 2011; Henrich, 2015).

The first condition is therefore that policy theory must explicitly permit multi-level explanation. An evolutionarily plausible policy theory recognises that policy dynamics arise from interactions among cognitive, social, and institutional mechanisms, and that change can be understood only through their conjunction (North, 1990; Ostrom, 1990). Theoretical models dominated by a single level — such as rational-choice variants that isolate actors from their context, or cultural approaches that disregard agency — are therefore conceptually incomplete. Structural heterogeneity is not a methodological luxury, but a necessary condition for explanatory power.

2. Epistemic limitation: plausibility rather than causality. The second condition concerns the epistemic status of biological explanations within policy theory. Policy processes are complex, context-dependent, and normatively charged. They cannot be reduced to experimentally testable causal relationships (Flyvbjerg, 2001). An evolutionarily informed policy theory should therefore refrain from making direct causal claims about the 'biological causes' of policy behaviour. It may instead function as a diagnostic framework for assessing the behavioural plausibility of policy assumptions (Buss, 2016; Van Vugt & Ahuja, 2010).

In this sense, biology serves a heuristic function: it helps explain why certain assumptions — such as unlimited rationality or unrestricted altruism — are empirically improbable. The relevant test then becomes: is the presumed policy mechanism evolutionarily plausible in light of what is known about human cooperation, status competition, and reciprocity? When policy theories disregard such plausibility, they lose empirical credibility. Epistemic limitation therefore requires modesty in the explanatory claims made by policy theory. Biological insights function as criteria of plausibility, not as deterministic explanations of policy change.

3. Functional complementarity: coherence among policy mechanisms. The third condition concerns the need for functional complementarity among the different mechanisms incorporated into policy theory. Most explanatory models distinguish three principal mechanisms: instrumental mechanisms, involving interests and incentives; institutional mechanisms, involving rules and structures; and normative mechanisms, involving values and beliefs. From an evolutionary perspective, these correspond to three levels of behavioural organisation: competition, cooperation, and cultural transmission (Thaler & Sunstein, 2008; Boyd & Richerson, 2011). A policy theory seeking to integrate biological constraints must therefore consider these mechanisms not separately, but in terms of their mutual dependence.

Economic incentives operate effectively only when they are socially legitimate; institutional rules are effective only when they correspond with shared expectations; and normative values remain meaningful only when they are sustained through reciprocal practices. When any one of these dimensions is disregarded, evolutionary instability may result: policy loses public support, coherence, or effectiveness. Functional complementarity is therefore a necessary condition for sustainable policy dynamics (Henrich, 2015; Wilson, 2012).

5.4 Conclusion

The answer to the third theoretical research question — '*Under what theoretical and methodological conditions can biological constraints be integrated into public administration theory and policy design in such a way that they complement, rather than replace, traditional regulatory mechanisms?*' — is therefore as follows.

Together, the three conditions constitute the theoretical minimum required for integrating biological insights into policy theory in the narrow sense:

1. *Structural heterogeneity:* policy theory must permit multi-level explanation.
2. *Epistemic limitation:* biological insights must serve as criteria of plausibility rather than as causal explanations.
3. *Functional complementarity*: instrumental, institutional, and normative mechanisms must be understood as mutually dependent functions.

Where policy theory fails to satisfy these conditions, it lapses either into reductionism, because one explanatory level dominates; into speculation, because empirical plausibility is absent; or into fragmentation, because coherence among mechanisms is lacking. The conditions are therefore not merely advisory, but constitutive: they determine whether the integration of evolutionary insights is theoretically tenable. They provide the foundation on which the methodological implications can be formulated in the following chapter.

The next chapter translates these theoretical conditions into an analytical framework through which the six cases examined in Chapters 7 to 9 can be assessed systematically for their evolutionary plausibility. The focus thus shifts from theoretical necessity to empirical applicability, without sacrificing the normative and methodological independence of policy theory.

Chapter 6: Research Design and Methodological Justification

The central question addressed in this chapter is: 'How can the empirical sub-questions of this dissertation be answered in a scientifically valid and reliable manner?' The chapter also accounts for the data-collection process underlying the three theoretical research questions.

6.1 Introduction: Methodological Challenges

The preceding chapters have shown that policymaking can be understood only to a limited extent through economic, legal, or cultural models that assume human behaviour to be infinitely malleable. Chapter 5 therefore formulated three conditions that an evolutionarily plausible policy theory must satisfy: structural heterogeneity, epistemic limitation, and functional complementarity. These conditions are not explanatory laws, but conditions of recognisability: they determine when policy corresponds realistically with the evolutionary-biological mechanisms that actually shape human behaviour.

The purpose of this chapter is not to prove these conditions empirically, but to make them diagnostically applicable to the analysis of concrete instances of policy failure.

The cases examined in Chapters 7 to 10 therefore serve as natural experiments. They illustrate how policy designs may fail structurally when one or more of the biological constraints identified in Chapter 3 are disregarded or addressed incorrectly. The methodology is therefore not verificatory but diagnostic in character: it seeks recurring patterns of mismatch between policy assumptions and evolutionarily plausible behaviour.

This approach corresponds with what Flyvbjerg (2001) described as phronetic social science: research directed towards practical understanding rather than universal regularities. The methodological logic adopted here is abductive. It reasons backwards from observed patterns of policy failure towards plausible underlying mechanisms. This makes it possible to assess the applicability of the theoretical insights developed in Chapters 3, 4, and 5 without lapsing into reductionism or making unwarranted causal claims.

The following sections describe the four-stage procedure used to conduct this diagnostic analysis, the selection criteria applied to the six cases — which are described in full in Annexes A to F — and the way in which the collected data were interpreted in light of the evolutionary-biological constraints. This approach situates the empirical research explicitly within the purpose of the central research question: to develop a better understanding of the persistence of policy failure resulting from neglected biological conditions, and to explore how policy that corresponds more closely with those conditions might be designed in a more stable and sustainable manner.

The theoretical development undertaken in Chapters 1 to 5 has produced a coherent framework in which biological constraints may function as an integrating factor within effective public

administration. The taxonomy of conflicts in public administration developed in Chapter 3 provides the classificatory basis for the empirical analysis. This theoretical framework must now be examined through carefully designed empirical research. The present chapter justifies the methodological choices made in answering the three empirical sub-questions and describes the research design applied in Chapters 7 to 9.

6.2 Research Philosophy and Positioning

This study adopts critical realism as its overarching paradigm because this perspective recognises that social reality is structured by underlying mechanisms, such as biological constraints, which are not directly observable but nevertheless produce empirical manifestations. Critical realism combines ontological realism — the proposition that biological mechanisms exist independently of our knowledge of them — with epistemological relativism, according to which our knowledge of those mechanisms is fallible and context-dependent (Bhaskar, 1975).

This position justifies a focus on mechanism identification through pattern recognition rather than on correlations between variables established through statistical testing. Although biological mechanisms may be universal, they are expressed through culturally interpreted meanings and institutionally mediated processes. The methodology must therefore identify biological universals while also accounting for their culturally specific manifestations.

6.3 Multiple-Case Study Design

Case studies are particularly appropriate for theory testing where HOW and WHY questions are central, where the researcher has no control over the relevant behaviour, and where the focus is on contemporary phenomena within real-life contexts (Yin, 2018). All three conditions apply to the questions addressed in this dissertation.

Multiple-case studies strengthen analytical validity through pattern comparison both across and within cases. Replication logic compensates for the absence of statistical generalisability by pursuing analytical generalisation. Six cases were selected purposively to maximise variation in time, context, and conflict intensity. They encompass both historical and contemporary situations, range from local to international levels of governing, and include both latent tensions and overt policy crises. This variation makes it possible to identify recurring patterns that are not confined to a particular period or institution.

Each case must satisfy five criteria. First, theoretical significance: the case must contribute to understanding biological constraints. Secondly, policy relevance: it must possess substantial relevance to public administration and societal impact. Thirdly, data availability: sufficient publicly accessible sources must be available for analysis. Fourthly, temporal scope: the case must cover a sufficiently long period to permit evaluation of outcomes. Fifthly, stakeholder diversity: multiple groups of stakeholders with differing perspectives must be involved.

Within each case, four embedded units of analysis are distinguished: stakeholders, understood as the different groups of actors and their respective perspectives on the problem; regulatory mechanisms, consisting of the economic incentives, legal rules, and religious-cultural norms

that were employed; outcomes, understood as actual policy outcomes compared with intended objectives, including unintended consequences; and biological constraints, understood as manifestations of specific biological constraints within the concrete policy context.

6.4 Data Collection

This study uses exclusively publicly available information. This principled choice safeguards reproducibility and democratic scrutiny, but limits access to confidential policy information. The balance is struck in favour of transparency because most information relevant to theory testing is available from public sources, and because biological hypotheses relate primarily to observable behaviour rather than private motives.

The empirical illustrations used in addressing the theoretical research questions draw on historical validation through the digital collections of the Dutch National Archives and parliamentary debates available through Statengeneraaldigitaal.nl; international comparisons based on OECD governance indicators and the World Bank's Worldwide Governance Indicators; policy analyses produced by the Netherlands Bureau for Economic Policy Analysis, the Research and Documentation Centre, and the Netherlands Institute for Social Research; and biological literature accessed through PubMed/MEDLINE, PsycINFO, EconLit, and Google Scholar.

For the empirical research questions, primary data sources include CBS StatLine for longitudinal statistics, the Netherlands Institute for Social Research's Continuous Survey of Citizens' Perspectives for social indicators, OECD databases for international comparisons, and ministerial policy evaluations. A specific data-collection plan was developed for each empirical sub-question.

For the cases concerning class conflict, historical and contemporary policy dossiers are analysed to assess the explanatory power of biological constraints. In the case of executive remuneration and variable compensation systems, the analysis draws on international comparative data from the United States, the United Kingdom, the European Union, and Japan; European Banking Authority reports on bonus caps; legal developments such as CRD IV and say-on-pay regulation; and empirical studies of pay–performance relationships. In the case of educational inequality, Dutch policy data covering the period 1968–2020 are combined with international research on the extent to which socio-economic status provides protection against peer pressure, comprising 294 consulted sources. With regard to educational equality, reports by the Dutch Inspectorate of Education document patterns of segregation, Statistics Netherlands provides indicators of educational mobility, research by the Netherlands Institute for Social Research analyses long-term mobility trends, and the OECD's *Education at a Glance* provides a cross-national context.

For the cases concerning race conflict, longitudinal indicators of social cohesion are used to answer ERQ1, ERQ2, and ERQ3. The Continuous Survey of Citizens' Perspectives measures social cohesion over time, migration statistics from Statistics Netherlands provide demographic context, Eurostat migration data permit European comparison, and integration research by the Research and Documentation Centre combines quantitative and qualitative analysis. In relation to educational segregation, the Dutch Inspectorate of Education uses segregation indicators to

trace spatial patterns, Statistics Netherlands documents educational participation by origin, and municipal policy documents reveal strategies for the geographical distribution of pupils.

For the cases concerning sex conflict, outcome indicators and intervention evaluations are used to assess the effectiveness of evolutionarily informed alternatives. Statistics Netherlands provides sex-disaggregated earnings data, emancipation monitoring by the Netherlands Institute for Social Research documents policy efforts, and the OECD Gender Data Portal provides an international comparison. In relation to the #MeToo issue, safety monitoring by the Netherlands Institute for Social Research measures trends in sexual harassment, crime statistics from the Research and Documentation Centre document reported offences, the European Union Agency for Fundamental Rights provides a European comparison, and the academic literature evaluates the effectiveness of interventions. This multi-database approach reduces the risk of disciplinary bias.

The external generalisability of this study is constrained by these choices. The cases examined are situated within a highly developed and institutionally complex society of the type described in the literature as a WEIRD context (Henrich et al., 2010). The findings are therefore not universal, but may possess external validity for comparable societies. The analysis uses pattern matching (Yin, 2018) to identify plausible correspondences between theoretical constraints and policy outcomes; it does not claim to provide causal testing. Its validity is analytical: its value lies in the consistency of interpretation rather than statistical generalisation. Reliability rests on transparent documentation of sources and traceable reasoning (Miles & Huberman, 1994). This minimises the risk of ‘just-so’ explanations without advancing reductionist claims.

6.5 Analytical Framework: A Four-Stage Procedure

A four-stage analytical procedure functions as a template for systematic comparison both within and across conflict categories. Each stage has a distinct analytical purpose and builds incrementally towards biological validation.

Stage 1 consists of a multi-stakeholder problem analysis. Its purpose is to identify why an issue is considered problematic by different groups of actors and where conflicts of value arise. Through systematic document analysis, the following elements are coded for each actor: problem definition, proposed solutions, underlying value orientation, and acceptable trade-offs. The outcome is a structured stakeholder matrix identifying value conflicts and points of convergence.

Stage 2 assesses the effectiveness of traditional policy mechanisms. Its purpose is to document which economic, legal, and religious-cultural interventions were attempted and why they may have failed. Through a comparison between predicted and observed outcomes, the following elements are coded: the intended mechanism of each intervention, predicted effects, observed outcomes, and traditional explanations of failure. The outcome is a systematic failure analysis identifying gaps in conventional explanations.

Stage 3 identifies the relevant biological constraints. Its purpose is to determine which of the ten biological elements are relevant and how they may explain the failure of traditional mechanisms. Through biological mechanism mapping, the following elements are coded for each relevant mechanism: its theoretical relevance to the case, empirical evidence that it was

activated within the context, its predicted effects on policy outcomes, and its incompatibility with traditional mechanisms. The outcome is a biological diagnosis of policy incompatibility.

Stage 4 evaluates the plausibility of biologically informed alternatives. Its purpose is to assess whether biologically compatible alternatives are realistic and empirically supported. Through the construction of counterfactual scenarios, the following elements are evaluated: the biological compatibility of the alternatives, empirical evidence of their effectiveness elsewhere, institutional requirements for implementation, and political feasibility. The outcome is a plausibility assessment of biologically informed alternatives.

Pattern matching constitutes the principal analytical technique. Empirical patterns are compared with the theoretical predictions derived from the biological framework. For each case, the analysis systematically assesses whether the observed outcomes correspond more closely with biological predictions than with traditional explanations.

The analysis therefore proceeds at two levels. Within each case, the policy process is reconstructed chronologically in order to understand how decisions, interests, and events influenced one another. The cases are then compared to identify recurring patterns of policy failure. This comparative stage does not seek to establish causality, but to assess the consistency of underlying mechanisms across different contexts.

6.6 Validity and Reliability

Biological concepts are interpreted through multiple observable dimensions in order to improve interpretative accuracy. Status competition, for example, is identified through both discursive indicators, such as references to prestige or recognition, and behavioural indicators, such as an emphasis on consumption or positional advantage. Convergence between such observations strengthens the credibility of the interpretation without implying quantitative measurement.

Every empirical claim is supported by at least three independent sources in order to achieve triangulation. Academic literature is combined with policy documents and outcome statistics. Qualitative pattern identification is validated, where possible, through quantitative analysis. Although triangulation and variation enhance validity, replicability in social contexts remains inherently limited.

Cases are selected to maximise variation in demographic context, institutional setting, and temporal scope within the Netherlands. International comparisons strengthen external validity through replication across different cultural contexts.

All analytical decisions are documented systematically using explicit decision criteria. Case selection is justified transparently, including the reasons for excluding potential cases. This enables other researchers to replicate the study’s analytical procedure.

6.7 Ethical Safeguards

Descriptive language is used in order to avoid normative terminology. Democratic values are explicitly affirmed, multiple biologically compatible policy options are presented, and discriminatory interpretations are expressly rejected. Biological analysis remains descriptive and does not prescribe preferred societal outcomes.

Specific linguistic rules are applied to prevent deterministic reasoning. Biological mechanisms are described as tendencies — 'people tend to' — rather than as absolute characteristics — 'people are'. Individual differences within groups are systematically emphasised, group stereotyping is explicitly rejected, and dependence on cultural context is repeatedly underlined. Analytical safeguards include reporting variation within groups, focusing on institutional design rather than individual assessment, refusing to make predictions at the individual level, and ensuring that case analysis is conducted only at collective and institutional levels, never at the level of individual persons.

6.8 Methodological Limitations

Case studies in public administration cannot provide definitive causal proof in the manner of experimental designs. This limitation is acceptable because biological realism seeks to identify mechanisms rather than establish statistical causation. For policymakers, understanding how biological mechanisms may operate is potentially more valuable than producing precise estimates of effect size.

Case selection may be unintentionally biased despite the use of explicit criteria. This risk is mitigated through international comparison, temporal variation, and systematic documentation of the selection process. Fully random selection would undermine the purpose of theory testing.

Long-term effects may not yet be fully observable within the available time frame. This limitation is addressed by including historical cases that provide a longer temporal perspective and by focusing on mechanism identification, which may support reasoned expectations about future effects.

6.9 Reflection and Methodological Innovation

The research design adopted here does not introduce a new method, but brings a new perspective into public administration. The principal innovation lies in applying evolutionary plausibility as an additional layer of validation within established qualitative methods. Human behaviour is thereby no longer treated as noise within models of governing, but as an integral part of the explanation of why policy succeeds or fails.

The approach remains interpretative in character. It uses abduction and pattern recognition to reconstruct plausible relationships rather than to establish causality. Its value lies in enriching the explanatory capacity of public-administration analysis: policy is understood as an attempt to channel biologically embedded behavioural patterns rather than disregard them.

The methodological contribution is therefore primarily heuristic. Integrating evolutionary-biological insights into existing interpretative frameworks produces a more realistic approach to human behaviour in governing contexts. In that sense, this study does not constitute a break

with the tradition of public administration, but a recalibration of its explanatory foundations in light of the understanding of human behaviour provided by biology.

Chapters 7 to 10 apply this approach diagnostically across six policy domains. They do not examine how policy ought to be designed, but why policy processes may derail in practice when fundamental biological constraints are disregarded. The empirical analyses therefore do not constitute a definitive test, but an illustration of the explanatory power of the framework developed here.

Chapter 7: Class Conflict — Hierarchy and Distribution

7.1 Introduction

This chapter addresses all three empirical research questions from the perspective of class conflict: conflict over hierarchy and distribution, driven by evolutionary-biological mechanisms including status competition and dominance.

ERQ1 — Explanatory Power: To what extent do biological constraints explain policy failure in relation to class conflict more effectively than traditional explanations?

ERQ2 — Predictive Value: Can assessments of biological constraints reliably predict where policies addressing class conflict will encounter systematic resistance?

ERQ3 — Effectiveness of Alternatives: Do evolutionarily informed policy alternatives demonstrate substantially greater effectiveness than traditional approaches in cases relating to class conflict?

The two selected cases illustrate different aspects of class conflict within the Dutch context. Case A analyses executive remuneration and variable compensation structures, in which biological mechanisms such as status competition, coalition formation, and reciprocity may help explain the escalation of bonus culture despite economic, legal, and cultural countermeasures. Case B examines the persistent problems surrounding educational inequality. These problems have endured despite meritocratic principles of selection and decades of policy intervention between 1990 and 2020.

The cases were selected because they are representative of broader patterns of class conflict and illuminate different biological mechanisms. The executive-remuneration case illustrates status competition within elite networks and coalition formation in remuneration committees, whereas the education case concerns the intergenerational transmission of social position. Both cases provide extensive empirical evidence from public sources and cover a sufficiently long period to permit the evaluation of long-term effects.

The four-stage protocol developed in Chapter 6 is applied systematically in order to assess the explanatory power of biological constraints against traditional policy explanations. For each case, the analysis examines why the situation remains problematic for multiple stakeholders, why conventional regulatory mechanisms have failed, which biological mechanisms may be relevant, and how evolutionarily informed alternatives might contribute to more effective governance.

7.2 Case A: Executive Remuneration and Bonus Culture — Evolutionary Mechanisms in Social Hierarchy

7.2.1 Introduction

Over recent decades, executive remuneration, often comprising variable components such as bonuses and share options, has become a focal point of public debate. Proponents justify such remuneration as a necessary incentive for performance and international competitiveness, whereas critics regard it as a manifestation of a culture of greed that undermines the legitimacy of economic and political institutions. The controversy is not confined to the financial sector: the level and structure of remuneration in non-financial businesses and semi-public institutions have also provoked public indignation.

This case examines why traditional policy measures intended to restrain executive remuneration have had only limited effectiveness and what role biological constraints may play in explaining its persistence. The central question is: *to what extent can evolutionary-biological mechanisms contribute to an understanding of escalating remuneration despite economic, legal, and cultural countermeasures, and what policy alternatives emerge when those mechanisms are accommodated*?

The analysis follows the four-stage procedure set out in Chapter 6. Stage 1 identifies how different stakeholders perceive executive remuneration and which conflicts of value arise. Stage 2 evaluates why traditional economic, legal, and religious-cultural interventions systematically fall short. Stage 3 identifies the relevant biological constraints and examines how they may explain the failure of traditional approaches. Stage 4 assesses the plausibility of biologically informed policy alternatives.

The case focuses on four countries — the United States, the United Kingdom, the Netherlands, and Japan — which represent substantially different institutional contexts but display comparable patterns of remuneration escalation or resistance. The United States is characterised by market-driven remuneration systems subject to limited regulation. The United Kingdom promotes shareholder activism through say-on-pay legislation. The Netherlands applies strict bonus caps in the financial sector. Japan combines cultural norms of restraint with increasing shareholder influence. Despite this variation, executive remuneration remains problematic, either because it continues to escalate or because it erodes legitimacy. This suggests that underlying mechanisms may be operating beyond the scope of conventional policy theories.

7.2.2 Stage 1: Multi-Stakeholder Problem Analysis

The debate on executive remuneration is quintessentially a multi-stakeholder issue in which divergent interests, values, and perceptions collide. This analysis systematically identifies how stakeholders position the phenomenon in the four countries selected, revealing that differences in institutional context do not prevent comparable tensions from arising around market forces, fairness, and legitimacy.

Executives and supervisory or non-executive boards constitute the group responsible for designing remuneration packages. Executives emphasise that bonuses are consistent with market rates and necessary to attract internationally mobile senior talent. In the United States, chief executive officers argue that variable remuneration creates alignment between management and shareholder interests (Frydman & Jenter, 2010). Board members perform a dual role: on the one hand, they exercise a supervisory mandate on behalf of shareholders; on the other, many participate in elite networks within which remuneration norms are mutually legitimised. In the United Kingdom, the Shareholder Spring of 2012 demonstrated how boards defended remuneration packages despite disappointing corporate performance. Dutch supervisory directors operate within stricter legal frameworks but remain sensitive to international benchmarks. Japanese boards have traditionally been dominated by insiders and subject to limited external pressure, although this has gradually changed since 2015 following reforms associated with the Corporate Governance Code.

Employees and their representatives often regard large bonuses as symptomatic of a culture of greed. Their perspective is grounded in reciprocity: remuneration is considered acceptable for as long as it remains proportionate to effort and societal value creation. Data from the AFL-CIO (2023) indicate that the ratio of chief executive to worker pay in the United States rose from 20:1 in 1965 to 344:1 in 2022, generating sustained indignation. In the United Kingdom, the TUC (2023) reports a comparable ratio of 120:1 alongside intensifying public criticism. Dutch trade unions protested particularly strongly against bonuses paid during periods of economic crisis and government financial support. Japan has traditionally displayed lower ratios of approximately 16:1, with cultural norms of collectivism constraining remuneration inequality.

Shareholders and institutional investors occupy an intermediate position. On the one hand, they are sensitive to the potential effect of high remuneration on returns; on the other, they are concerned about reputational risk. Institutional investors in the United States have remained reluctant to intervene despite increasing attention to environmental, social, and governance criteria. The United Kingdom experienced the Shareholder Spring in 2012, during which shareholders at several major companies opposed executive remuneration. At Barclays, Aviva, and WPP, more than 50 per cent of shareholders voted against remuneration packages (Financial Times, 2012). Dutch pension funds pursue a more active form of stewardship and systematically vote against excessive remuneration. Japan is experiencing increasing influence from foreign institutional investors promoting international corporate-governance standards.

Politicians and regulators operate at the intersection of these competing forces. Politicians in the United States periodically debate restrictions on remuneration but have implemented only limited regulation because of an ideological preference for market mechanisms. In 2013, the United Kingdom introduced binding say-on-pay legislation under which shareholders vote on remuneration policy every three years. In 2015, the Netherlands introduced a 20 per cent bonus cap for financial institutions, considerably stricter than the European limit of 100 per cent. Japan maintains limited formal regulation but promotes transparency through disclosure requirements.

The stakeholder analysis identifies three fundamental conflicts of value that persist across national contexts. The first is the tension between market forces and fairness. Executives emphasise competition for talent, whereas employees prioritise distributive fairness. The second is the tension between shareholder interests and public legitimacy. Boards seek to optimise shareholder value but risk provoking public indignation. The third is the tension

between economic efficiency and social cohesion. Variable remuneration is intended to encourage performance, but may undermine social cohesion when perceived as excessive.

7.2.3 Stage 2: Analysis of Traditional Policy Mechanisms

Traditional policy interventions intended to restrain executive remuneration can be grouped into three categories: economic instruments designed to optimise market mechanisms, legal instruments that regulate behaviour through formal rules, and religious-cultural instruments intended to influence norms. This analysis systematically evaluates why each mechanism has had only limited effectiveness.

Economic mechanisms are based on principal–agent theory, according to which optimal contracts fully align executive performance with shareholder interests. Extensive pay-for-performance systems are common in the United States, with variable components accounting for between 60 and 80 per cent of total remuneration. Review studies nevertheless indicate that the relationship between chief executive remuneration and company performance is weak and inconsistent. Frydman and Jenter (2010) report that pay–performance elasticity is statistically insignificant in many cases and, where significant, remains economically negligible, with a median of approximately 0.2–0.3. This suggests that remuneration is not determined primarily by actual performance, but by other underlying mechanisms.

A central problem concerns the use of benchmarking by remuneration committees. Committees select peer groups of comparable companies and systematically position their own executive remuneration above the average, ostensibly in order to ‘retain top talent’. Research by Bizjak, Lemmon, and Naveen (2008) shows that the composition of such peer groups is strongly associated with the level of chief executive remuneration, independently of actual performance. This practice creates a self-reinforcing upward effect: when every company seeks to keep its remuneration above the average, the average itself rises continuously. Data from the United States illustrate the scale of this process. Between 1978 and 2022, chief executive remuneration increased by more than 900 per cent, whereas average employee remuneration rose only modestly over the same period (Economic Policy Institute, 2023). This divergence cannot readily be explained by traditional economic theory, which assumes that remuneration follows performance.

The United Kingdom employs comparable pay-for-performance systems and has experienced a similar escalation. Average remuneration among FTSE 100 chief executives rose from £1.2 million in 1998 to £3.9 million in 2022 (High Pay Centre, 2023). Before 2015, Dutch financial institutions displayed comparable patterns, with bonuses rising systematically despite limited differentiation in performance. Japan has traditionally relied less heavily on variable remuneration, but performance-related pay is gradually increasing under pressure from international investors.

The systematic limitations of economic mechanisms converge around the discrepancy between theoretically optimal contracts and actual remuneration practices. Economic theory assumes that board members act as neutral principals who design optimal contracts. Empirical evidence, however, suggests that boards systematically raise remuneration through strategic peer-group selection and discretionary bonuses. This indicates the operation of mechanisms that conventional economic theory does not adequately conceptualise.

Legal mechanisms seek to restrain remuneration through formal rules and shareholder voting rights. Since the Dodd–Frank Act of 2010, the United States has had a non-binding say-on-pay regime under which shareholders cast advisory votes on remuneration packages. Evaluations show that these votes have had limited impact: only 2–3 per cent result in rejection, and boards frequently retain remuneration packages even after shareholders have opposed them (Ertimur, Ferri, & Oesch, 2013). This indicates the limited effectiveness of non-binding mechanisms.

Since 2013, the United Kingdom has had binding say-on-pay legislation under which shareholders vote on remuneration policy every three years. Although this legislation resulted in several prominent rejections during the Shareholder Spring, the systematic escalation of remuneration has continued. The High Pay Centre (2023) reports that FTSE 100 chief executive remuneration continued to rise despite greater shareholder influence.

In response to public indignation during the financial crisis, the Netherlands introduced a 20 per cent bonus cap for financial institutions in 2015. In its evaluation, the European Banking Authority (2016) concluded that this measure reduced variable remuneration but not total remuneration: financial institutions compensated by increasing fixed salaries and allowances. This example shows that legal interventions often generate compensatory behaviour that undermines their intended effect.

The systematic limitations of legal mechanisms converge around limited enforceability and compensatory behaviour. Non-binding votes prove insufficient to discipline boards. Binding votes and bonus caps prompt adjustments through which the total level of remuneration is preserved by alternative means. These patterns suggest that legal interventions address symptoms while leaving underlying mechanisms largely untouched.

Religious-cultural mechanisms seek to influence norms through public opinion and cultural values. Public opinion in the United States is highly critical of executive remuneration. Pew Research (2023) reports that 78 per cent of Americans consider executive remuneration excessive. This public indignation has, however, produced only limited behavioural change: remuneration continues to rise despite normative criticism. The United Kingdom displays a comparable pattern, with intense public criticism having little effect on actual remuneration practices.

The Netherlands has Calvinist norms of restraint that culturally stigmatise excessive remuneration. These norms facilitated the introduction of bonus caps but proved insufficient to prevent escalating remuneration in the semi-public sector. Housing associations and hospitals experienced public controversy over executive remuneration despite cultural expectations of restraint. Japan combines Confucian collectivism with a cultural emphasis on group harmony, which has traditionally produced lower remuneration inequality. Under pressure from international investors and corporate-governance reforms, however, Japanese executive remuneration is also gradually rising.

The systematic limitations of religious-cultural mechanisms converge around the discrepancy between normative consensus and behavioural change. Public indignation and cultural norms can articulate discontent powerfully, but remain insufficient to restructure behaviour where other mechanisms facilitate remuneration escalation. Patterns in the United States, the United Kingdom, and the Netherlands illustrate the coexistence of continuing cultural criticism and rising remuneration. Japanese norms of restraint appear more effective, but come under pressure as international market influences intensify.

The convergence of policy failure across three mechanisms and four countries suggests that traditional explanations are insufficient. Economic mechanisms fail because remuneration follows a logic other than performance alone. Legal mechanisms fail because interventions generate compensatory adaptations. Religious-cultural mechanisms fail because normative criticism does not produce sufficient behavioural change. This convergence justifies exploration of alternative explanatory frameworks capable of conceptualising deeper mechanisms.

7.2.4 Stage 3: Identification of Biological Constraints

The persistent limitations of traditional interventions point to underlying mechanisms that shape remuneration behaviour in ways that conventional policy theories do not adequately explain. This third stage of the analysis identifies which biological constraints, as conceptualised in Chapter 3, are relevant to explaining the continuing escalation of executive remuneration. Three mechanisms emerged as particularly important: social hierarchy, coalition formation, and altruism and reciprocity.

Social hierarchy refers to evolutionarily shaped mechanisms through which status competition structures behaviour in competitive contexts. Status functions as a motivating force in its own right, distinct from absolute wealth or power, and signals relative rank within groups. When remuneration committees benchmark against peer groups, a systematic upward drift emerges: each board seeks to position its remuneration package above the reference-group average, causing that average to rise continuously. This effect has been documented consistently. Bizjak, Lemmon, and Naveen (2008) show that peer-group composition is significantly associated with chief executive remuneration independently of performance. Data from the United States illustrate this dynamic: chief executive remuneration increased by 940 per cent between 1978 and 2022, whereas average employee remuneration rose by 12 per cent (Economic Policy Institute, 2023).

This escalation cannot readily be explained by traditional economic theory, which assumes that remuneration follows performance. Review studies report weak and inconsistent relationships between pay and performance (Frydman & Jenter, 2010). This points to a status logic in which relative position carries greater weight than absolute performance. Cross-national evidence supports this pattern: executive remuneration in the United States, the United Kingdom, and the Netherlands displays comparable escalation despite substantial differences in institutional context. Even in the Netherlands, where strict bonus caps apply, compensatory increases occurred through fixed salaries and allowances, suggesting that status competition persists despite legal intervention.

Japan provides a contrasting pattern that illustrates the conditional expression of status competition. Japanese collectivist norms traditionally signalled status primarily through group harmony and seniority rather than through individual monetary remuneration. Chief executive-to-worker pay ratios remained at approximately 16:1, substantially below those in the United States, at 344:1, and the United Kingdom, at 120:1. This suggests that status competition can be channelled through non-monetary routes when cultural and institutional arrangements facilitate this. Under pressure from international investors and corporate-governance reforms introduced since 2015, however, Japanese executive remuneration has also gradually increased.

This illustrates that status competition continues to operate when the institutional context changes.

Coalition formation refers to evolutionarily shaped mechanisms through which individuals display loyalty towards in-group members and mutually legitimise group norms. In the context of remuneration, coalition formation manifests itself through overlapping elite networks in which board members and executives legitimise one another's remuneration practices. The managerial power approach documents the substantial influence executives exercise over their own remuneration contracts, particularly where external countervailing power is weak (Bebchuk & Fried, 2004). This produces remuneration arrangements that maximise personal advantage rather than optimise shareholder value.

Evidence from the United States illustrates this dynamic: board members who are or have themselves been chief executives systematically approve higher remuneration than board members without such experience. This pattern suggests in-group loyalty, with board members legitimising remuneration norms that also protect their own position. Comparable patterns are visible in the United Kingdom. During the Shareholder Spring of 2012, boards defended remuneration packages despite disappointing performance and shareholder opposition. Dutch supervisory directors operate within stricter legal frameworks, but remain sensitive to international benchmarks maintained by the same elite networks.

Coalition formation helps explain the limited effectiveness of legal intervention. Non-binding say-on-pay votes are insufficient to discipline boards because in-group loyalty persists. Binding votes and bonus caps generate compensatory adaptations through which total remuneration is maintained by alternative means. These patterns suggest that coalition formation is a fundamental mechanism structuring remuneration practices within elite networks irrespective of formal regulation.

Altruism and reciprocity refer to evolutionarily shaped mechanisms through which individuals facilitate cooperation by means of reciprocal exchange and the punishment of free riders. In the context of remuneration, reciprocity manifests itself in public acceptance of high pay when it is linked to demonstrable value creation, and in public indignation when that connection is absent. Protests by Dutch trade unions during the financial crisis illustrate this mechanism: bonuses paid while institutions were receiving government support were perceived as violations of reciprocity, generating moral indignation that extended beyond purely economic objections.

Public opinion in the United States displays a comparable pattern. Pew Research (2023) reports that 78 per cent of respondents regard executive remuneration as excessive, with particular indignation directed at bonuses paid following poor performance or employee redundancies. Shareholder opposition during the British Shareholder Spring was similarly motivated by the perception that remuneration had become disconnected from performance. This convergence suggests that reciprocity is a fundamental mechanism conditioning public acceptance of remuneration inequality.

Japan illustrates how reciprocity can be institutionalised culturally. Traditional practices under which executive remuneration was linked to company performance, and under which executives accepted salary reductions during periods of crisis, facilitated public acceptance of remuneration inequality. As these reciprocal practices come under pressure from international market forces, however, public criticism of rising executive remuneration is also emerging in Japan.

These three mechanisms do not operate in isolation, but reinforce one another. Status competition drives remuneration escalation through relative comparison. Coalition formation legitimises that escalation within elite networks and protects it against external criticism. Reciprocity conditions public acceptance but generates indignation when remuneration becomes disconnected from performance. Their interaction helps explain why executive remuneration has proved so resistant to intervention: policy addressing one mechanism remains ineffective when the others facilitate compensatory effects.

The empirical manifestations of these mechanisms have been documented consistently across the four countries examined. In relation to social hierarchy, the association between peer benchmarking and remuneration escalation appears robust: organisations benchmarking against international peer groups systematically award higher remuneration than organisations using national reference groups (Bizjak et al., 2008). Chief executive remuneration increased by 940 per cent in the United States between 1978 and 2022, by 325 per cent in the United Kingdom between 1998 and 2022, and by 180 per cent in the Netherlands between 2000 and 2015, before the introduction of the bonus cap. Japanese remuneration traditionally remained stable, but has increased annually by 8–12 per cent since 2015. In relation to coalition formation, board members with chief executive experience reportedly approve remuneration that is systematically 30–40 per cent higher than that approved by board members without such experience, a pattern observed across national contexts. In relation to reciprocity, public indignation systematically peaks when bonuses are paid during rounds of redundancies or periods of government support. Public opinion in the Netherlands, the United States, and the United Kingdom displays comparable patterns, with 70–80 per cent regarding such remuneration as unjust.

7.2.5 Stage 4: Evaluation of Evolutionarily Informed Policy Alternatives

This fourth stage of the analysis assesses whether policy alternatives that accommodate biological constraints are empirically plausible and politically feasible. The focus is on interventions that channel status competition, mitigate coalition formation, and institutionalise reciprocity.

A first alternative involves channelling status competition through non-monetary status signals. Traditional policy seeks to restrict remuneration through caps while leaving the underlying status competition untouched. An alternative approach would restructure status competition through reputation-based recognition and team-based performance indicators. Japanese practices illustrate this approach: status has traditionally been signalled primarily through seniority, group harmony, and long-term loyalty to the company rather than through individual monetary remuneration. This has facilitated lower remuneration inequality without eliminating status competition.

Successful implementation would require cultural and institutional adjustment. Organisations could signal status through public recognition, positions on advisory boards, honours, and reputational capital rather than solely through monetary remuneration. Scandinavian practices, in which senior executives accept lower remuneration in exchange for high social standing and public recognition, illustrate this dynamic. Such alternatives recognise status competition as fundamental, but channel it through socially constructive routes.

A second alternative involves mitigating coalition formation by strengthening external countervailing power. Traditional policy treats board members as neutral principals, but disregards their participation in elite networks. An alternative approach would institutionalise external oversight through binding shareholder votes, mandatory independent remuneration advisers, and transparency requirements that make coalition formation more difficult. British binding say-on-pay legislation introduced in 2013 illustrates this approach. Shareholders vote on remuneration policy every three years, requiring boards to justify remuneration packages externally. Evaluations indicate that this legislation facilitated several prominent rejections and increased transparency, although systematic remuneration escalation has continued.

The Dutch bonus cap, limiting bonuses to 20 per cent of fixed remuneration in financial institutions, illustrates how legal intervention may disrupt coalition formation when strictly enforced. The European Banking Authority (2016) concluded that variable remuneration declined substantially, although compensatory increases in fixed salaries occurred. This suggests that coalition formation can be mitigated through strict legal frameworks, while status competition continues through alternative channels.

A third alternative involves institutionalising reciprocity by explicitly linking remuneration to long-term value creation and stakeholder value. Traditional policy focuses on short-term shareholder value, but overlooks the extent to which public acceptance depends on broader reciprocity. An alternative approach would introduce deferral mechanisms under which bonuses are postponed until long-term results become visible, together with malus and clawback provisions allowing remuneration to be reduced or recovered following poor performance or unethical conduct.

European banking regulation under CRD IV imposes deferral requirements under which at least 40–60 per cent of variable remuneration must be deferred for three to five years. The European Banking Authority (2016) concluded that these measures reduced risk-taking and strengthened reciprocity by linking remuneration to long-term outcomes. Dutch financial institutions apply comparable arrangements supplemented by malus and clawback provisions. These alternatives recognise that reciprocity is fundamental to public acceptance and institutionalise it through formal mechanisms.

These alternatives are subject to substantial limitations. Non-monetary status signals require cultural changes that are complex and take considerable time. External countervailing power through binding votes may be effective, but also generates compensatory adaptations. Deferral mechanisms institutionalise reciprocity, but complicate remuneration structures and may restrict international mobility. More importantly, these alternatives may reduce remuneration inequality but cannot eliminate it. If status competition is fundamental, remuneration differentials will persist even within optimally designed systems.

Nevertheless, these alternatives suggest that accommodating biological mechanisms may be more effective than denying them. International comparison indicates that policies recognising the persistence of status competition while channelling it through non-monetary routes, recognising the systematic character of coalition formation while institutionalising external countervailing power, and recognising the central importance of reciprocity while formalising it through deferred remuneration may be substantially more effective than interventions seeking to suppress these mechanisms through caps or moral appeals alone.

7.2.6 Conclusion

The analysis of executive remuneration in the United States, the United Kingdom, the Netherlands, and Japan shows that traditional instruments — economic, legal, and religious-cultural — are necessary but have proved only partially effective in practice. Economic mechanisms fail because remuneration is driven not primarily by performance but by status logic. Legal mechanisms fail because interventions generate compensatory adaptations. Religious-cultural mechanisms articulate normative criticism but fail to produce corresponding behavioural change.

The application of an evolutionary-biological lens provides additional explanatory power. Three mechanisms emerged as particularly important. Social hierarchy manifests itself through status competition, which drives remuneration escalation through relative comparison. Coalition formation facilitates mutual legitimation within elite networks, thereby neutralising external criticism. Altruism and reciprocity condition public acceptance: remuneration is legitimised when it is linked to value creation. These mechanisms help explain why intensive policy efforts yield only limited results. The structural dynamics are rooted in widespread behavioural tendencies that traditional policy mixes do not adequately address.

The effectiveness of policy alternatives that take these constraints into account — such as channelling status competition through non-monetary routes, mitigating coalition formation through external countervailing power, and institutionalising reciprocity through deferred remuneration — is plausible. Cross-national comparison lends some support to this conclusion. Japan, which has traditionally channelled status competition through collectivist norms, displays substantially lower remuneration inequality. The United Kingdom, which has institutionalised external countervailing power through binding say-on-pay votes, has achieved greater transparency. The Netherlands, which has embedded reciprocity through bonus caps and deferred remuneration components, has substantially lower variable remuneration.

The central conclusion is that policy addressing excessive executive remuneration may be more effective when evolutionary-biological constraints are treated as design parameters. This approach is not deterministic, but realistic about human nature: policy that disregards human behavioural dispositions encounters resistance and compensatory adaptation, whereas policy that accommodates those constraints increases the likelihood of durable moderation. Cultural and institutional factors nevertheless remain essential. Biological mechanisms help explain the persistence of the problem, but constitute only one layer within a complex configuration of economic, legal, and cultural structures.

The methodological quality of this analysis rests on the convergence of patterns across four institutionally distinct countries representing a broad spectrum of remuneration regimes. Market-driven systems in the United States, shareholder activism in the United Kingdom, legal intervention in the Netherlands, and cultural moderation in Japan provide substantial variation in institutional context. Despite this variation, the patterns converge systematically: status competition drives remuneration escalation where legal constraints are weak; coalition formation neutralises external criticism where elite networks are strong; and reciprocity conditions public acceptance where remuneration remains linked to performance. This convergence suggests that biological mechanisms operate robustly across institutional contexts and may therefore provide an additional explanation without excluding alternative economic, legal, or cultural accounts.

7.3 Case B: Educational Equality in the Netherlands — Evolutionary-Biological Mechanisms in Meritocratic Selection

7.3.1 Introduction — The Dutch Meritocratic Paradox

With the introduction of the Secondary Education Act, commonly known as the *Mammoetwet*, in 1968, the Netherlands established an education system centred on meritocratic principles: talented children were to receive equal educational opportunities irrespective of their social background (Dronkers, 2010). Minister Jo Cals had prepared these reforms during the 1960s with the aim of democratising Dutch education and promoting social mobility (Van Kemenade, 1981). Half a century later, however, both national and international research shows that parents' social background remains a powerful predictor of their children's educational trajectories. The Netherlands Bureau for Economic Policy Analysis concluded that children of highly educated parents are approximately four times more likely to enter pre-university education (*voorbereidend wetenschappelijk onderwijs*, VWO) than children from less highly educated backgrounds, despite decades of policy interventions intended to narrow this gap (CPB, 2017).

This persistent inequality continues despite substantial investment in policies intended to address educational disadvantage. Since the introduction of the Educational Priority Policy in 1985, the Netherlands has cumulatively invested considerable sums in additional support for disadvantaged pupils (Mulder, 2014). The Netherlands Institute for Social Research documents that these investments have produced local successes but have had little effect on national patterns of social stratification (SCP, 2019).

This case examines why genuine meritocracy remains so persistently unattainable within Dutch education. Traditional explanations point to inadequate funding, insufficiently objective assessment, or cultural bias. The present analysis explores whether evolutionary-biological mechanisms can contribute to understanding this persistence. It does so through systematic comparison with the education systems of Finland, Germany, and Switzerland, examining how different institutional arrangements interact with fundamental patterns of human behaviour concerning parental investment, social recognition, and adolescent development.

7.3.2 Stage 1 — Multi-Stakeholder Problem Analysis

Since 1990, Dutch national policymakers have invested substantially in reducing educational disadvantage. The Netherlands Bureau for Economic Policy Analysis calculated that cumulative public expenditure on disadvantage policy over two decades was considerable, with interventions ranging from additional funding for schools serving disadvantaged populations to early-childhood education programmes (CPB, 2017). The Educational Priority Policy specifically targeted schools with large numbers of pupils from lower socio-economic backgrounds by providing additional funding and reducing class sizes (Driessen, 2013). Despite these efforts, policymakers continue to face the persistent phenomenon that educational outcomes correlate systematically with parents' socio-economic status.

Education professionals encounter a paradox in their daily practice. Teachers and school leaders implement standardised assessment systems and pursue explicit equal-opportunities policies, yet simultaneously observe that children from different social backgrounds systematically follow different educational trajectories. In its annual reports, the Dutch Inspectorate of Education documents that the teacher's track recommendation at the end of primary school remains the strongest predictor of a pupil's eventual educational trajectory despite efforts at standardisation (Inspectie van het Onderwijs, 2021). Teachers report that they seek to provide objective recommendations, but experience tension between what they observe in the classroom and what they know about pupils' home circumstances (Korpershoek, 2016). The Inspectorate further documents that teachers tend to locate the causes of educational inequality primarily in cultural disadvantage and parental involvement rather than in the selection system itself.

Parents from different social strata adopt different strategies in supporting their children, producing unequal outcomes despite formally equal access to education. The Netherlands Institute for Social Research shows that differences in time investment, financial resources for supplementary support, and social networks follow systematic patterns associated with parental education (SCP, 2019). Statistics Netherlands documents that these differences are expressed in concrete practices such as the use of private tutoring, school-choice strategies, and participation in extracurricular activities (CBS, 2021). It also identifies systematic differences in educational expenditure across income groups, with higher-income households spending proportionally more on tutoring, learning materials, and extracurricular activities (CBS, 2020).

Highly educated parents possess greater reserves of cultural and social capital, which they can deploy strategically to maximise their children's educational opportunities. More important still is the transmission of practical knowledge about the education system. Highly educated parents are more likely to know which schools enjoy strong reputations, how much weight the teacher's track recommendation carries relative to the Cito test, when private tutoring may be useful, and how to communicate effectively with teachers. Such knowledge enables them to make more informed choices and provide more targeted support for their children's schoolwork.

Pupils themselves experience the Dutch system as imposing an early and consequential judgement on their abilities and future prospects. Research by the Research Centre for Education and the Labour Market shows that many pupils experience selection at the age of twelve as effectively irreversible, despite the formal availability of routes between educational tracks (ROA, 2020). This produces different responses: some pupils are motivated by competition, whereas others become discouraged by early categorisation. Pupils from lower socio-economic backgrounds in particular may experience the selection process as a barrier that restricts their future prospects.

International comparison reveals that other Western countries face similar challenges, although to differing degrees. OECD data indicate that socio-economic background has a smaller effect on educational outcomes in Finland and Switzerland than in the Netherlands, whereas Germany displays comparable or greater effects (OECD, 2021). This variation suggests that institutional differences do matter, although no country has fully realised complete meritocracy.

7.3.3 Stage 2 — Analysis of Traditional Mechanisms

Since the 1990s, Dutch education reforms have focused on three categories of instruments, each reflecting a different logic for achieving equality of educational opportunity. Analysis of these approaches through policy evaluations reveals systematic limitations in their effectiveness.

Economic instruments sought to remove financial barriers to educational participation. From 1985 onwards, educational disadvantage policy allocated additional funding to schools with large numbers of pupils from lower socio-economic backgrounds, ranging from increased staffing allocations to supplementary resources for additional instruction (Driessen, 2013). The underlying assumption was that resource shortages constituted the primary cause of differences in achievement. Evaluations by the Netherlands Bureau for Economic Policy Analysis nevertheless show that material compensation has had only limited effects on reducing socio-economic gradients in educational outcomes (CPB, 2017). Although individual schools were able to demonstrate measurable improvements, national patterns of social stratification changed very little. This suggests that financial incentives are insufficient where systematic differences in parental involvement, cultural capital, and social networks persist.

Legal instruments sought to ensure objectivity through standardised procedures and external assessment. The introduction of the national primary-school leavers test in 1988, later replaced by the *Eindtoets Basisonderwijs*, was intended to make track recommendations more objective and exclude social bias (Korpershoek, 2016). The Dutch Inspectorate of Education was granted extensive powers to monitor quality and equal treatment. Research nevertheless shows that the teacher's recommendation remains the strongest predictor of a pupil's eventual educational trajectory, outweighing even standardised test results (Inspectie van het Onderwijs, 2021). This suggests that legal and procedural objectification is insufficient to eliminate systematic differences in assessment. Despite objective test scores, teachers appear to provide different recommendations to pupils with comparable levels of attainment but different social backgrounds, possibly because of implicit assumptions concerning home circumstances and developmental potential.

Religious-cultural instruments sought to change values through awareness campaigns and diversity programmes. The Ministry of Education conducted several campaigns intended to challenge stereotypical beliefs about intellectual ability and social background. These interventions assumed that cultural prejudice was the principal cause of inequality and that greater awareness would lead to behavioural change. Evaluations nevertheless show that attitudinal change alone is insufficient to disrupt structural patterns (SCP, 2019). Even where teachers explicitly endorse equal treatment, implicit preferences and expectations continue to influence their assessments. Experimental research indicates that implicit biases are widespread and systematically affect educational judgements, including those made by teachers who explicitly endorse equal-opportunities principles (Devine et al., 2012). Cultural instruments overlook the fact that social stratification rests not only on prejudice, but also on actual differences in parental resources and strategies.

The three mechanisms failed because each proceeded from a different but overly restricted assumption about the causes of inequality. Economic instruments assumed that additional funding would solve the problem, legal instruments assumed that objectivity would be sufficient, and cultural instruments assumed that awareness would change behaviour. Thus far, these approaches have paid little attention to the probably underlying dynamics of parental investment within competitive education systems, the social hierarchy reinforced by status

competition through education, and the vulnerability of adolescents at critical moments of selection.

7.3.4 Stage 3 — Identification of Biological Constraints

Four evolutionary-biological mechanisms may contribute to explaining why meritocratic selection remains so persistently unattainable in Dutch education. These mechanisms do not operate deterministically, but constitute constraints that shape how institutional arrangements manifest themselves in practice.

Mechanism 1: Parental investment. Evolutionary-biological research shows that parents have evolved mechanisms for investing resources, time, and energy in the welfare and future reproductive prospects of their offspring (Trivers, 1974). These mechanisms are manifested in parents' willingness to incur substantial personal costs in order to improve their children's future prospects, and in systematic resistance to policy interventions that may threaten those prospects. In educational contexts, this means that parents with greater resources will tend to deploy them as a priority in order to maximise their children's educational opportunities, irrespective of collective considerations or redistribution. In modern contexts, this is translated into differential educational investment that creates cumulative advantages for children from different social backgrounds.

This dynamic helps explain why economic compensation through educational-disadvantage policies remains only partially effective: highly educated parents simply increase their own investment in order to preserve their relative advantage. Statistics Netherlands documents that more highly educated parents systematically devote more time to homework support, arrange private tutoring more frequently, and pursue more active school-choice strategies (CBS, 2021). Such behaviour is not necessarily cynical or selfish, but reflects a deeply rooted motivation to protect the future of one's own offspring. Policy interventions that disregard this fundamental motivation encounter emotionally charged resistance because they underestimate parents' willingness to allocate available resources preferentially to their own children.

Recent international research on the protection afforded by socio-economic status against peer pressure during adolescence indicates that families of higher socio-economic status systematically employ strategies to protect their children from negative peer influence during the critical ages of eleven to fourteen (Steinberg & Monahan, 2007). This protection is manifested through strategic network selection, the transmission of cultural capital, and skills in navigating institutions, which ensure that academic achievement is socially valued rather than stigmatised.

Mechanism 2: Social hierarchy. Anthropological research shows that hierarchical organisation is widespread in human societies and that status competition is a fundamental driver of human behaviour (Brown, 1991). In education systems, social hierarchy manifests itself through the concentration of status competition on a single dominant educational route. The Dutch system assigns the greatest symbolic value to pre-university education, or VWO, as the gateway to university education and prestigious occupations. This creates zero-sum competition in which status gains for one group necessarily entail status losses for others.

This dynamic helps explain why legal and procedural objectification remains insufficient. Even where selection is formally objective and based on standardised assessment, the concentration of status on a single route continues to reproduce systematic inequality. Parents with greater resources can prepare their children more effectively for this competition through pre-school education, extracurricular activities, and private tutoring. The Research Centre for Education and the Labour Market documents how this advantage accumulates throughout primary education and culminates in the critical selection decision made at the age of twelve (ROA, 2020). Alternative routes such as pre-vocational secondary education, VMBO, and senior secondary vocational education, MBO, are systematically assigned lower positions within the social hierarchy, further increasing pressure on the VWO route.

Human beings possess evolved tendencies towards rapid social categorisation that operate automatically and unconsciously, including among individuals who explicitly endorse egalitarian beliefs. This pattern illustrates how institutional actors may be inclined to externalise problems by attributing them to factors beyond their direct control, possibly as a result of cognitive processes that facilitate social categorisation. International comparison shows that these mechanisms are expressed across different cultural contexts, suggesting that they may form part of universal human cognitive architecture rather than being exclusively culture-specific phenomena.

Interaction between mechanisms: life-stage vulnerability and parental-investment strategies. Developmental-psychological research shows that adolescence is a critical stage of life during which identity formation, social comparison, and sensitivity to status reach particularly high levels (Erikson, 1950). In the Dutch education system, selection at the age of twelve occurs precisely during this vulnerable period, causing life-history strategies and parental investment to reinforce one another. Young people are then especially sensitive to external evaluation and social labelling: early allocation to educational tracks functions as a public classification that may have enduring effects on self-image and motivation.

Sensitivity to peers reaches a peak during early adolescence. Social acceptance within the peer group then assumes greater importance than formal academic achievement. Within many peer cultures, intellectual effort or a strong orientation towards school does not enhance status, but instead creates social risk: high-achieving pupils may lose status or be mocked as ‘swots’ or ‘nerds’ (Steinberg & Monahan, 2007). This reversal of status logic helps explain why motivation frequently declines during the first years of secondary education, particularly in contexts where academic success is not socially rewarded.

This dynamic is intensified by socio-economic differences. In higher-SES families, parental investment can partially buffer this process because parents manage their children’s social environment more actively — a strategy Annette Lareau (2003) describes as *concerted cultivation*, a deliberate and highly organised approach to child-rearing. Parents of lower socio-economic status, by contrast, more often follow what Lareau calls the *accomplishment of natural growth*. Their children are consequently more exposed to peer norms and status pressures during this stage of life, precisely when biological maturation, self-control, and academic performance are most consequential for their subsequent educational trajectories.

Longitudinal data from Germany’s tripartite education system (NEPS, 2018) indicate that parental guidance within academic tracks can effectively buffer the negative effects of age-related vulnerability, whereas such protection is largely absent within non-academic tracks. The Dutch system selects pupils at a point when biological development varies considerably

between individuals. Natural differences in maturation — which partly correlate with socio-economic background — may consequently be translated structurally into unequal educational outcomes. From the perspective of biologically informed public administration, this means that education policy can be sustainable only when it takes account of the interaction between life-stage sensitivity and parental investment, rather than treating both as purely social variables that can simply be corrected through policy.

The Korean examination system as an extreme manifestation. The South Korean education system provides an illustrative example outside the Dutch context. It is internationally known for its intense performance pressure and competition. Access to universities is determined almost entirely by a single national entrance examination, the College Scholastic Ability Test, or CSAT, known locally as the *Suneung*. The result of this one-day examination determines not only the pupil's academic trajectory, but also functions as a status signal for the entire family.

This system maximises all the biological mechanisms simultaneously. Parental investment manifests itself in a vast private-tutoring industry in which families spend substantial proportions of their income on cram schools and private lessons. Social hierarchy is concentrated entirely on admission to a small number of elite universities, with status differences between universities being greatly amplified. Adolescent vulnerability is intensified because the entire secondary-school trajectory is structured around preparation for this single moment. Life-history strategies are disregarded because all other dimensions of development are subordinated to examination preparation.

Studies indicate increased risks of burnout and depression among pupils (Lee & Larson, 2000). Inequality also increases: children from wealthier families have access to a greater number and higher quality of cram schools, whereas less affluent parents experience increasing financial pressure. The system therefore systematically reproduces socio-economic differences despite policy initiatives formally intended to promote equality.

The Korean example illustrates how policy can amplify rather than moderate the force of biological constraints. Whereas Finland and Switzerland limit the effects of parental investment and social hierarchy through later selection, Korea maximises these mechanisms by focusing early and exclusively on a single decisive examination. The comparison demonstrates that evolutionary-biological constraints may be universal, but that their expression depends strongly on institutional design.

7.3.5 Stage 4 — Plausibility of Evolutionarily Informed Alternatives

7.3.5.1 Cross-National Natural Experiments — Biological Mechanisms in Different Contexts

Comparison of national education systems provides insight into how institutional arrangements may interact with biological mechanisms. Viewed as natural experiments, these comparisons illustrate how policy design can either accommodate or amplify such mechanisms.

Natural experiment 1: Timing of selection as a biological variable. Germany, with selection at the age of ten: selection takes place before the adolescent developmental phase, meaning that peer competition has relatively little influence while parental investment and teacher

assessment exert maximum effects. PISA data show substantial SES effects that can be attributed primarily to systematic differences in parental support and school-choice strategies. The early timing means that biological mechanisms associated with adolescent status competition play little role, while differences in parental investment exert correspondingly greater influence.

The Netherlands, with selection at the age of twelve: selection coincides with the onset of adolescence, meaning that all four biological mechanisms — parental investment, assessor bias, adolescent peer competition, and life-history strategies — are activated simultaneously. This may explain why SES effects in the Netherlands remain substantial despite selection occurring later than in Germany. The timing intensifies both adult and peer influences at the critical moment of selection.

Finland, with selection at the age of sixteen: selection takes place after the most sensitive phase of adolescent development, when pressure towards peer conformity has diminished and cognitive maturation is more evenly distributed. OECD data show the smallest SES effects among comparable countries, although differences in parental investment continue to operate during earlier stages of the educational trajectory. Later selection appears to bypass some adolescent biological mechanisms effectively.

Natural experiment 2: Multiple routes versus a single hierarchy. Switzerland has a dual prestige system in which academic and vocational tracks both enjoy social recognition. Status competition is consequently distributed across several ladders rather than concentrated on a single elite route. This accommodates the mechanism of social hierarchy by providing different routes to status. SES effects remain present, but are distributed across different tracks rather than concentrated on university education.

The Netherlands has a dominant hierarchy in which the VMBO–HAVO–VWO system creates a clearly defined status ladder. Parental investment and status competition are concentrated on securing access to VWO and the subsequent university route. This intensifies biological mechanisms of competition because only one dominant definition of educational success exists.

This comparison suggests that institutional design can influence how biological mechanisms are expressed without eliminating them entirely.

7.3.5.2 Predictive Biological Hypotheses

This section shows how falsifiable hypotheses can be derived from the analysis of the Dutch education case. Its purpose is to make explicit why the biological constraints identified in Chapter 3 generate particular testable predictions. The section therefore functions as a methodological record, transparently demonstrating how empirical observations are translated into claims that differ from traditional sociological explanations and are amenable to empirical testing.

The first hypothesis, the *selection-timing correlation,* proposes that the age at which pupils are selected is associated with the extent to which their socio-economic background influences their educational trajectory. The Dutch system selects pupils during this period of heightened susceptibility. The German system selects pupils at or shortly before its onset, meaning that peer influence may play a more limited role in the initial selection decision, but may subsequently reinforce the effects of early tracking within differentiated peer environments.

The Finnish system largely avoids this interaction by postponing selection. From a biological perspective, the prediction is that countries postponing selection until after the peak in social susceptibility will systematically display smaller SES effects because sensitivity to peers has already begun to decline. Traditional education theories, by contrast, are presented here as assuming that the timing of selection has no systematic effect and that inequality is determined primarily by educational quality and funding.

The second hypothesis, the *parental-compensation mechanism,* proposes that differences in parental investment explain much of the persistence of inequality. Although Dutch programmes such as educational-disadvantage policy have committed substantial resources, analyses by the Netherlands Bureau for Economic Policy Analysis and the Netherlands Institute for Social Research indicate that structural inequality has remained largely intact. Parents from higher socio-economic backgrounds support their children not only financially, but also through cultural and social capital: they possess knowledge, networks, and guidance that policy cannot readily replace. From a biological perspective, financial compensation is therefore only partially effective because parental investment constitutes a multidimensional adaptive system. Traditional approaches, by contrast, assume that sufficient financial resources can largely neutralise the effects of socio-economic background.

The third hypothesis, the *age effect of peer conformity*, emphasises the importance of the biological timing of social susceptibility. Longitudinal research by Steinberg and Monahan (2007), together with recent inspectorate reports, indicates that pupils between the ages of ten and thirteen are particularly sensitive to peer pressure. The Dutch system selects pupils precisely during this peak, whereas the German system is described as intensifying the effect through even earlier selection and the Finnish system as avoiding it by postponing selection. From a biological perspective, selection during this vulnerable stage produces stronger SES effects because peer-group influence may override pupils' motivation and aspirations. Traditional explanations, by contrast, treat group influence as constant and independent of the age at which selection takes place.

The fourth hypothesis, the multiple-routes effect, concerns the structure of status competition within education systems. In Switzerland, both academic and vocational routes enjoy high social standing, distributing status competition across multiple pathways. In the Netherlands, by contrast, prestige is concentrated on VWO, increasing pressure on that route and reinforcing socio-economic differences. Biologically informed models predict that systems offering multiple prestigious routes will display a lower concentration of SES effects because status competition is distributed more evenly. Traditional theories, by contrast, proceed from a meritocratic logic in which outcomes are determined exclusively by the absolute quality of education, irrespective of institutional structure.

Formulating these hypotheses explicitly demonstrates that an evolutionary-biological perspective generates systematically different predictions from traditional approaches.

7.3.5 Evolutionarily Informed Policy Options

Evolutionary insights suggest institutional adjustments capable of accommodating biological mechanisms without lapsing into deterministic fatalism. These alternatives recognise that biological tendencies can be influenced through institutional design.

Developmentally sensitive timing. A gradual transition in selection could involve experimentation with flexible grouping that preserves opportunities for transfer between tracks until the ages of fourteen or fifteen, thereby accommodating adolescents' neurological and cognitive development more effectively. Dutch schools are already experimenting with broad-based transitional classes that apply these principles (Driessen, 2018). By postponing selection until after the age of sixteen, education systems may avoid the most critical period of adolescent identity formation. Finland implemented this model through comprehensive education until approximately the age of fifteen, followed by differentiated routes in upper-secondary education. Evaluations show that this system produces smaller socio-economic gradients than early-selection systems while achieving comparable academic outcomes (OECD, 2021). The proposed mechanism is that delaying definitive categorisation creates more opportunities for correction and accommodates pupils whose development occurs later.

Channelling parental investment. Rather than leaving parents to compete individually for advantages for their own children, education systems could redirect parental energy towards collective activities that benefit all pupils. This principle acknowledges the biological drive towards parental investment but channels it towards socially productive objectives. Systematically providing less advantaged parents with information about the education system may mitigate implicit advantages derived from social and cultural capital. Several Dutch municipalities have experimented with courses for parents on school choice and with mentoring programmes through which experienced parents share their knowledge. Evaluations suggest that such interventions can narrow differences in school-choice strategies (SCP, 2019).

Status diversification. Multiple systems of recognition could distribute the effects of social hierarchy by extending recognition to artistic, practical, social, and physical excellence. This acknowledges hierarchy formation as a widespread human phenomenon while creating opportunities for multiple status ladders to operate in parallel, enabling more children to receive recognition for their particular talents. Assigning comparable social value to multiple educational routes can distribute rather than concentrate status competition. Switzerland has implemented this through its dual system, in which vocational education enjoys explicit prestige and direct labour-market value. The Swiss system produces smaller earnings differentials between university-educated and vocationally trained workers than the Dutch system, while youth unemployment remains structurally lower (OECD, 2021).

Reducing disparities in parental knowledge. Support programmes for parents could be developed to reduce differences in knowledge of, and ability to navigate, the education system. Concrete measures might include courses for parents on the Dutch education system, mentoring programmes in which experienced parents share knowledge about school choice and educational support, and structured provision of information about educational opportunities.

These four alternatives share a common premise: they do not seek to eliminate evolutionary-biological mechanisms, but to accommodate them through institutional design. The available empirical evidence suggests that this accommodative approach may be more effective than traditional approaches that disregard or attempt to suppress biological mechanisms.

7.3.6 Conclusion

This analysis suggests that evolutionary-biological mechanisms may provide an additional lens through which to understand the persistence of educational inequality in the Netherlands. The timing of selection at the age of twelve, the concentration of status competition within a single educational hierarchy, and systematic differences in parental protective mechanisms may help explain why decades of policy reform have had only limited effects in promoting meritocratic principles within education.

International comparison shows that different institutional arrangements can affect how biological mechanisms are expressed. Finland's later selection appears to avoid some forms of adolescent vulnerability, while Switzerland's dual system distributes status competition across multiple routes. These findings suggest that policy design can accommodate biological realities rather than disregard them.

An important methodological qualification concerns the limited causal conclusions that can be drawn from case analysis. The patterns identified make biological explanations plausible, but do not provide definitive proof. Traditional sociological and economic explanations remain relevant, and biological mechanisms function as complementary rather than substitutive explanatory factors.

For Dutch policymakers, the analysis suggests that effective education reform may benefit from explicitly considering evolutionary-biological constraints. This does not imply capitulation to inequality, but the strategic adaptation of interventions to human behavioural tendencies within democratic and egalitarian frameworks.

7.4 Cross-Case Analysis: Biological Mechanisms in Class Conflict

The comparative analysis of the two cases reveals consistent patterns suggesting that biological constraints may contribute explanatory power to the analysis of class conflict. Three evolutionary-biological mechanisms manifest themselves systematically in both contexts and may provide additional explanations of policy failure that traditional approaches overlook. It is important to emphasise that these mechanisms are presented as hypotheses capable of helping to explain empirical patterns, not as deterministic explanations.

Social hierarchy and status competition as a potentially universal mechanism. Both cases illustrate how people systematically invest in their relative social position, often at the expense of absolute prosperity. In the case of executive remuneration, status competition manifests itself in systematic 'ratcheting' — the automatic upward adjustment of remuneration without a corresponding downward mechanism — as remuneration committees benchmark packages above the peer-group average each year, causing bonuses to escalate independently of performance. In the case of educational equality, it may manifest itself in parental investment strategies intended to secure competitive advantages for one's own children, even where this increases societal inequality.

These patterns display cross-cultural consistency and may have biological origins. Neuroscientific findings show that status loss generates patterns of neural activation comparable to those associated with physical threat, which may help explain the intensity of resistance to redistributive measures (Anderson et al., 2012). This mechanism may operate independently of rational economic calculation and may explain why financial compensation is frequently insufficient to overcome resistance to policy.

Status preservation as an intergenerational strategy. Both cases show that actors actively invest in mechanisms that protect acquired status positions and transmit them to the next generation. In the context of executive remuneration, this is manifested in the institutional design of remuneration systems that make downward adjustment difficult and safeguard status retention, for example through ratcheting or concealed forms of remuneration, sometimes described as *stealth compensation*. In education, it is expressed through parental investment strategies in which time, attention, and resources are distributed unequally in order to secure cumulative advantages for one's own children.

From the perspective of evolutionary psychology, it may be hypothesised that such status-preservation strategies are deeply embedded and resistant to policy interventions intended to neutralise them (Trivers, 1972). This may explain why attempts to moderate executive remuneration or introduce compensatory education programmes are frequently undermined by increased private effort, thereby limiting the effectiveness of redistributive measures.

Reciprocity and procedural justice. Reciprocity, as a third evolutionary-biological mechanism, helps explain the intensity of societal resistance to excessive remuneration. In the case of executive remuneration, moral indignation arises when bonuses are paid without a visible relationship between performance and reward, as occurred during the Shareholder Spring of 2012. In education, meritocratic selection is accepted because it appears procedurally fair, despite unequal outcomes resulting from systematic differences in the mechanisms through which parents protect their children against peer pressure.

Evolutionary psychology suggests that mechanisms of reciprocity evolved to facilitate cooperation within small groups and that violations of reciprocal expectations provoke strong emotional responses (Fehr & Gächter, 2002). Successful policy may therefore benefit from explicitly linking contributions to benefits. This can be seen in educational contexts where parental involvement and school investment are connected to tangible improvements for pupils, and in remuneration systems where shareholders use say-on-pay mechanisms to make the relationship between performance and reward more visible.

Answers to the empirical research questions. On the basis of the findings, the three empirical questions can be answered as follows from the perspective of class conflict.

ERQ1 — Explanatory Power. The comparison between education policy and executive-remuneration systems indicates that evolutionary-biological mechanisms offer greater explanatory power than traditional economic or institutional models. In education, parental investment, social hierarchy, and adolescent-specific status competition help explain why meritocratic reforms have produced only limited effects despite substantial policy effort. In executive remuneration, status competition provides a persuasive explanation for the structural upward drift, while coalition formation within elite networks explains why internal legitimation persists for as long as reciprocity and symbolic equilibrium are maintained. Policy that disregards these behavioural mechanisms predictably repeats the same mistakes; policy that recognises and channels them — through measures such as broad-based transitional classes or shareholder voting rights — is more likely to achieve stability and acceptance.

ERQ2 — Predictive Value. The biological approach provides not only ex post explanation, but also predictive capacity. It identifies where policy is likely to encounter structural resistance: namely, where measures interfere with established behavioural logics. Interventions that threaten status hierarchies, parental influence, or the balance within coalitions provoke anticipatory adaptations that neutralise their effects. In this sense, policy failure is not accidental, but arises from evolutionarily embedded configurations of interest. Identifying these mechanisms in advance allows policy design to be aligned more realistically with the likely degree of resistance and the prospects for durable compliance.

ERQ3 — Effectiveness of Alternatives. More effective forms of policy appear to be those in which biological constraints are not suppressed, but absorbed institutionally. Cross-national comparison shows that systems permitting status diversification and gradual adjustment — such as Switzerland's multiple-pathway system or Finland's later selection — generate less dysfunctional competition and more durable gains in equality than policies that seek abruptly to flatten hierarchy. The effectiveness of biologically compatible alternatives therefore rests not on moral superiority, but on structural congruence between policy and human behaviour: policy performs better when it corresponds with the ways in which people seek position within groups, avoid risks, and distribute recognition.

Summary. The answers to the three empirical questions point in the same direction: biological constraints increase the explanatory power of public-administration analysis, provide predictive insight into structural resistance, and offer design principles for more effective policy aligned with human behaviour. Class conflicts are not merely a residual category of social inequality, but expressions of deeply rooted mechanisms that policy can steer only within — not against — the constraints of human nature.

Chapter 8: Race Conflict — Territory and Identity

8.1 Introduction

This chapter addresses all three empirical research questions from the perspective of 'race conflict' in the broad sense of the term. This includes conflicts concerning territory and group demarcation that may be driven and potentially explained by the mechanisms of coalition formation and territorial attachment.

ERQ1 — Explanatory Power: *To what extent do biological constraints explain policy failure in relation to identity conflict more effectively than traditional explanations?*

ERQ2 — Predictive Value: *Can assessments of biological constraints reliably predict where identity-related policies will encounter systematic resistance?*

ERQ3 — Effectiveness of Alternatives: *Do evolutionarily informed policy alternatives demonstrate substantially greater effectiveness than traditional approaches in cases relating to race conflict?*

The two selected cases illustrate different aspects of ethnic and cultural conflict within the Dutch context. Case A concerns immigration and social cohesion between 2000 and 2024, a period during which sustained integration-policy efforts produced mixed results despite substantial investment. Case B analyses educational segregation in major cities between 2000 and 2024, where voluntary school choices generated systematic ethnic clustering that frustrated traditional approaches to integration.

These cases were selected because they provide an opportunity to examine the predictive validity of biological mechanisms. Territorial psychology and coalition formation can generate specific predictions about where and under what conditions policy resistance will arise, which can then be compared empirically with actual policy outcomes. Both cases provide extensive longitudinal data covering a period of twenty-four years and contain 'natural experiments' in the form of policy changes that permit quasi-experimental analysis.

The four-stage protocol developed in Chapter 6 is applied systematically in order to evaluate the predictive value of biological constraints. For each case, the analysis examines why the situation remains problematic for different stakeholders, why conventional regulatory mechanisms fail, which biological mechanisms may be relevant, and how evolutionarily informed alternatives might contribute to more effective governance.

8.2 Case A: Immigration and Social Cohesion — Territorial Mechanisms in Integration

8.2.1 Introduction

In October 2005, the French *banlieues* erupted in flames. Young people of North African origin clashed with the police for several weeks in suburbs around Paris, Lyon, and Marseille (Mucchielli, 2009). Twenty years and billions of euros in integration policy later, the scenario was repeated in June 2023. Germany and Sweden have likewise experienced intense protests concerning immigration policy, contributing to substantial electoral shifts in favour of anti-immigration parties.

The Netherlands and Canada have not experienced comparable dramatic developments, despite facing integration problems of their own, including discrimination in labour and housing markets (Andriessen et al., 2019), territorial segregation in various neighbourhoods (Musterd & Ostendorf, 2013), and the rise of parties critical of immigration. Structural problems nevertheless persist in the Netherlands: field experiments show that systematic labour-market discrimination remains widespread, educational segregation is increasing in certain cities, and the enduring role of Fortuyn, Wilders, and the PVV in the immigration debate demonstrates continuing societal tensions surrounding immigration (Verkuyten & Mepham, 2021). Both countries accommodate substantial immigrant populations — 24 per cent of residents in the Netherlands have a migration background (CBS StatLine, 2022), while 23 per cent of Canadian residents were born abroad (Statistics Canada, 2021) — yet social tensions have developed relatively more stably than elsewhere. This comparative analysis examines why some affluent democracies manage ethnic diversity with greater relative stability, whereas others experience recurrent crises despite comparable resources and good intentions.

The central hypothesis is that all human societies are structured by universal biological mechanisms — territorial attachment, group loyalty, and perceptions of carrying capacity — that function as design constraints on effective governing. These mechanisms are not deterministic, but create predictable tensions when policy disregards or underestimates them. Following the four-stage model developed in Chapter 6, the analysis systematically examines why five comparable welfare states have followed different trajectories in immigration and integration, and whether biological constraints can explain this variation where traditional policy theories fall short.

8.2.2 Stage 1: Multi-Stakeholder Problem Analysis

Stakeholder identification and conflicts of value. Immigration and integration involve five principal stakeholder groups whose objectives are partly incompatible. Established majority populations value social cohesion, cultural continuity, and security, with many experiencing abrupt demographic change as threatening irrespective of the objective benefits of immigration (ISSP, 2020). Immigrant communities seek economic mobility, equality before the law, and cultural recognition, while experiencing systematic discrimination and social exclusion that impede integration (Crul & Schneider, 2010). Policymakers balance economic demand for labour, humanitarian obligations, and electoral pressure, frequently sending contradictory

signals that frustrate both groups. Employers value flexible labour pools and diverse perspectives, but avoid expressing overt support for immigration because of public sensitivities. Civil-society organisations advocate human rights and non-discrimination, but struggle with the tension between universalist values and group-specific claims.

The analysis shows that stakeholders articulate comparable societal objectives but operationalise them from fundamentally different normative points of reference. Majority populations demand restrictive immigration policy and cultural assimilation, which immigrants experience as discriminatory. Immigrant communities claim a right to cultural expression and group organisation, which members of the majority population may interpret as separatism. Policymakers alternate between multicultural accommodation and demands for assimilation, creating an inconsistency that satisfies neither side.

Fundamental value tensions. Three fundamental tensions characterise the governance of immigration and do not admit of purely technical solutions. The tension between individual freedom of choice and collective cohesion is expressed in the question of whether immigrants should be permitted to retain their original identities or required to assimilate. Liberal democracies guarantee individual freedom but also require shared civic values.

The tension between equality and group difference concerns whether ethnic differences should be publicly recognised or disregarded. The French republican tradition denies the relevance of group differences, but may thereby reinforce inequality, whereas multiculturalism recognises groups but may also strengthen segregation (Joppke, 2017).

The tension between universal rights and territorial boundaries concerns who is entitled to access the provisions of the welfare state. Humanitarian principles demand solidarity without boundaries, whereas states are necessarily required to draw boundaries around entitlement (Carens, 2013).

8.2.3 Stage 2: Analysis of Traditional Regulatory Mechanisms

Economic mechanisms: material investment without social cohesion. The economic approach assumes that material equality will reduce segregation and discrimination through labour-market integration, investment in education, and economic incentives. Since the beginning of this century, France has invested very substantial sums in programmes for the *banlieues* through the *Politique de la Ville*, focusing on infrastructure, education, and employment (Cour des Comptes, 2018). Germany spent tens of billions on integration policy, a substantial proportion of which was allocated to language education and labour-market programmes (Bade, 2017). The Netherlands likewise invested extensively in minority policy and urban regeneration through its Major Cities Policy (CBS StatLine, 2022). Sweden multiplied its expenditure on integration during the past decade (Ekonomifakta, 2021).

Despite these substantial investments, their effects on social cohesion remained limited. In France, segregation indices remained largely stable, unemployment in the *banlieues* remained high, and social unrest became more frequent (Baromètre de la Cohésion Sociale, 2020). In Germany, labour-market integration fell short of expectations; unemployment among migrants remained substantially higher than among people without a migration background, residential segregation increased, and electoral support for radical populist parties grew

(Sachverständigenrat für Integration, 2021). In the Netherlands, employment disparities and invitation rates among job applicants improved only marginally, while support for anti-immigration parties remained structurally high (Andriessen et al., 2019). Sweden experienced a clear deterioration, with rising crime rates in disadvantaged neighbourhoods, declining confidence in social cohesion, and a pronounced reduction in public support for immigration (Swedish Integration Board, 2021).

Traditional explanations for the absence of stronger results generally refer to inadequate resources, delayed implementation, or insufficient precision in identifying target groups. These explanations remain unsatisfactory, however, because they do not explain why comparable economic instruments produce measurable effects in other policy domains. The failure of large-scale financial interventions in integration policy to achieve their intended effects suggests that the underlying causes are not primarily economic. The persistence of segregation despite structural investment points to deeper social and psychological mechanisms that cut across the assumptions of economic rationality.

Legal mechanisms: anti-discrimination without behavioural change. The legal approach seeks to eliminate discrimination through legislation, enforcement, and sanctions. All five countries introduced comparable anti-discrimination frameworks (Joppke, 2017). France follows a republican model involving a strict separation of church and state and a prohibition on collecting ethnic data. Germany applies the *Allgemeines Gleichbehandlungsgesetz* of 2006, which provides individual legal protection. The Netherlands introduced the Equal Treatment Act in 1994, including an active duty of non-discrimination. Sweden operates the most extensive anti-discrimination framework through the *Diskrimineringsombudsmannen*. Canada applies the Canadian Charter of Rights and Freedoms, with multiculturalism forming part of official state doctrine.

Legal interventions produced mixed results. Although formal equality increased, actual discrimination remained strikingly persistent. In France, applicants with North African names continued to receive substantially fewer invitations to interview despite the republican ideal of equality (Petit et al., 2019). German studies reported comparable patterns: substantial disadvantage in both labour and housing markets despite the protection provided by the *Allgemeines Gleichbehandlungsgesetz*. Audit studies in the Netherlands likewise confirmed persistent discrimination in recruitment and housing allocation despite active enforcement (Andriessen et al., 2019). Even in Sweden, which has one of Europe's most extensive legal frameworks, structural inequality remained clearly visible.

Legal interventions appear less effective because external coercion cannot readily change subjective attitudes. Discrimination shifted from overt forms towards subtler mechanisms that are difficult to establish legally. Employers developed criteria concerning 'social fit' that concealed ethnic preferences. Landlords employed implicit selection mechanisms that formally respected equality while producing exclusion in practice.

Cultural mechanisms: attitudinal change without behavioural effects. The cultural approach seeks to promote tolerance and acceptance through education, media campaigns, and intergroup contact. All five countries invested substantially in diversity education, anti-discrimination campaigns, and intercultural dialogue (Verkuyten & Mepham, 2021). Surveys covering the period from 2000 to 2020 show that explicit attitudes improved significantly in the Netherlands, Germany, and Sweden (Allensbach Institut, 2022; SOM Institute, 2022).

Social-network analyses nevertheless show consistently across all the countries examined that friendships, marriages, and membership of voluntary associations remain predominantly concentrated within people's own ethnic groups, irrespective of length of residence and official policy (Verwey-Jonker Instituut, 2021; Institut Montaigne, 2020). The pattern is robust across countries with opposing policy philosophies — republicanism in France and multiculturalism in the Netherlands — suggesting that coalition formation is not created by policy, although policy may influence the form in which it is expressed.

This pattern — improvement in attitudes without corresponding behavioural change — suggests that deeper mechanisms are operating that resist attitudinal change. People may cognitively endorse diversity while their actual behaviour continues to be structured by other factors.

8.2.4 Stage 3: Universal Biological Mechanisms, Divergent Institutional Responses

Territorial thresholds: a universal mechanism, accommodated in different ways. Territorial attachment refers to the human tendency to develop emotional bonds with particular places and to protect them against perceived threats. Research in evolutionary psychology shows that people associate territorial boundaries with group identity and display systematic behavioural changes when the composition of their immediate environment changes substantially (Tajfel & Turner, 1979; Altman & Low, 1992). Comparable threshold effects can be observed in the countries examined: when the proportion of residents with a migration background exceeds a certain share of the local population, dynamics of segregation and social cohesion intensify. In the Netherlands, municipalities crossing such thresholds experienced an increase in objections to the accommodation of refugees, greater residential mobility among members of the established majority population, and a decline in measured social cohesion (Musterd & Ostendorf, 2013; SCP, 2020). Comparable patterns have been documented in French *banlieues*, German cities with high concentrations of migrants, and Swedish suburbs, in each case accompanied by weakening local attachments and increasing residential separation.

The crucial difference lies not in the activation of the mechanism, which can be observed across national contexts, but in the institutional response. Canada deliberately developed geographical dispersal policies intended to limit concentration in particular regions, combined with a points-based system designed to prevent abrupt demographic change. France and Germany relied primarily on legal and economic instruments without explicitly considering demographic gradualism, resulting in extreme concentrations that proved difficult to reverse. The Netherlands occupies an intermediate position: legal interventions predominate, but recent policy developments reveal growing attention to the pace and scale of demographic change.

Coalition formation: the persistence of ethnic network formation. Research in evolutionary psychology indicates that people automatically categorise others into 'us' and 'them' and systematically extend greater trust, information, and assistance to members of their own group (Cosmides & Tooby, 2013). This mechanism facilitated survival within small groups, but manifests itself in modern societies through ethnic, religious, or cultural clustering. All five countries examined display comparable patterns of ethnic network formation irrespective of official policy. These include friendships formed predominantly within one's own ethnic group and marriages contracted mainly within one's own community. Such phenomena remain visible

after three generations of residence and despite multicultural policies (Verwey-Jonker Instituut, 2021; Institut Montaigne, 2020; Sachverständigenrat für Integration, 2021).

Here too, the crucial difference between countries concerns institutional accommodation as opposed to denial. The Netherlands and Canada recognise ethnic organisations as legitimate partners and channel group loyalty productively through consultative procedures (Bloemraad, 2020). France and Germany ideologically deny or minimise group identities, causing them to operate less visibly and making them less accessible to public influence.

Perceptions of carrying capacity: pace rather than absolute numbers. People do not experience their environment as 'full' on the basis of objective figures alone, but through emotional and intuitive processes that are particularly sensitive to the speed of change. Psychological research shows that loss aversion and the availability heuristic cause negative changes to be magnified, while people underestimate their own capacity for adaptation (Kahneman & Tversky, 1984).

This may explain why concern about immigration is associated less strongly with absolute numbers than with the speed of demographic change. Dutch data provide an illustrative example. In Almere, support for immigration reportedly declined from 67 to 23 per cent after 2,400 Syrian refugees arrived within a six-month period in 2016 (Omgevingsverkenning Almere, 2017). In objective terms, this represented an increase in the proportion of residents with a migration background from only 21 to 24 per cent — a relatively modest increase in a city with sufficient facilities.

During the 2015 refugee crisis in Sweden, it was likewise the speed of the influx that was experienced as particularly problematic. Polls show that support for asylum policy fell from 71 to 29 per cent within a year, while the proportion of foreign-born residents increased only from 16.5 to 18.1 per cent (SOM Institute, 2022). The arrival of 163,000 people in a single year generated a sense of overload that outweighed rational arguments concerning actual reception capacity.

The Canadian example supports the proposition that gradual inflows can prevent considerable unrest. Despite a high proportion of foreign-born residents — 23 per cent, exceeding that of many European countries experiencing immigration crises — public support remains stable at approximately 80 per cent (Environics Research, 2022). This is attributed to the points-based system through which Canada carefully regulates the inflow and avoids abrupt demographic shocks. Research further suggests that concern about immigration in Canada fluctuates more strongly with the economic cycle than with the number of migrants itself.

Interaction among the three mechanisms: divergent national patterns. The interaction among the three mechanisms produces markedly different national responses. In the Netherlands, this interaction appears relatively balanced: all three mechanisms are activated in moderate forms because of institutional accommodation. Territorial dispersal limits extreme concentrations, recognition of group identity reduces the likelihood of clandestine radicalisation, and a gradual policy rhythm helps mitigate perceptions of societal overload.

France, by contrast, displays an almost systematic pattern of failure because institutional denial intensifies the activation of all three mechanisms. The absence of spatial dispersal has produced concentration in the *banlieues*; ethnic identity has been formally denied but has persisted

informally; and rapid demographic change has weakened public perceptions of manageability, reinforcing a chronic sense of pressure on social carrying capacity.

Germany and Sweden display mixed patterns. In both countries, recognition of diversity developed only at a relatively late stage, allowing biological and cultural differentiation first to become embedded in social structures. Subsequent policy interventions were substantial, but could only partially correct patterns that had already become structurally entrenched.

Canada constitutes the contrasting example of relative success. Proactive institutional design — ranging from the points-based system to the multicultural policy framework — has largely prevented the full activation of segregation dynamics by incorporating accommodation into the immigration system from the outset.

8.2.5 Stage 4: Plausibility of Biologically Informed Alternatives

The Dutch learning curve: empirical indications of early accommodation. The Dutch approach of systematic accommodation can be assessed using OECD and Statistics Netherlands data indicating how institutional adjustments channelled biological tensions before they escalated. Dutch performance across several dimensions of integration consistently exceeds the OECD average, suggesting that early recognition of behavioural mechanisms may be more effective than later corrective measures (OECD, 2022).

The Dutch labour market displays a relatively modest employment gap between workers with and without a migration background: approximately eight percentage points, considerably below the OECD average and substantially more favourable than in France or Sweden. This limited gap coincides with a moderate level of spatial segregation. In major cities, the segregation index — a measure of the extent to which population groups live separately from one another — is below the OECD average and compares favourably with France (Musterd & Ostendorf, 2013). Second-generation pupils with a migration background also perform relatively well in education: their scores in international PISA assessments are only slightly below the national average, whereas disparities are considerably greater in other Western European countries (OECD, 2021).

Dutch policy development between 1983 and the beginning of the 2000s displays a consistent pattern of early institutional recognition of group-dynamic signals followed by accommodation (Entzinger, 2003). From the 1980s onwards, the Netherlands invested substantially in minority policy and recognised ethnic organisations as legitimate interlocutors (Entzinger, 2003). This reflected a pragmatic approach in which the government acknowledged the permanent presence of Moluccan and Turkish communities and pursued cooperation through institutional partnerships rather than suppression.

Critics nevertheless point to persistent problems, including housing-market segregation, educational disadvantage among particular groups, and the rise of populist parties. Compared with French *émeutes* or German ‘parallel societies’, however, the Dutch integration process remained relatively manageable because of the early recognition and accommodation of biological mechanisms.

Canada: institutional design for diversity. From 1971 onwards, Canada deliberately developed multiculturalism as an official state doctrine, supported by an institutional architecture that anticipated potential integration problems (Bloemraad, 2020). The system is characterised by strategic selection, geographical dispersal, and institutional support for ethnic diversity within an overarching Canadian framework.

The points-based system systematically selects immigrants according to economic potential and language proficiency, thereby reducing the likelihood of abrupt demographic shocks capable of activating territorial anxiety. Geographical dispersal policies seek to prevent concentration in particular regions by distributing immigrants across provinces offering different economic opportunities. Ethnic organisations receive federal support, but operate within Canadian institutional frameworks that promote the development of an overarching national identity.

The Canadian model anticipated biological mechanisms by employing a points-based selection system that limits abrupt demographic change, geographical dispersal that reduces the formation of concentrated ethnic enclaves, and official multiculturalism that recognises group loyalties while creating an overarching Canadian identity. Statistics Canada data indicate the effectiveness of this approach. Twenty-three per cent of residents were born abroad, a higher proportion than in most EU countries, while public support for immigration remains stable at approximately 80 per cent (Statistics Canada, 2021). Employment gaps have remained limited, segregation indices relatively low, and social cohesion comparatively strong (Environics Research, 2022).

Canadian policymakers employ what Bloemraad (2020) describes as 'proactive accommodation': anticipating potential integration problems by creating institutional structures that channel ethnic diversity productively before tensions arise. For immigrants, this system creates an 'ethnic advantage', whereby government policy supports ethnic networks and cultural organisations because they facilitate rather than obstruct integration.

Sweden: generous multiculturalism and its limits. Sweden developed Europe's most generous multicultural model, based on what Borevi (2014) describes as the *folkhem* ideology: the belief that inclusion within the extensive welfare state would automatically result in integration without the need for additional institutional measures. This approach was rooted in national pride in Sweden's humanitarian tradition and in social-democratic values of equality and solidarity. The model initially enjoyed broad support: around 2010, approximately 70 per cent of the population endorsed the proposition that material security was sufficient for successful integration (SOM Institute, 2022).

The refugee crisis of 2015 subjected this assumption to considerable strain. The sudden arrival of more than 160,000 asylum seekers in a country with a population of ten million resulted in the concentration of migrant communities in suburban *Miljonprogrammet* neighbourhoods. In these areas, the Swedish Integration Board (2021) reported high unemployment, increasing crime, and social isolation — the opposite of the intended integration.

Only after 2018 did policymakers begin to recognise that the generous model had unintentionally promoted segregation by disregarding territorial attachment and coalition formation as underlying mechanisms. This late recognition illustrates the costs of ideological denial: patterns that might have been manageable at an earlier stage now require costly corrective interventions with uncertain outcomes.

8.2.6 Conclusion

Applying the four-stage model produces several interrelated insights into the dynamics of immigration governance.

First, conflicts of value appear to be a structural feature of this policy domain. Different stakeholder groups pursue divergent strategies for realising shared values such as individual liberty, social cohesion, and equality of opportunity. Tensions among these values — for example between freedom of choice and collective integration, or between universal rights and territorial boundaries — are consequently difficult to resolve completely through technical policy instruments.

The cases examined further suggest that traditional policy mechanisms frequently produce only partial effects. In many countries, economic investment has increased institutional capacity but has not always generated corresponding changes in social cohesion or patterns of interaction. Legal anti-discrimination frameworks have reduced overt forms of exclusion, while more informal or indirect forms have sometimes persisted. Cultural interventions that influence attitudes do not invariably translate into behavioural change in concrete choices involving residence, education, or social networks. These patterns indicate that additional explanatory mechanisms may be relevant.

Within this framework, three behavioural mechanisms appear particularly significant. First, several studies point to possible threshold effects in perceptions of group composition, whereby changes in the relative presence of particular groups may coincide with shifts in behaviour or preferences. Secondly, many societies display a degree of social clustering along ethnic or cultural lines, which may be associated with mechanisms of coalition formation and within-group trust. Thirdly, perceptions of social carrying capacity appear to respond more strongly to the pace of demographic change than to absolute numbers, meaning that rapid change can provoke disproportionate unrest.

From this perspective, it is possible to explore whether policy approaches that take account of such behavioural mechanisms are more effective. Some international examples suggest that early institutional adaptation to demographic and social dynamics may limit tensions. Strategies addressing local carrying capacity, patterns of social interaction, and the pace of change appear in some contexts to produce more favourable outcomes in employment, educational integration, and social stability. Other cases simultaneously show that tensions may intensify when institutional responses lag behind rapid societal change.

This analysis is not intended to provide a normative justification for discrimination or segregation, but to offer a diagnostic perspective on the persistence of integration problems. Biological and social behavioural mechanisms may contribute to predictable tensions, while institutional design helps determine how societies respond to those tensions. Effective policy therefore requires both recognition of underlying behavioural dynamics and scope for institutional and cultural adaptation.

8.3 Case B: Educational Segregation — Territorial Mechanisms in School Choice

8.3.1 Introduction

Since 2000, Dutch cities have faced persistent ethnic segregation in primary education, despite freedom of school choice and substantial policy investment. This segregation manifests itself in so-called 'black schools', in which more than 70 per cent of pupils have a non-Western migration background and which are often concentrated in particular neighbourhoods, alongside 'white schools' with predominantly pupils without a migration background. This analysis examines three specific cases: Amsterdam between 2012 and 2015, The Hague between 2010 and 2014, and Rotterdam between 2017 and 2021. Applying the four-stage model developed in Chapter 6, it examines why traditional measures intended to distribute pupils more evenly produced only limited effects and which biological constraints may contribute to the persistence of the observed patterns.

The three selected cases represent different intervention strategies. Amsterdam introduced compulsory distribution through a weighted lottery, The Hague implemented a postcode-based lottery, and Rotterdam merged schools with different ethnic compositions. Comparing these interventions makes it possible to examine the behavioural responses that arise when policymakers attempt to influence school composition directly. Particular attention is paid to the relationship between residential and educational segregation, to coalition formation and group identity, and to parental investment and risk perception.

Residential segregation and school segregation are not treated as synonymous in this analysis. The demographic composition of a neighbourhood substantially determines the local pool of pupils, but freedom of school choice, privately governed education, mobility between municipalities, and residential relocation subsequently determine the extent to which the spatial composition of neighbourhoods is reproduced, reinforced, or disrupted within schools. The spatial context therefore constitutes an important constraint on school segregation, but does not fully explain actual school-choice behaviour.

The data are drawn from publicly accessible sources provided by Statistics Netherlands, the Education Executive Agency, municipal reports, and the Dutch Inspectorate of Education. The methodology follows the diagnostic pattern-recognition principle set out in Chapter 6. The interventions examined are not treated as controlled experiments, but as comparable policy cases in which it is possible to assess whether observed behavioural responses correspond with theoretical expectations derived from biological constraints.

Several key definitions are required for this analysis. A 'black school' is defined as a primary school in which more than 70 per cent of pupils were classified, under the Statistics Netherlands classification used at the time, as having a non-Western migration background. A threshold effect refers to a non-linear pattern in which a relatively small change in the composition of the pupil population is accompanied by a disproportionately large change in enrolment or withdrawal behaviour. The percentages identified in this case are therefore treated as case-specific tipping points rather than universal biological thresholds.

8.3.2 Stage 1: Multi-Stakeholder Problem Analysis

Stakeholder identification and conflicts of value. Educational segregation involves five principal stakeholder groups whose objectives are partly incompatible. Parents without a migration background value educational quality, a safe learning environment, and social connectedness, with many avoiding schools with high concentrations of pupils with a non-Western migration background irrespective of objective indicators of quality such as Cito scores (Karsten et al., 2006). Parents with a non-Western migration background seek equality of educational opportunity and social acceptance, while experiencing systematic disadvantage and exclusion that restrict their children's prospects. Education professionals balance pedagogical commitments to inclusive education against the practical challenges of heterogeneous classrooms involving language disadvantages and differing cultural expectations. Policymakers pursue equality of opportunity and social cohesion, but struggle with the tension between freedom of choice and compulsory distribution. Schools themselves compete for pupils in a market-oriented environment and experience tensions between reputation management and ambitions concerning diversity.

These stakeholders employ incompatible strategies in pursuing shared values. Parents without a migration background choose 'white schools' through strategic residential decisions or privately governed education, thereby reinforcing segregation. Parents with a non-Western migration background develop within-group network strategies or accept a compulsory minority position in the absence of alternatives. Policymakers alternate between voluntary distribution and legal compulsion, creating inconsistencies that satisfy none of the parties involved.

Fundamental value tensions. Three fundamental tensions characterise education policy and cannot be resolved through technical measures alone. The tension between parental freedom of choice and collective integration concerns whether parents should be free to choose ethnically homogeneous schools or be compelled to accept diversity. Liberal educational principles require respect for parental preferences, whereas societal cohesion requires ethnic mixing.

The tension between equality and difference concerns whether ethnic diversity should be framed as a problem or as an opportunity. Colour-blind policy disregards inequality, whereas explicit diversity policy may reinforce stigmatisation (Sleegers et al., 2015).

The tension between short-term costs and long-term benefits concerns how much disruption is acceptable in pursuit of future integration. Compulsory mergers generate immediate resistance, but may have the potential to break persistent patterns of segregation.

8.3.3 Stage 2: Analysis of Traditional Regulatory Mechanisms

Economic mechanisms. The economic approach assumed that improving quality through additional funding, smaller classes, and supplementary teaching materials would reduce the tendency of parents without a migration background to avoid particular schools. During the periods examined, Amsterdam, The Hague, and Rotterdam invested substantial additional resources through the Educational Disadvantage Policy in schools with high concentrations of disadvantaged pupils (DUO, 2021). These investments were accompanied by improvements in objectively measured educational quality. At several Amsterdam schools, for example, average Cito scores rose from 532 to 536, bringing them close to the average score of 537 recorded at so-called 'white schools'. This approach rested on the assumption that parents without a migration background avoided 'black schools' primarily because of perceived differences in quality.

The empirical outcomes, however, reveal a clear discrepancy between the expected and observed effects. Although the quality of schools in several neighbourhoods demonstrably improved, the existing patterns of segregation remained largely intact. The school choices of parents without a migration background changed very little. In Amsterdam, despite the substantial investments, the number of pupils without a migration background fell by 31.7 per cent, from 4,200 to 2,870. In The Hague, the additional funding had no observable effect on the enrolment of pupils without a migration background. In Rotterdam, the merged schools lost 43 per cent of their pupils without a migration background despite receiving additional resources (DUO, 2013–2021).

The traditional explanation for this failure rests on three arguments, each of which offers a partial account but does not resolve the paradox. One argument points to insufficient resources, suggesting that larger investments would have been effective. Another maintains that the intervention came too late because patterns of segregation had already become too deeply entrenched by the time implementation began. Finally, reputational effects are cited as obscuring improvements in quality: even when schools perform better according to objective measures, their stigma may continue to deter parents without a migration background.

Legal mechanisms. The legal approach sought to combat segregation through compulsory distribution by means of lotteries, postcode-based allocation, or school mergers, with the explicit aim of enforcing ethnic mixing. These interventions were grounded in anti-discrimination legislation prohibiting schools from selecting pupils directly on the basis of ethnicity. Objective admissions procedures based on lotteries or postcode allocation were intended to eliminate discriminatory practices, while compulsory mergers were expected to create physically mixed school environments.

In Amsterdam, the introduction of a weighted lottery produced only a limited reduction in segregation. Moreover, this effect was partly offset by compensatory parental behaviour. The number of pupils attending privately governed schools increased by 19 per cent, from 18,200 to 21,650, while the number of moves to surrounding municipalities rose by 12 per cent. Of the 47 so-called ‘black schools’, 41 ultimately remained (Municipality of Amsterdam, 2016).

In The Hague, postcode-based lotteries likewise resulted in only a limited reduction in segregation. Compensatory responses were even stronger there. The number of pupils attending privately governed schools rose by 33.9 per cent, from 12,400 to 16,600, while outward mobility to surrounding municipalities increased by 28 per cent. In addition, eleven schools created parallel educational tracks, producing new forms of ‘internal sorting’ within the schools themselves (Municipality of The Hague, 2015).

Compensatory behaviour was most pronounced in Rotterdam. Compulsory mergers brought twelve schools together at six locations. The number of pupils without a migration background subsequently fell by 43 per cent, from 356 to 201, while the number of pupils with a non-Western migration background declined by 9 per cent, from 523 to 478. Of the pupils without a migration background who left, 67 per cent chose a school at which fewer than 30 per cent of pupils had a non-Western migration background. On average, they travelled an additional 3.7 kilometres to do so (Municipality of Rotterdam, 2022).

The traditional explanation for this failure rests on three arguments. One points to inadequate enforcement, suggesting that stricter compliance would have produced better results. Another emphasises legal loopholes that enabled parents to circumvent the regulations. Finally, reference is made to perverse incentives, whereby coercive measures themselves generated resistance and thereby exacerbated the situation.

Cultural mechanisms. The cultural approach focused on changing attitudes through awareness campaigns, diversity education, and positive representation. All three municipalities invested in campaigns presenting diversity as an asset (Sleegers et al., 2015). Survey findings indicate that explicit attitudes towards ethnically mixed education became more positive over time. Between 2000 and 2020, the proportion of Dutch people supporting mixed education rose from 54 to 73 per cent (SCP, 2020).

This change in attitudes did not, however, automatically translate into different school-choice behaviour. Research on school choice in the Netherlands shows that parents consider not only educational quality, but also the social and ethnic composition of the pupil population. In particular, the desire to avoid a situation in which one's own child would belong to a small minority may play a role (Karsten et al., 2006). The discrepancy between expressed support for mixed education and actual school-choice behaviour suggests that group identity and risk perception also influence decisions alongside conscious attitudes.

8.3.4 Stage 3: Identification of Relevant Biological Constraints

The preceding analysis shows that traditional policy approaches only partially explain the persistence of school segregation. Economic investments improved several objective indicators of quality, but barely altered school-choice behaviour. Legal interventions affected the formal distribution of pupils, but also prompted compensatory responses. Cultural interventions contributed to more positive explicit attitudes towards mixed education, without this attitudinal change being fully reflected in actual school choices. These findings leave room for additional explanations based on mechanisms associated with group formation, parental investment, and risk perception.

Territorial attachment in context. Residential segregation and school segregation are analytically distinct phenomena, but they are closely interconnected. The composition of residential neighbourhoods largely determines which pupils live within the immediate catchment areas of schools. Freedom of school choice then determines the extent to which these spatial patterns are reproduced or disrupted within education (Boterman, 2019).

Territorial attachment may influence how people experience changes in their immediate environment (Altman & Low, 1992). The observed school-choice behaviour cannot, however, be explained primarily by attachment to a particular place. Parents are evidently prepared to travel greater distances, seek a school outside their own neighbourhood, or even relocate. This behaviour indicates that not only location, but above all the social composition and perceived suitability of the school environment, are decisive.

In Amsterdam, The Hague, and Rotterdam, non-linear patterns of pupil withdrawal were observed at schools where the proportion of pupils with a non-Western migration background was broadly between 25 and 35 per cent. Around such tipping points, relatively small changes in the pupil population may coincide with comparatively strong parental responses. These percentages should be regarded as findings from the cases examined rather than as universal territorial or biological thresholds.

The cases also reveal anticipatory behaviour. In The Hague and Rotterdam, pre-enrolments declined after policy interventions had been announced but before they had been fully implemented. In Amsterdam, families with children moved away from particular districts, frequently citing school choice as an important reason. Such responses suggest that parents react not only to the existing composition of a school, but also to expectations concerning its future development.

The finding that schools with comparable Cito scores were nevertheless evaluated differently demonstrates that objective quality is only one element of school choice. The social composition of the school, the expected position of one's own child, and the perceived stability of the school environment also appear to play a role. The spatial context therefore determines the local pool of pupils, while group-related expectations and parental perceptions of risk influence the actual choice.

Coalition formation and group preference. The second relevant biological constraint is coalition formation. People readily classify others into social categories and, in doing so, distinguish between their own group and other groups. Social identity theory shows how such categorisation can reinforce preferences for one's own group (Tajfel & Turner, 1979). In an educational context, this may manifest itself as a preference for a school environment in which one's own social or cultural group has a recognisable presence.

Schelling (1971) demonstrated that relatively mild preferences for proximity to similar others can, through repeated individual choices, produce extensive segregation. This does not require explicit rejection of other groups. When many parents each have a slight preference for a recognisable social environment, their combined choices may nevertheless generate a strongly segregated pattern.

In the cases examined, Turkish and Moroccan parents relatively often selected schools at which their own group was already visibly represented, while parents without a migration background avoided schools at which their children would occupy a minority position (Boterman & Musterd, 2016). These preferences are not necessarily equally strong, and the opportunities to act upon them are distributed unequally. On average, parents without a migration background have more scope to choose another school, municipality, or residential neighbourhood.

The patterns cannot be explained entirely by language, religion, or socioeconomic position. They remain visible among second-generation families, at secular schools, and within comparable socioeconomic categories. This makes group identity and coalition formation plausible as supplementary explanations.

In addition to coalition formation, frequency dependence also appears to play a role. The attractiveness of a school depends partly on the existing composition of its pupil population. When a school develops a larger concentration of a particular group, it may become more attractive to members of that group and less attractive to parents who fear that their child will belong to a small minority. Individual school choices therefore alter the conditions under which subsequent parents make their decisions, creating the possibility of a self-reinforcing process.

In Rotterdam, four of the six merged schools developed within two years into schools at which more than 60 per cent of pupils had a non-Western migration background, although the original degree of mixing ranged between 40 and 50 per cent. In The Hague, schools occupying an intermediate position proved similarly unstable: schools at which between 40 and 50 per cent of pupils had a non-Western migration background shifted within several years towards a clearly higher or lower concentration. These patterns are consistent with frequency dependence and with the tipping dynamics described in Schelling's model.

Coalition formation may thus generate three interrelated effects. Different groups may prefer an environment in which their own group is sufficiently represented. Intermediate positions may become unstable when individual choices reinforce one another. Compulsory mixing may also prompt avoidance behaviour when parents have alternative options. The observed behaviour points to group-related preferences operating in the same general direction, but within asymmetrical social and institutional opportunity structures.

Parental investment and risk avoidance. The third biological constraint concerns parental investment. Parental investment theory holds that parents invest substantial time, energy, and resources in their children (Trivers, 1972). Educational decisions directly affect the child's expected development and future prospects. Parents may therefore respond relatively cautiously to uncertainty and perceived risks in this domain.

The parents examined accepted substantial costs in order to secure a preferred school environment. They travelled farther, selected alternative forms of education, or relocated despite the associated financial and social burdens. In Rotterdam, the average additional travelling distance among parents who chose an alternative school was 3.7 kilometres. This willingness to incur costs suggests that parents do not treat school choice merely as an everyday consumer decision, but as a decision with potentially long-term consequences.

When parents suspect that a school's composition creates uncertainty concerning educational quality, social safety, or their child's position, three possible responses may occur. They may avoid the supposedly risky environment pre-emptively, react relatively strongly to limited negative signals, and attach greater weight to subjective impressions than to general quality data. These responses are neither necessary nor universal consequences of parental investment, but constitute a plausible behavioural manifestation of the mechanism in the context of school choice.

The cases examined display patterns consistent with these expectations. In Amsterdam, avoidance persisted despite comparable Cito results. In The Hague, parallel educational tracks emerged within physically mixed schools, thereby recreating the original dividing lines within the organisation. These findings suggest that physical merger and objective improvement in quality are not necessarily sufficient to remove perceived risks.

Diagnosis of policy incompatibility. Taken together, the identified mechanisms may reinforce patterns of segregation that are difficult to disrupt through isolated policy instruments. The residential context largely determines the local pool of pupils. Coalition formation and group identity influence preferences for a socially recognisable school environment. Parental investment reinforces this dynamic because parents are prepared to incur substantial costs to avoid perceived risks to their children.

Traditional policy instruments may therefore produce effects different from those anticipated by policymakers. Economic investment improves actual quality, but does not necessarily remove group-related or social perceptions of risk. Legal coercion may alter the formal distribution of pupils, but may also prompt avoidance through other schools, municipalities, educational sectors, or places of residence. Cultural interventions may influence explicit attitudes without this change being immediately reflected in decisions concerning one's own child.

The observed shifts around particular school compositions point to possible non-linear processes. They do not, however, demonstrate the existence of a generally applicable territorial or biological threshold. Nor do the mechanisms predict individual behaviour with certainty. Individual variation is considerable, while cultural, institutional, and socioeconomic conditions influence how the mechanisms are expressed.

The biological interpretation does not provide a normative justification for segregation. It offers an additional explanation of why segregation may persist despite improved school quality, legal intervention, and more positive attitudes. Its relevance lies in identifying behavioural responses that policy design must take into account.

8.3.5 Stage 4: Plausibility of Biologically Informed Alternatives

Biologically informed policy alternatives must correspond with the mechanisms identified in the case without treating them as immutable. They must take account of the relationship between residential and school segregation, group identity and coalition formation, and parents' heightened sensitivity to risk when making decisions about their children. The alternatives must also be institutionally feasible and empirically testable. The analysis provides no basis for describing any single alternative as already proven effective or generally superior. It does, however, permit three design options to be derived.

Alternative 1: Phased change in school composition. This alternative seeks to introduce changes in the pupil population gradually rather than imposing them abruptly. It corresponds with the non-linear responses observed in the case: when parents expect a school's composition to change rapidly, they may move elsewhere even before the policy has actually been implemented. A phased approach may reduce such responses by spreading change over a longer period and allowing developments to be monitored in the interim.

The case provides no basis for identifying a generally applicable safe range. The percentages between 25 and 35 per cent are too context-specific for that purpose. Threshold management should therefore not be understood as maintaining a fixed percentage, but as closely monitoring tipping points in enrolment, withdrawal, and parental expectations.

International experience with residential dispersal provides indirect points of reference. Canadian and German cities have introduced measures intended to limit abrupt concentrations of particular population groups in specific neighbourhoods. These examples concern residential segregation and do not provide direct evidence of the effectiveness of pupil-distribution policies within schools. They are nevertheless relevant because neighbourhood composition partly determines which pupils live within a school's catchment area.

Whether more gradual spatial change also produces less school segregation depends on additional institutional factors. Freedom of school choice, privately governed education, school reputation, and the possibility of attending schools in other municipalities may still cause a mixed neighbourhood to divide into segregated schools. The Canadian and German examples therefore support, at most, the proposition that gradual spatial change may create more favourable initial conditions. Its actual operation within Dutch education remains a testable policy hypothesis.

Alternative 2: Broadening group identity within the school community. This alternative directly addresses coalition formation. Rather than denying existing ethnic and cultural group boundaries, it seeks to broaden the group identity that is relevant to pupils and parents. The school should not merely be a building in which different groups are present, but a recognisable community with shared activities, interests, and institutional symbols.

The common in-group identity approach assumes that existing us-and-them divisions can be reduced when people also perceive themselves as members of a superordinate group (Gaertner & Dovidio, 2000). Shared facilities, joint activities, collective responsibility, and a strong school identity may help to make ethnic categories less decisive in the primary classification of groups.

The Finnish comprehensive school model and Singapore's National Education framework are relevant from this perspective. Both approaches connect existing group loyalties to a broader school or national identity. They do not seek to eliminate group formation, but to direct it institutionally towards a wider community. In this respect, they correspond directly with the mechanism of coalition formation.

These examples do not prove that a particular Dutch intervention, such as an integrated campus, would automatically produce the same effect. Their relevance lies in the underlying design principle:

sustainable mixing requires more than physical proximity and must be supported by a credible superordinate identity. Its actual effects depend on the intensity of daily interaction, the absence of internal divisions, and the existence of shared interests among pupils and parents.

Alternative 3: Adaptive implementation through local experiments. This alternative is less a separate policy solution than a principle of implementation. The case shows that parents may respond to interventions through several channels of avoidance. When only formal enrolment at a school is monitored, segregation may shift to privately governed education, schools outside the neighbourhood, residential mobility, or internal differentiation within schools.

Adaptive implementation means introducing interventions locally and in phases, while monitoring not only formal school composition but also pre-enrolments, pupil withdrawal, travelling distances, relocations, and internal educational tracks. When compensatory behaviour becomes visible, policy can be adjusted before a self-reinforcing pattern develops.

The Rotterdam case does not demonstrate that phased mergers were successful. Rather, it shows which responses may arise during implementation and why monitoring is necessary. Nor can Berlin's *Quartiersmanagement* be used as direct evidence of school-specific effectiveness, because it primarily concerns area-based neighbourhood policy. It does, however, illustrate how local monitoring and interim adjustment may form part of the intervention itself.

The strength of adaptive implementation therefore lies not in previously proven effectiveness, but in the opportunity to test policy assumptions incrementally. It prevents a uniform intervention from being continued over an extended period while parents are already developing avoidance strategies that undermine its original objective.

The three alternatives address different aspects of the case. Phased change seeks to limit abrupt tipping responses. Broadening group identity addresses coalition formation and the social meaning of the school community. Adaptive implementation reveals when interventions prompt compensatory behaviour. They should not be regarded as competing comprehensive solutions, but as design options that may be tested empirically, either separately or in combination.

8.3.6 Conclusion

Applying the four-stage model yields four interrelated insights.

Educational segregation remains problematic because different stakeholder groups pursue divergent strategies in seeking to realise values such as educational quality, freedom of choice, equality of opportunity, and social cohesion. Parents seek to protect what they perceive to be the interests of their own children, schools safeguard their position and reputation, while policymakers pursue collective integration. The tension between parental freedom of choice and societal mixing cannot therefore be resolved entirely through a technical intervention.

Traditional regulatory mechanisms produced only partial effects. Economic investment improved the actual quality of schools, but had little effect on patterns of school choice. Legal interventions influenced the formal distribution of pupils, but prompted compensatory behaviour through privately governed education, schools outside the neighbourhood, residential relocation, and internal differentiation. Cultural interventions improved explicit attitudes towards mixed education, without this change being fully reflected in choices concerning one's own child.

The spatial context constitutes an important condition for school segregation because neighbourhood composition partly determines the local pool of pupils. Residential and educational segregation are not,

however, identical. Freedom of school choice may either reinforce or disrupt spatial patterns. Actual school-choice behaviour appears to be more directly associated with group identity, coalition formation, and parental investment. Parents may prefer a socially recognisable school environment, seek to avoid a minority position, and accept substantial costs in order to reduce perceived risks to their children.

The observed shifts around particular proportions of pupils with a non-Western migration background point to possible tipping processes, but do not constitute evidence of a universal territorial or biological threshold. Nor need preferences be equally strong across groups, and groups do not have equal opportunities to realise those preferences. The biological mechanisms therefore provide neither a complete nor a deterministic explanation, but rather a supplementary explanation for the persistence of segregation.

The analysis renders three biologically informed design options plausible. Phased changes in school composition may help prevent policy interventions from triggering abrupt avoidance responses. Developing a superordinate school identity corresponds with coalition formation by incorporating existing group attachments into a broader community. Adaptive implementation makes it possible to identify compensatory behaviour at an early stage and to adjust policy during implementation. The international examples provide different forms of support for these options: Canadian and German experiences relate primarily to the spatial conditions of segregation, whereas the Finnish and Singaporean approaches are directly relevant to the institutional broadening of group identity.

These alternatives cannot be regarded as proven solutions. Their significance lies in the relationship between the identified behavioural mechanisms and institutional design. Their effects must be tested separately within the Dutch educational context.

A biological interpretation of segregation could be understood as legitimising existing preferences or discrimination. That is not the purpose of this analysis. Its aim is to explain why school segregation may persist despite improvements in quality, legal distribution measures, and more positive public attitudes. Effective policy requires recognition of these behavioural dynamics without treating them as immutable or normatively desirable.

8.4 Cross-Case Analysis: Predictive Value of Biological Mechanisms

Comparing the two cases makes it possible to assess whether the identified evolutionary-biological mechanisms generate expectations that correspond with the observed policy patterns. Given the abductive and retrospective nature of the research, it cannot be established that these mechanisms predict policy outcomes with any particular degree of statistical accuracy. It is, however, possible to examine whether they generate expectations that could be formulated in advance regarding the conditions under which resistance, clustering, and compensatory behaviour become more likely. Their predictive value therefore concerns pattern recognition at the collective level, rather than the prediction of individual behaviour.

Different mechanisms within interconnected processes of segregation. The two cases address different forms of segregation. The immigration case centres on the composition of neighbourhoods and communities. The education case concerns the distribution of pupils across schools. Residential segregation influences the local pool of pupils and therefore constitutes an important condition for school segregation, but the two phenomena are not identical. Freedom of school choice, privately governed education, residential relocation, and recourse to schools outside the neighbourhood all help determine how residential patterns are reflected within education.

The immigration case points primarily to the possible operation of territorial attachment, carrying-capacity constraints, and coalition formation. Territorial attachment makes it plausible that rapid changes in the immediate living environment may provoke stronger responses than gradual change. In this context, carrying-capacity constraints are expressed through perceptions that local absorption capacity is under pressure, with the pace of change possibly carrying greater weight than the absolute number of newcomers. Coalition formation helps explain why social networks and group attachments continue to display a degree of ethnic clustering under different institutional regimes.

In the school-segregation case, coalition formation, frequency dependence, and parental investment are the most directly relevant mechanisms. Coalition formation may explain why parents prefer a socially recognisable school environment and seek to avoid a situation in which their child belongs to a small minority. Frequency dependence explains how successive school choices alter the attractiveness of schools and may thereby reinforce one another. As a school's composition changes, so too do the conditions under which subsequent parents make their choices, potentially rendering intermediate positions unstable. Parental investment explains why parents are willing to incur substantial costs, such as additional travelling time, relocation, or recourse to another educational provision, when they perceive risks to their child's development.

Coalition formation therefore constitutes the clearest mechanism shared by both cases. In the immigration case, it operates through social networks, group organisation, and residential clustering; in the education case, through school choice, parental networks, and preferences for a recognisable social environment. The remaining mechanisms differ between the cases. Territorial attachment and carrying-capacity constraints are primarily relevant to the immigration case, whereas frequency dependence and parental investment relate more directly to school-choice behaviour.

Added value in relation to traditional explanations. The two cases show that economic, legal, and cultural interventions may have effects, but explain the persistence of clustering only partially. Economic investment may improve the quality of neighbourhoods or schools without producing corresponding changes in social networks or school choices. Legal measures may promote formal equality or a more even distribution, while simultaneously prompting compensatory behaviour. Cultural interventions may generate more positive explicit attitudes without immediately affecting residential, network, or school choices.

This does not mean that the traditional models have been falsified. They explain important aspects of the processes examined, but leave certain behavioural responses underexposed. The evolutionary-biological mechanisms add expectations concerning the conditions under which traditional interventions are more likely to encounter resistance or avoidance behaviour. They therefore function as an additional layer of explanation and prediction.

Conditional predictive value. The immigration case supports the expectation that abrupt changes in the composition of the local population are more likely to provoke resistance and mobility responses than a more gradual development. It also supports the expectation that group networks will persist when policy formally disregards group identities. The school-segregation case supports the expectation that compulsory distribution may prompt compensatory behaviour when parents have genuine opportunities to opt out. It also supports the expectation that changes in school composition may reinforce themselves through frequency-dependent school choices and that parents may be willing to incur substantial costs in the process.

These expectations are more specific than the general observation that integration policy may encounter resistance. They connect a particular mechanism to a recognisable behavioural pattern. Their predictive value nevertheless remains conditional. Institutional rules, the availability of alternatives, socioeconomic opportunities, and local history influence whether the expected behaviour occurs and the form it takes.

Methodological limitations. The analysis is based on retrospective reconstruction and pattern matching. It therefore cannot demonstrate that the biological mechanisms independently caused the observed outcomes. Nor can a universal territorial or biological threshold be inferred from the percentages examined. At most, these percentages indicate possible tipping points within the contexts studied. The mechanisms also cannot be used to predict individual choices. Their significance lies at the level of aggregated behavioural patterns and institutional responses.

Answers to the empirical research questions. From the perspective of identity conflict, the three empirical research questions can be answered as follows.

ERQ1 – Explanatory power. Evolutionary-biological mechanisms provide supplementary explanations for the persistence of identity-related policy failure. In the immigration case, territorial attachment, carrying-capacity constraints, and coalition formation help explain why extensive economic investment, legal equality, and cultural campaigns do not automatically produce social integration. In the school-segregation case, coalition formation, frequency dependence, and parental investment help explain why improved school quality, admissions measures, and more positive attitudes have only limited effects on actual school composition. These mechanisms do not replace institutional, socioeconomic, or cultural explanations, but make it understandable why comparable interventions may repeatedly prompt compensatory behaviour.

ERQ2 – Predictive value. The mechanisms generate conditional expectations regarding policy situations in which resistance becomes more likely. Territorial attachment and carrying-capacity constraints indicate that rapid local changes may provoke defensive responses more readily than gradual change. Coalition formation predicts that group-based networks and preferences will not disappear as a result of formal equality or general tolerance. Frequency dependence predicts that changes in school composition may reinforce themselves through successive choices. Parental investment predicts that parents may be willing to engage in costly avoidance behaviour when they perceive risks to their children. The cases support these expectations retrospectively, but provide no basis for precise or unconditional predictions.

ERQ3 – Effectiveness of alternatives. The cases make it plausible that policy is more likely to be effective when it corresponds with the mechanisms identified. In the immigration case, a more gradual pace of change may limit territorial and carrying-capacity-related responses, while recognition of group

identities may create scope for channelling coalition formation within a broader institutional framework. In the education case, phased change may temper frequency-dependent tipping responses, a superordinate school identity may broaden the relevant coalition, and adaptive monitoring may make compensatory behaviour visible at an early stage. The international examples provide varying and partly indirect support for these design principles. They do not demonstrate that the alternatives will be more effective in the Dutch context and should therefore be regarded as testable design options.

In summary, the cross-case analysis shows that no single biological mechanism fully explains both forms of segregation. The principal commonality lies in the operation of coalition formation and in the fact that individual choices may generate collective clustering. The specific mechanisms then differ between policy contexts. Territorial attachment and carrying-capacity constraints are primarily relevant to immigration and the residential environment, whereas frequency dependence and parental investment are more relevant to school choice. It is precisely this differentiation that enhances the analytical value of the framework of ten constraints: it clarifies which mechanism may be relevant under which conditions and what type of policy response may plausibly follow from it.

Chapter 9: Sex Conflict — Reproduction and Gender Inequality

9.1 Introduction

This chapter addresses all three empirical research questions from the perspective of sex conflict—conflicts concerning reproductive strategies and gender inequality that are driven, among other factors, by evolutionary-biological mechanisms associated with sexual selection and parental investment theory:

ERQ1 (Explanatory Power): To what extent do biological constraints explain policy failure in sex conflict more effectively than traditional explanations?

ERQ2 (Predictive Value): Can assessments of biological constraints reliably predict where gender policy will encounter systematic resistance?

ERQ3 (Effectiveness of Alternatives): Do evolutionary-biologically informed policy alternatives demonstrate substantially greater effectiveness than traditional approaches in cases related to sex conflict?

The two selected cases illustrate different aspects of sex conflict within the Dutch context. Case A concerns the persistent gender pay gap despite forty years of anti-discrimination policy, during which traditional economic, legal, and cultural interventions have shown only limited effectiveness. Case B examines the #MeToo problem, in which systematic patterns of sexual harassment and abuse of power in the workplace have persisted despite extensive policy reforms since 2017.

These cases were selected because they make it possible to evaluate the effectiveness of evolutionary-biologically informed alternatives in comparison with traditional approaches. Unlike class conflict and race conflict, sex conflict may, according to evolutionary biologists, have more direct roots in biological differences that emerged over millions of years of evolution. This biological basis suggests that policy alternatives which accommodate sex differences may be more effective than approaches that seek to eliminate those differences.

The four-stage protocol set out in Chapter 6 is applied systematically to evaluate the effectiveness of evolutionary-biologically informed policy alternatives. For each case, the analysis examines why the situation remains problematic for diverse stakeholders, why conventional regulatory mechanisms fail, which biological mechanisms may be relevant, and, in particular, how evolutionary-biologically informed alternatives may demonstrate greater effectiveness.

9.2 Case A: The Gender Pay Gap in the Netherlands — Evolutionary-Biological Mechanisms and Reproductive Strategies

9.2.1 Introduction

Persistent pay differences between men and women constitute an enduring policy problem in the Netherlands, despite decades of equality legislation and the steady increase in female labour-force participation. In 2024, the unadjusted gender pay gap stood at 15.3 per cent—a figure that has declined only marginally since 2010 (CBS, 2024). This case study examines why traditional policy instruments—legal transparency requirements, economic incentives for equal pay, and cultural awareness campaigns—have demonstrated only limited effectiveness.

The analysis follows the four-stage framework set out in Chapter 6. Stage 1 identifies why different stakeholders regard pay differences as problematic and where the underlying value conflicts lie. Stage 2 assesses which traditional policy mechanisms have been applied and why they have produced insufficient effects. Stage 3 examines which biological constraints are relevant to explaining the persistence of the gender pay gap, with particular emphasis on reproductive strategies and mate-choice mechanisms as conceptualised in Chapter 2. Stage 4 finally evaluates the extent to which biologically informed policy alternatives are empirically plausible.

The case compares three policy responses: the Dutch implementation of EU Directive 2023/970 on pay transparency, Iceland's Equal Pay Certification System, in place since 2018, and the United Kingdom's Gender Pay Gap Reporting regime, introduced in 2017. This variation in institutional context makes it possible to identify which underlying mechanisms continue to operate consistently irrespective of the policy instruments selected.

9.2.2 Stage 1: Multi-Stakeholder Problem Analysis

This first stage of the analysis identifies why pay gaps are problematic for different groups of actors and where conflicts of value arise among stakeholders. The analysis focuses on the Netherlands, while placing Dutch perceptions of the problem in comparative perspective with Iceland and the United Kingdom.

All three countries examined share fundamental assumptions concerning the nature of the problem. Pay gaps persist despite decades of equality legislation: the Netherlands has recorded only a limited decline since the Equal Pay Act of 1975, Iceland continues to face persistent disparities despite progressive legislation dating back to 1961, and the United Kingdom has experienced stagnation after decades of implementing the Equal Pay Act (Blau & Kahn, 2017). A lack of insight into remuneration structures is identified as a central problem in all three contexts, with transparency systematically lacking and corrective interventions consequently impeded. The economic impact is widely acknowledged: the underutilisation of female labour potential harms economic growth and the capacity of labour markets to withstand demographic ageing (OECD, 2023). The principle of equal pay for equal work serves as the common normative point of departure.

In the draft legislation of March 2025, the Dutch Ministry of Social Affairs emphasised that significant pay inequalities persist despite improvements in women's labour-market participation. The ministerial approach reflects a strategy of minimum compliance with European requirements. By not exceeding the EU minimum standards, the Netherlands avoids potential resistance from employers' organisations, but simultaneously limits the possible impact of the intervention (Kamerstukken II, 2025/26, 36 420, no. 2). Employers' organisations such as VNO-NCW and AWVN articulate a pragmatic but critical position.

Although they acknowledge the problem of pay gaps in principle, they emphasise practical implementation challenges. AWVN identifies the risk of excessive administrative burdens and fears strategic behaviour whereby organisations formally comply with reporting requirements without producing substantive behavioural change (AWVN, 2024).

Trade unions such as FNV and CNV support transparency requirements, but object to the non-binding nature of the Dutch implementation. FNV argues that transparency without sanctions risks becoming a 'paper tiger' (FNV, 2024). Women's organisations such as Women Inc. emphasise structural discrimination and cultural patterns that perpetuate pay gaps. Their definition of the problem extends beyond legal and technical solutions and points to deeply embedded social mechanisms (Women Inc., 2023).

The Dutch implementation strategy reflects a broader tension between European harmonisation and national autonomy. EU Directive 2023/970 establishes minimum requirements but grants Member States discretion in enforcement and sanctions. The Netherlands opted for a relatively non-binding implementation without substantial penalties, reflecting the ministerial assessment that more extensive obligations would generate disproportionate resistance among employers and exceed the enforcement capacity of the Labour Inspectorate. This pragmatic calculation nevertheless conflicts with the normative demand by trade unions and advocacy groups for stringent enforcement. The resulting implementation—formally compliant with EU requirements but likely to be limited in practical effect—illustrates the challenges of European social regulation in a context where Member States differ substantially in institutional capacity, political culture, and labour-market traditions.

Iceland's more stringent approach was possible because broad societal support for gender equality and the limited size of the economy facilitated effective enforcement (OECD, 2020). These conditions are less strongly present in the Netherlands, thereby constraining what is politically feasible.

Icelandic stakeholders display similar constellations, but adopt substantially stricter positions. Since 2018, the Icelandic government has implemented a certification system that actively enforces equality rather than merely facilitating transparency. Employers with more than 25 employees must demonstrate that they provide equal pay for work of equal value, with the burden of proof resting on the employer (Rafnsdóttir & Heijstra, 2013).

A different pattern emerges in the United Kingdom. Gender Pay Gap Reporting, introduced in 2017, requires organisations with more than 250 employees to publish their gender pay gaps annually, without certification or sanctions. British employers respond primarily through reputation management: organisations that publish large gaps experience pressure from the labour market and public opinion (Equality and Human Rights Commission, 2020).

Three recurring tensions become apparent. The first is a conflict between individual freedom of choice and collective equality. Employers emphasise that pay differences may reflect individual preferences concerning flexibility, workload, or career paths, whereas proponents of intervention argue that such 'choices' are socially constructed. The second is a tension between organisational autonomy and government regulation. Dutch employers resist extensive state interference in remuneration policy, while governments and trade unions invoke market failure as a justification for intervention. The third concerns disagreement over the pace of change. Employers advocate gradual adjustment, whereas advocacy groups emphasise urgency after decades of stagnation. These conflicts of value suggest that technical and legal solutions may prove insufficient where fundamentally divergent views exist concerning both causes and remedies.

The Dutch corporatist tradition—characterised by institutionalised consultation among government, employers, and employees—offers potential for mediation between these value positions. Historically, the polder model has proved effective in producing compromises on complex labour-market issues (Visser & Hemerijck, 1997). The gender pay gap, however, tests the limits of this model because the

underlying value conflicts may run deeper than in previous labour-market reforms. Whereas earlier compromises concerned the distribution of resources or procedural arrangements, the gender pay gap raises questions of autonomy, freedom of choice, and the role of biological as opposed to social factors in explaining outcomes.

9.2.3 Stage 2: Analysis of Traditional Policy Instruments

This second stage of the analysis assesses the effectiveness of three categories of policy instruments used to reduce gender pay gaps: legal mechanisms, comprising anti-discrimination legislation and transparency requirements; economic mechanisms, comprising market incentives and financial inducements; and cultural-normative mechanisms, comprising awareness campaigns and diversity interventions. The analysis documents why these mechanisms have demonstrated limited effectiveness despite substantial commitments of resources and political will.

Legal interventions are based on the assumption that explicit statutory equality obligations can eliminate discriminatory practices through prevention and sanctioning. Since 2026, the Netherlands has been implementing EU Directive 2023/970, which requires employers with more than 100 employees to provide pay transparency. Iceland has applied a more stringent certification requirement since 2018, under which the burden of proof rests with employers. The United Kingdom has opted for disclosure requirements without direct sanctions. This legal diversity has nevertheless produced comparable outcomes. In the Netherlands, implementation of the EU requirements was delayed, with the enforcement capacity of the Labour Inspectorate identified as a critical bottleneck (Inspectie SZW, 2024). Iceland reports that certification generates administrative compliance but limited behavioural change: organisations adjust formal salary structures without fundamentally revising their underlying remuneration practices (Statistics Iceland, 2023). In the United Kingdom, the gender pay gap has stagnated since the introduction of mandatory reporting, with the median gap remaining at approximately 14.3 per cent between 2017 and 2023 (ONS, 2023).

The similarities between the three countries point to systematic limitations. Legal mechanisms address explicit discrimination, but appear less effective against implicit mechanisms that structure gender pay gaps. Transparency provides information, but does not automatically create a motivation to correct disparities. The threat of sanctions generates formal compliance, but produces limited substantive behavioural change when the underlying drivers of inequality remain persistent.

The implementation delays observed in all three countries point to obstacles deeper than purely technical challenges. Dutch employers report that the administrative burden associated with transparency falls disproportionately heavily on medium-sized organisations without specialised human-resources departments, generating resistance that slows implementation (MKB-Nederland, 2024). Icelandic evaluations show that, although certification enforces formal compliance, organisations develop strategies to comply with the letter of the law without embracing its spirit, for example by redefining job descriptions or reallocating bonus components (Einarsdóttir et al., 2018). British organisations appear to manage reputational pressure through narrative strategies: they publish their pay gaps accompanied by extensive contextual explanations that neutralise the figures (Adams & Funk, 2012). These strategic responses suggest that legal mechanisms not only produce technical compliance, but may also encourage avoidance behaviour where underlying commitment is absent.

Economic approaches assume that market forces will eventually eliminate discriminatory pay differences. Policy interventions seek to correct market failure by addressing information problems or creating incentives. The Netherlands experimented with childcare subsidies and flexible working arrangements. Evaluations show a substantial increase in labour-force participation, from 60.7 per cent in 2000 to 75.4 per cent in 2024, but only a limited reduction in the gender pay gap (SCP, 2024). Iceland introduced fiscal incentives for organisations implementing equality policies, but recorded comparable

outcomes: increased participation without equivalent progress towards pay equality (Arnalds et al., 2013). The United Kingdom addresses gender pay gaps primarily through market transparency, on the assumption that publication creates reputational damage. Empirical evidence suggests that organisations publishing large gaps do indeed face reputational risks, but that these risks rarely translate into substantial revisions of remuneration practices (Criado-Perez, 2019).

Cultural approaches assume that discrimination arises from implicit biases and gender stereotypes, and that raising awareness can reduce gender pay gaps. The Netherlands invested substantially in unconscious-bias training, mentoring programmes for women, and awareness campaigns. Iceland implemented comparable interventions, supplemented by quota arrangements. Meta-analyses of their effectiveness have nevertheless produced disappointing results. Bezrukova et al. (2016) found that diversity training had, on average, no measurable effect on actual reductions in discrimination. Chang et al. (2019) reported that unconscious-bias training increases awareness in the short term but does not generate lasting behavioural change. Dutch evaluations confirm this pattern: organisations report increased awareness, but show no significant reduction in gender pay gaps following the implementation of diversity programmes (SER, 2022).

Three patterns emerge across these different policy instruments. Information appears necessary but insufficient: transparency creates awareness, but does not generate automatic correction. The threat of sanctions produces formal compliance, but only limited substantive behavioural change. Normative change fails when structural mechanisms remain persistent. These systematic limitations suggest that traditional explanatory models may overlook a fundamental dimension. Legal approaches assume that discrimination is primarily explicit. Economic models assume that market forces will eliminate discrimination once information becomes available. Cultural interventions assume that attitudinal change generates behavioural change. These assumptions prove inadequate when gender pay gaps persist across widely differing institutional contexts.

Dutch childcare subsidies illustrate the limitations of economic interventions particularly clearly. Since 2005, the Netherlands has invested substantially in affordable childcare with the aim of increasing women's labour-force participation and reducing career interruptions. This investment affected participation, which rose from 60.7 per cent in 2000 to 75.4 per cent in 2024, but gender pay gaps declined only from 18.1 to 15.3 per cent over the same period (CBS, 2024). This asymmetry suggests that increased participation does not automatically produce pay equality when women choose different sectors, positions, or working patterns from men. Participation is necessary but insufficient for pay equality. The implicit assumption underlying economic interventions—that removing barriers produces convergence—proves too simplistic when systematic differences in preferences persist.

9.2.4 Stage 3: Identification of Evolutionary-Biological Constraints

The systematic limitations of traditional policy instruments suggest that deeper mechanisms are operating beyond the scope of conventional policy theories. This third stage of the analysis identifies which evolutionary-biological constraints, as conceptualised in Chapter 3, are relevant to explaining persistent gender pay gaps. The focus lies on reproductive strategies, mate-choice mechanisms, and their interaction with status competition.

Reproductive strategies refer to evolutionarily developed mechanisms through which men and women exhibit different patterns of investment in reproduction and child-rearing, with corresponding effects on career orientation and risk preferences. Trivers's (1972) parental investment theory holds that the sex making the greater biological investment in reproduction—typically females among mammals—is subject to evolutionary selection for mechanisms that minimise risk and maximise long-term security. These mechanisms may manifest themselves in contemporary labour-market behaviour. Empirical evidence suggests systematic differences in risk preferences that remain consistent across cultural

contexts. In a meta-analysis of 150 studies, Croson and Gneezy (2009) found that women were, on average, more risk-averse in financial decisions. Bertrand (2011) documented that female MBA graduates systematically preferred positions offering lower income variability but greater job security over positions with higher expected earnings but greater volatility.

Dutch data confirm these patterns. CBS (2024) reports that women remain substantially underrepresented in sectors characterised by high income volatility—finance, where women account for 28 per cent; technology, 23 per cent; and entrepreneurship, 31 per cent—while being overrepresented in sectors offering stable incomes: education, where they account for 74 per cent; healthcare, 79 per cent; and the public sector, 58 per cent. When women do work in higher-income sectors, they choose permanent contracts significantly more often than performance-related contracts containing bonus components (SCP, 2023). This sectoral and contractual segregation explains substantial portions of the gender pay gap. Goldin (2014) showed that approximately 40 per cent of the gender pay gap in the United States is explained by differences in sectoral and occupational choices. Dutch analyses suggest comparable patterns: the SER (2022) calculated that 47 per cent of the unadjusted gender pay gap can be attributed to differences in sector, occupational level, and contract type.

Longitudinal studies reinforce these findings by showing that sectoral segregation is not solely the result of discrimination upon entry into the labour market, but develops through cumulative career choices. Azmat and Ferrer (2017) followed cohorts of university graduates over fifteen years and found that initial sectoral choices upon graduation were relatively similar for men and women, but that women moved systematically more often during the first decade from sectors characterised by high income volatility to sectors offering more stable incomes. This transition correlated with partnership and parenthood, but remained present after controlling for these factors. Dutch cohort analyses confirm this pattern: women with technical qualifications in engineering or computer science are substantially more likely than equivalently qualified men to move into consultancy, project management, or the public sector (CBS, 2023). These transitions reduce average earnings by between 12 and 18 per cent, but increase job security and the predictability of working hours.

The cross-cultural robustness of risk preferences suggests that at least part of these differences is not entirely cultural. Falk and Hermle (2018) found that, although gender differences in risk preferences vary between countries, they point in the same direction in all 76 countries examined, with larger differences in countries characterised by greater gender equality. This paradoxical pattern—larger differences in preferences within more egalitarian societies—suggests that biological dispositions may be expressed more freely as institutional barriers diminish.

Sexual-selection theory—introduced by Darwin (1871) and formalised by Trivers (1972)—predicts that mate-choice mechanisms structure behaviour in ways that influence labour-market outcomes. When one sex systematically selects potential partners on the basis of economic resources and status, this creates selection pressure that intensifies status competition. Cross-cultural studies of mate preferences reveal robust patterns. Buss (1989) documented across 37 cultures that women systematically attached greater importance than men to the economic resources and social status of potential partners. This pattern has been replicated in Dutch samples (Buunk et al., 2002) and has remained persistent over several decades (Boxer et al., 2015).

These mate preferences may create asymmetrical status pressure. When economic success remains a more important criterion in female mate choice, the average man experiences greater pressure to maximise his income. Empirical evidence suggests that such mechanisms structure working behaviour. Bertrand et al. (2010) found that married men worked substantially longer hours and generated higher incomes than unmarried men, whereas this effect was absent or reversed among women. Dutch data reveal comparable patterns: fatherhood correlates with increased work intensity among men, whereas motherhood correlates with reduced work intensity among women (CBS, 2024).

Negotiation behaviour displays comparable asymmetries. Leibbrandt and List (2015) found that women initiate salary negotiations significantly less often and, when they do negotiate, request smaller increases on average. This pattern is substantially reduced in contexts in which negotiation is explicitly invited, suggesting that ambiguity intensifies gender differences (Small et al., 2007). Such differences accumulate over the course of careers: incremental negotiating advantages of between 3 and 5 per cent can result in cumulative income differences of between 20 and 30 per cent over thirty years (Babcock & Laschever, 2003).

The mechanisms underlying differences in negotiation behaviour appear complex and context-dependent. Bowles et al. (2007) documented that women who negotiate assertively experience social sanctions in certain contexts: they are perceived as less likeable and receive lower performance evaluations, whereas men displaying equivalent negotiating behaviour do not experience these sanctions. This asymmetry creates a double bind: women who do not negotiate accumulate an income disadvantage, while those who do negotiate risk social sanctions that may impede career progression. Dutch experimental studies replicate these findings (Van der Lee & Ellemers, 2015). This dynamic suggests that differences in negotiation behaviour do not merely reflect individual preferences or self-confidence, but also rational adaptation to the social consequences of behaviour. Interventions encouraging women to negotiate more assertively without addressing the structure of social sanctions therefore risk producing suboptimal outcomes.

The predictive value of biological mechanisms is strengthened by their capacity to explain non-linear effects. Traditional models often assume linear relationships—greater transparency produces greater equality, and more childcare produces a smaller gender pay gap—but empirical data display threshold effects and plateaux. Biological mechanisms may explain this non-linearity. When risk aversion structures sectoral and occupational choices, interventions that reduce barriers will have effects only up to the point at which newly available choices more closely reflect biological preferences. Further interventions may then produce no additional effect or may paradoxically widen the gap by facilitating freer choice. Iceland's experience appears to confirm this pattern: after an initial decline in gender pay gaps during a period of institutional reform between 2000 and 2020, the gap stabilised at approximately 10 per cent despite the continued intensification of policy (Statistics Iceland, 2024). This plateau may suggest that the remaining differences are no longer primarily discriminatory, but reflect legitimate heterogeneity in preferences and strategies.

These mechanisms do not operate in isolation, but reinforce one another. Risk aversion and a preference for stability structure sectoral and occupational choices, thereby lowering potential income ceilings. Lower income ceilings reduce the relative value of status competition, making investment in career intensification less attractive. This interaction may help explain why gender pay gaps increase with age. Goldin (2014) documented that gender pay gaps are minimal upon entry into the labour market, at between 2 and 4 per cent, but increase substantially during the first decade, reaching between 15 and 20 per cent. This temporal dynamic does not appear to be driven primarily by discrimination, but by the accumulation of small differences in choices.

If these biological constraints play a substantial role, they generate specific predictions. Policy that increases transparency without addressing underlying preferences should demonstrate limited effectiveness, as observations in the Netherlands, Iceland, and the United Kingdom confirm. Gender pay gaps should persist even in organisations with strong commitments to equality; universities and public-sector organisations do indeed display substantial gaps despite egalitarian cultures (SER, 2022). Interventions that expand freedom of choice may potentially widen gender pay gaps when such freedom allows biological dispositions to be expressed more fully, thereby explaining the paradoxical finding that gender pay gaps remain persistent in Scandinavia (Falk & Hermle, 2018).

9.2.5 Stage 4: Evaluation of Evolutionary-Biologically Informed Alternatives

This fourth stage of the analysis evaluates whether policy alternatives that accommodate biological constraints are empirically plausible and politically feasible. The focus lies on interventions that recognise variability in preferences and strategies rather than imposing uniformity.

Traditional job-evaluation systems frequently emphasise working hours, physical presence, and continuous availability as criteria for higher remuneration. These criteria systematically favour employees capable of providing maximum work intensity. An alternative would be to base job evaluation on output and results rather than input and presence. Empirical evidence is available from organisations that have implemented Results-Only Work Environments. Moen et al. (2016) evaluated a randomised trial in which employees were granted complete autonomy over when and where they worked, with performance assessed solely on the basis of results. This intervention substantially reduced gender differences in career progression—by 12 percentage points over two years—without any loss of productivity. Dutch pilots in the information-technology sector reveal comparable patterns: flexible working arrangements centred on results reduced gender differences in remuneration growth by between 8 and 15 per cent over three years (SER, 2023).

The implementation of results-based job evaluation nevertheless entails substantial organisational requirements. Organisations must make outputs measurable, which proves complex in knowledge-intensive positions. Dutch experiments show that implementation takes an average of between eighteen and twenty-four months in medium-sized organisations, with initial declines in productivity during the transition as employees explore their new freedoms (SER, 2023). Not all occupations are equally suited to this approach: manufacturing, healthcare, and education are subject to inherent temporal and locational constraints that restrict flexibility. Effectiveness also depends on organisational culture. Companies characterised by a strong orientation towards control and low levels of trust systematically fail in implementation, whereas organisations with a strong focus on results and high levels of autonomy are more successful (Hauff et al., 2019). This contextual dependence means that results-based evaluation is not a universally applicable solution, although it appears promising for particular sectors and organisations.

A second alternative refines pay transparency by making explicit the contextual factors that legitimately account for remuneration differences. Rather than publishing only absolute pay differences, organisations could report gender pay gaps disaggregated by sector, occupational level, experience, working hours, and individual choices between flexibility and intensity. Icelandic experience suggests that such nuanced transparency may be more effective. Organisations that obtained Equal Pay Certification by documenting methodologies that controlled for legitimate pay variation showed higher retention of female talent (Rafnsdóttir & Heijstra, 2013). Implementation plausibility nevertheless requires substantial investment in data infrastructure. Dutch organisations that introduced such systems reported initial administrative costs of between €15,000 and €40,000, but subsequent structural savings through reduced conflict (AWVN, 2024).

A third alternative recognises that status competition remains a fundamental motivation, but diversifies the criteria by which status is conferred. Traditional organisations primarily assign status on the basis of income and hierarchical rank. Alternatively, organisations could assign status across multiple dimensions, including expertise, mentoring, innovation, and societal impact. Empirical evidence is available from organisations operating technical career ladders alongside managerial ladders. Google's implementation of such systems—in which Senior Engineers receive remuneration comparable to that of Directors—correlated with a substantial reduction in gender differences in retention (Page, 2019). Dutch universities that implemented comparable systems observed similar patterns: recognition of excellence in teaching alongside research excellence reduced gender differences in career satisfaction (VSNU, 2023).

Operationalising multidimensional evaluation mechanisms requires explicit criteria and transparent procedures. Successful implementations are characterised by participatory development, through which employees themselves define the dimensions they regard as valuable. Microsoft's implementation of a five-dimensional evaluation system—technical expertise, leadership, innovation, mentoring, and community impact—emerged through bottom-up consultation and was operationalised through peer-review mechanisms in which colleagues evaluated one another's contributions (Nadella, 2017). This approach increases legitimacy and prevents management from unilaterally determining what counts as valuable. Dutch organisations that introduced comparable systems report increased employee satisfaction and retention, but also initial resistance from managers losing control over evaluation processes (AWVN, 2023). The transition therefore requires investment in cultural change as well as structural adjustment.

These alternatives have substantial limitations. Flexible job evaluation requires organisational cultures that value results over process, which is not feasible in every sector. Nuanced transparency requires a degree of sophistication in human-resources systems that many organisations currently lack. Multidimensional evaluation mechanisms are complex to operationalise. More importantly, these alternatives may reduce gender pay gaps without eliminating them. If biological constraints contribute substantially to pay differences, such differences will persist even in optimally designed systems. The relevant question is not whether complete equality is attainable, but whether the remaining inequality is primarily discriminatory or reflects legitimate heterogeneity.

Nevertheless, these alternatives suggest that accommodating biological mechanisms may be more effective than denying them. Policy that recognises heterogeneity among employees in preferences, risk tolerance, and status orientation, and designs interventions that accommodate this variability, has demonstrated substantially greater effectiveness in limited trials than traditional mechanisms based on assumptions of homogeneous populations.

9.2.6 Conclusion

The analysis of the gender pay gap in the Netherlands shows that traditional policy instruments—legal transparency requirements, economic market incentives, and cultural awareness campaigns—systematically demonstrate limited effectiveness across different institutional contexts. This convergence of policy outcomes suggests that deeper mechanisms are operating than those conceptualised by conventional policy theories.

Evolutionary-biological constraints provide additional explanatory power. Reproductive strategies manifest themselves in systematic differences in risk preferences that structure sectoral and contractual choices. Mate-choice mechanisms create asymmetrical status pressures that influence work intensity and negotiation behaviour. These mechanisms do not operate deterministically, but structure the range of possibilities within which choices are made. Their cross-cultural robustness and temporal persistence suggest that they are not entirely cultural in origin.

Policy alternatives that accommodate rather than disregard these constraints have demonstrated greater effectiveness in limited trials. Flexible job evaluation that values output over input, nuanced transparency that recognises legitimate variation, and multidimensional evaluation mechanisms that reward diverse forms of contribution reduce gender differences without productivity losses. These alternatives do not eliminate gender pay gaps entirely, but suggest that accommodating biological mechanisms may be more effective than imposing uniformity. The implication for Dutch policy is that implementation of EU Directive 2023/970 may remain limited in effectiveness if it merely increases transparency without addressing underlying mechanisms. A more effective approach would combine transparency with interventions that restructure choice architecture, recognise legitimate variation, and facilitate multiple forms of recognition.

This case study shows that the analysis of gender pay gaps benefits from a multi-layered approach integrating legal, economic, and cultural mechanisms with evolutionary-biological constraints. No single explanatory layer is sufficient in itself. Legal transparency is necessary for identifying discrimination, but proves insufficient for explaining persistent differences. Economic incentives increase participation, but do not automatically produce convergence in sectoral distribution and occupational choices. Cultural interventions increase awareness, but do not disrupt the structural mechanisms shaping those choices. Biological constraints provide additional explanatory power regarding why certain patterns remain robust across institutional contexts, but do not determine outcomes. Integrating these perspectives suggests that effective gender-pay-gap policy cannot be confined to interventions addressing a single dimension, but must recognise that pay differences have multiple causes requiring different policy responses.

9.3 Case B: The #MeToo Problem — Biological Mechanisms in Conditions of Power Asymmetry

9.3.1 Introduction

In October 2017, the global #MeToo movement reached the Netherlands, followed by comparable developments in several European countries and Canada. Various actresses and theatre professionals spoke publicly about their experiences of sexual harassment and abuse of power. Similar revelations subsequently emerged in the media, including *The Voice of Holland* in 2022, in sport, including NOS Sport in 2023, and in politics. These events illustrate that sexual harassment is not a marginal phenomenon, but a structural problem that appears to be rooted in power relations and communication patterns which persist despite decades of policy intervention.

This case examines why traditional policy measures against sexual harassment have demonstrated limited effectiveness and what role biological constraints may play in explaining this persistence. The central question is: to what extent can evolutionary-biological mechanisms contribute to understanding the persistence of sexual harassment, and what policy alternatives emerge when these mechanisms are accommodated rather than disregarded?

The analysis follows the four-stage framework set out in Chapter 6. Stage 1 identifies how different stakeholders perceive sexual harassment and which value conflicts arise. Stage 2 evaluates why traditional economic, legal, and religious-cultural interventions systematically fall short. Stage 3 identifies which biological constraints are relevant and how they help explain the failure of traditional approaches. Stage 4 evaluates the plausibility of biologically informed policy alternatives.

Before biological mechanisms can be identified, this case requires an explicit qualification of the problem. Sexual harassment justifies policy intervention when three criteria are met: the phenomenon is sufficiently prevalent to be classified as systematic, the harm is sufficiently serious for spontaneous self-correction to be inadequate, and traditional instruments demonstrably fall short. All three criteria are satisfied. Dutch prevalence data show that 39 per cent of women and 10 per cent of men report relevant experiences (CBS, 2022), a scale that qualifies the phenomenon as structural rather than incidental. Longitudinal studies document substantial psychological and labour-market harm among victims, including increased exit from employment, reduced productivity, and long-term health problems (Eurofound, 2015). The failure of traditional instruments, documented in Stage 2, also makes government intervention defensible where markets and social norms fail to produce self-correction.

The gender asymmetry in this analysis—women predominantly as victims and men predominantly as perpetrators—is not an assumption, but an empirical finding requiring justification. CBS data indicate an approximate four-to-one ratio in victimisation. The distribution of perpetrators is even more asymmetrical: in 89 per cent of reported cases, the perpetrator is male, and in 78 per cent the perpetrator is a man occupying a higher hierarchical position (Netherlands Institute for Human Rights, 2023). This asymmetry justifies a gender-focused analysis, not because male victimisation is irrelevant, but because the policy-relevant configuration points overwhelmingly in one direction. Where male victimisation departs from this pattern, such cases warrant separate policy attention beyond the scope of the present case. This case focuses on four countries—the Netherlands, France, Sweden, and Canada—which represent substantially different institutional contexts but display comparable patterns of policy failure. The Netherlands is characterised by pragmatic but fragmented measures. France adopts a legally formalistic approach. Sweden combines progressive gender equality with a high propensity to report incidents. Canada implements extensive prevention programmes through external audits. Despite this variation, sexual harassment remains a persistent problem in all four countries, suggesting that more mechanisms are operating than conventional policy theories conceptualise.

9.3.2 Stage 1: Multi-Stakeholder Problem Analysis

Sexual harassment in the workplace constitutes a complex policy problem involving a wide range of actors with differing interests and perceptions. The #MeToo affair demonstrates that victims, employers, legal institutions, and wider society each employ their own definition of the problem. This analysis systematically identifies how stakeholders position the phenomenon in the four selected countries, showing that differences in institutional context do not prevent similar tensions from arising around power relations, reporting procedures, and public legitimacy.

Victims constitute the group most directly affected. In the Netherlands, surveys conducted by CBS and SCP show that approximately four in ten women have experienced unwanted sexual attention, but that only a minority are willing to report it to formal authorities (CBS, 2022; SCP, 2020). Amnesty International Netherlands (2021) observes that fear of damage to one's career and reverse attribution of blame constitute structural barriers. The investigation into *The Voice of Holland* demonstrated how dependence on individuals occupying positions of power can keep victims silent for prolonged periods (Van Doorne, 2023). According to the European Union Agency for Fundamental Rights (2014), France reported comparable rates of experience, while formal complaints procedures are lengthy and provide limited protection. Sweden is known for its high propensity to report incidents, supported by the strong public institutionalisation of gender equality. In 2018, more than fifty sector-specific #MeToo campaigns emerged (SOM Institute, 2020). Canada is characterised by comparatively high levels of trust in formal procedures conducted by independent commissions, although the reputational and social consequences for victims remain substantial (CHRC, 2021).

Employers bear a legal and moral responsibility to provide a safe working environment. In the Netherlands, the Labour Inspectorate has found that formal compliance is high, but practical follow-up remains limited (Netherlands Labour Authority, 2023). At NOS Sport, reports were systematically ignored or trivialised (Van Rijn Investigative Committee, 2023). French employers follow extensive compliance protocols primarily to limit legal liability, while investing only to a limited extent in cultural change (MIPROF, 2024). Sweden invests substantially in compulsory training, but managers remain uncertain about how to interpret signals (Brå, 2025). Canada requires proactive prevention programmes supported by external audits, resulting in reports being taken more seriously, although victims continue to face the risk of social isolation (Employment and Social Development Canada, 2023).

The legal sector plays a central role in the formal handling of cases. In the Netherlands, the Netherlands Institute for Human Rights upholds only a limited proportion of complaints because of evidential difficulties (Netherlands Institute for Human Rights, 2023). In France, legal proceedings take an average of three to five years (Ministère de la Justice, 2021). Sweden introduced consent-based legislation in 2018 that shifted the evidential emphasis, but conviction rates rose only marginally, from 11 to 14 per cent (Brå, 2025). Canada facilitates mediation through the Canadian Human Rights Commission, but procedures remain lengthy and emotionally burdensome (CHRC, 2021).

The stakeholder analysis identifies three fundamental value conflicts that persist across national contexts. A tension exists between protecting victims and safeguarding legal certainty for those accused. A further tension exists between employer autonomy and public responsibility. Finally, there is a tension between cultural norm change and behavioural change. These conflicts help explain why countries that endorse the same objectives nevertheless choose fundamentally different policy routes.

9.3.3 Stage 2: Analysis of Traditional Policy Mechanisms

Traditional policy interventions are organised into three categories: legal instruments that regulate behaviour through formal rules and sanctions, economic instruments that create incentives for preventive behaviour, and religious-cultural instruments intended to influence norms and values. This analysis systematically evaluates why each mechanism demonstrates limited effectiveness.

Legal mechanisms constitute the primary policy response. The Netherlands implements anti-discrimination legislation through Article 7:646 of the Dutch Civil Code. Evaluations show that only 15 per cent of complaints result in formal sanctions, largely because of evidential difficulties (Netherlands Institute for Human Rights, 2023). Procedures take an average of eighteen to twenty-four months. France applies comparable legislation through the *Code du travail*, where proceedings take an average of three to five years and conviction rates remain below 10 per cent (Ministère de la Justice, 2021). Sweden introduced consent-based legislation in 2018, which increased the propensity to report by 23 per cent, but conviction rates rose only from 11 to 14 per cent (Brå, 2025). Canada facilitates mediation, but 60 per cent of complaints are withdrawn before a formal decision is reached (CHRC, 2021).

The systematic limitations converge around three problems. First, legal proceedings require objective evidence, which is often unavailable in cases of sexual harassment. Second, lengthy proceedings create secondary victimisation. Third, the risk of social stigmatisation remains substantial. This convergence suggests that legal mechanisms are structurally inadequate for phenomena that manifest themselves primarily through informal power relations.

Economic mechanisms seek to encourage or deter organisations through financial and reputational incentives rather than formal obligations. Policymakers assume that organisations will change their behaviour when desirable conduct generates rewards, such as tax advantages, subsidies, or public recognition, and undesirable conduct imposes costs, for example through reputational damage or reduced attractiveness in the labour market. In the Netherlands, organisations are encouraged financially and reputationally to develop active integrity and reporting policies; those that perform well in this respect receive positive public attention and find it easier to retain staff (Netherlands Labour Authority, 2023). France employs comparable economic incentives, with public contracts and subsidies being awarded more frequently to companies that demonstrably invest in inclusive workplace cultures (MIPROF, 2024). Sweden links performance monitoring and public rankings to reputational advantages, thereby rewarding compliance through market confidence (Brå, 2025). In Canada, external audits and certification systems reinforce the value of corporate social responsibility as a competitive advantage, although structural behavioural change remains limited (Employment and Social Development Canada, 2023).

These systematic limitations result in a discrepancy between formal compliance and substantive behavioural change. Organisations optimise their protection against legal liability through codes of conduct and training, but these instruments prove insufficient to restructure underlying cultures of power.

Religious-cultural mechanisms seek to influence norms through awareness campaigns and training. Since 2018, the Netherlands has implemented extensive awareness campaigns, with public awareness increasing substantially from 67 to 83 per cent, while the propensity to report rose only from 12 to 18 per cent (SCP, 2020). France implements unconscious-bias training, after which managers report heightened awareness while the relevant behaviour persists (MIPROF, 2024). Sweden combines awareness campaigns with extensive gender-equality education and achieves the highest scores on gender-equality indicators, yet 46 per cent of women report experiences of unwanted attention, a proportion comparable to that in less progressive countries (SOM Institute, 2020). Canada implements compulsory diversity and inclusion training, with observable short-term effects but limited long-term behavioural change (Canadian Women's Foundation, 2021).

The systematic limitation lies in the discrepancy between attitudinal change and behavioural change. Awareness campaigns facilitate normative consensus, but this does not automatically translate into changed behaviour. The Swedish paradox—the highest levels of gender equality alongside persistent harassment—illustrates the inadequacy of cultural mechanisms when they fail to address deeper mechanisms.

The fact that these three types of mechanism produce policy failure in all four countries suggests that traditional explanations are inadequate. Legal mechanisms fail because of evidential difficulties and secondary victimisation. Economic mechanisms facilitate formal compliance without substantive cultural change. Religious-cultural mechanisms produce attitudinal change without behavioural change. This convergence justifies exploring alternative explanatory frameworks that conceptualise deeper mechanisms.

Impact of the mechanisms. The cross-national analysis identifies three levels at which traditional mechanisms systematically fail. At the first level, implementation fails: legal proceedings are too lengthy, averaging two and a half years across the four countries; economic sanctions are too weak, amounting to no more than €3,000–€5,000 in the countries examined; and cultural interventions are too superficial, consisting of one-off training sessions without follow-up.

At the second level, conceptualisation fails. Legal mechanisms conceptualise harassment as an individual incident rather than a systematic pattern. Economic mechanisms conceptualise organisations as rational actors responding to incentives rather than as social systems characterised by power structures. Religious-cultural mechanisms conceptualise behaviour as driven by attitudes rather than as structurally shaped.

At the third level, there is a failure to engage with the underlying mechanisms. None of the three traditional mechanisms addresses the power asymmetries, differences in perception, communication patterns, or coalition dynamics that structure harassment. This threefold failure justifies the exploration of alternative explanatory frameworks that conceptualise deeper mechanisms.

9.3.4 Stage 3: Identification of Biological Constraints

The systematic limitations of traditional interventions suggest that deeper mechanisms are operating beyond the reach of conventional policy theories. This third stage of the analysis identifies which of the ten biological constraints set out in Chapter 3 are relevant to explaining persistent sexual harassment. The analysis identifies three dominant biological constraints—social hierarchy and status competition, reproductive strategies and mate choice, and coalition formation. It also introduces one additional explanatory variable outside the formal framework of ten constraints: sex-related differences in the communication of interpersonal boundaries. Perceptual asymmetry is not treated as a separate constraint, but as an empirical manifestation of reproductive strategies and mate choice. Crucially, these biological constraints and the additional explanatory variable primarily offer explanatory power regarding the behaviour of perpetrators and the organisational structures that facilitate such behaviour, rather than regarding the vulnerability of victims.

Social hierarchy and status competition. Status competition is an evolutionarily conserved mechanism through which individuals in positions of power display behaviour that demonstrates dominance and neutralises competition (constraint 5). Buss (2019) shows that positions of power are evolutionarily perceived as means of increasing access to resources and potential partners, which helps explain why harassment occurs disproportionately in hierarchical settings with weak external oversight. Dutch data confirm this pattern: in 73 per cent of reported cases of harassment, the perpetrator occupied a higher hierarchical position (Netherlands Institute for Human Rights, 2023). This is not a coincidental correlation, but a predictable consequence of status-competition dynamics: when formal sanctions are

weak and reputational risks remain limited, individuals may employ harassment as a dominance strategy without incurring substantial costs. The mechanism therefore does not explain why individual men engage in harassment, but why harassment is systematically concentrated in particular configurations of power, irrespective of country or sector.

Reproductive strategies, mate choice, and perceptual asymmetry. Reproductive strategies and mate choice—constraint 3—generate not only behavioural differences in career orientation and risk preferences, as analysed in Case A, but also systematic differences in the interpretation of sexual signals. Abbey (1982) demonstrated experimentally that men interpret women's friendliness as sexual interest more frequently than women themselves intend. This difference in perception is a derivative manifestation of asymmetrical reproductive strategies: evolutionarily shaped mechanisms through which men are more likely to overestimate than underestimate reproductive opportunities—a strategy that may have been evolutionarily adaptive but can generate transgressive behaviour in professional contexts. Perceptual asymmetry is therefore not a separate constraint, but a specific manifestation of constraint 3 in interpersonal interaction.

The policy relevance of this manifestation is twofold. Some transgressive behaviour arises from this difference in interpretation, in cases where the perpetrator is unaware that the behaviour is transgressive. A substantial other category involves conscious and intentional behaviour in which perceptual confusion plays no role (Fitzgerald et al., 1997). This distinction has direct policy implications: the first category warrants interventions that establish explicit communication norms and reduce interpretative ambiguity, whereas the second requires structural sanctions. Policy based exclusively on awareness-raising fails to recognise that perceptual interventions do not affect the second category.

Communication differences as an additional explanatory variable and a structural legal problem. Sociolinguistic research documents that women, on average, employ more indirect communication styles when setting boundaries (Tannen, 1990). This pattern is statistically consistent but not deterministic. Its policy relevance lies not in the communication behaviour of victims itself, but in the way legal procedures construct that pattern as an evidential problem. Swedish consent legislation illustrates this: judges interpret indirect rejection as ambiguity rather than as the absence of consent, meaning that the burden of proof effectively remains with the victim despite the formal legislative change (Brå, 2025). This communication pattern is analytically related to reciprocity and conflict-avoidance behaviour, but is treated in this case as an additional explanatory variable rather than as a separate biological constraint within the formal framework. The primary problem is the legal architecture that adopts male communication norms as its standard, rather than women's communication behaviour

Coalition formation and the institutional protection of perpetrators. Coalition formation—constraint 10—is the most directly policy-relevant mechanism in this case. Evolutionarily shaped in-group loyalty helps explain why organisations with predominantly male leadership systematically tend to protect accused individuals and marginalise victims—not through explicit collusion, but through implicit solidarity that frames complaints as a threat to the group. Dutch cases involving NOS Sport and *The Voice of Holland* illustrate this pattern: reports were not ignored solely because of individual malice, but because of an organisational culture in which protecting the in-group automatically took precedence over addressing complaints (Van Rijn Investigative Committee, 2023). Canadian data confirm the structural nature of this pattern: organisations with gender-diverse leadership teams handle complaints demonstrably more fairly, not because female leaders are morally superior, but because coalition dynamics operate less homogeneously and are consequently less protective.

Interaction among the three biological constraints and the additional explanatory variable. The three biological constraints, together with the additional explanatory variable of communication differences, interact in ways that may create a self-sustaining system without requiring explicit intent on the part of individual actors. Hierarchical concentrations of power, produced through status competition, facilitate harassment at low cost. Perceptual asymmetry as a manifestation of reproductive

strategies creates ambiguity that complicates legal enforcement in the first category of cases. Coalition formation protects perpetrators institutionally and isolates victims. The result is a configuration in which rationally acting individuals—perpetrators, managers, and legal decision-makers—may each operate within the rules while the system as a whole structurally facilitates harassment. This explains why interventions directed at individual behaviour systematically fall short: the problem is architectural rather than individual.

9.3.5 Stage 4: Evaluation of Biologically Informed Policy Alternatives

This fourth stage of the analysis evaluates policy alternatives according to their capacity to mitigate or channel the three biological constraints and the additional explanatory variable identified in Stage 3. Perceptual asymmetry is addressed as a manifestation of reproductive strategies and mate choice. The four policy alternatives do not correspond one-to-one with four separate biological constraints, but are each linked to a specific mechanism, manifestation, or interaction identified in the preceding analysis..

Alternative 1: Rotation of power and external oversight—mitigating status competition in hierarchical settings. Social hierarchy facilitates harassment where power is highly concentrated and the costs of sanctions remain low. The biological mechanism—the maintenance of status through dominance behaviour—is not eliminated by codes of conduct because these leave the underlying power structure intact. Effective mitigation requires both structurally increasing the costs of dominance behaviour and disrupting the concentration of power that facilitates it.

Systematic rotation of managers reduces the period during which an individual can operate without external scrutiny, thereby shortening the time horizon of status competition. External oversight by independent committees with reporting lines outside the organisation increases the likelihood of sanctions, thereby altering the cost-benefit ratio of harassment as a dominance strategy. Canadian experience with independent commissions shows increased reporting and greater procedural justice (CHRC, 2021). Dutch pilot programmes at public broadcasters involving external confidential advisers increased reporting by 34 per cent compared with internal confidential advisers (Netherlands Labour Authority, 2023). The mechanism is not removed, but the operational conditions under which it functions are made structurally less favourable.

Alternative 2: Explicit consent frameworks—channelling perceptual asymmetry. Perceptual asymmetry—the evolutionarily shaped tendency among men to interpret friendliness as sexual interest more frequently—generates a category of transgressive behaviour in which the perpetrator is unaware of the transgressive nature of the conduct. Conventional legal interventions fail here because they treat ambiguity as an evidential problem rather than as a structural difference in interpretation.

Explicit consent frameworks channel this mechanism by shifting the communication norm from implicit interpretation to explicit confirmation, thereby reducing the scope within which perceptual asymmetry can operate. The policy implication is twofold: organisational protocols that establish formal boundaries for professional interactions, and a legal architecture that adopts explicit consent rather than the absence of refusal as its standard. Swedish evaluations show that consent legislation reduces ambiguity, but that implementation remains challenging when judges are reluctant to interpret indirect communication as indicating an absence of consent (Brå, 2025). This points to a residual problem: legal decision-makers themselves employ communication norms that perpetuate the mechanism, requiring supplementary training for judges and prosecutors.

Alternative 3: Signal logging and pattern detection—early detection of status-competition and coalition dynamics. Both status competition and coalition formation operate as self-reinforcing patterns: once a perpetrator has engaged in transgressive behaviour without sanction, the likelihood of

sanctions may decline as that person's position becomes stronger. Individual complaints procedures fail to detect this pattern because they respond to incidents rather than to the dynamics that generate them.

Signal logging through anonymous external platforms detects early indications of concentrations of power, the social isolation of potential victims, and reputational damage—patterns that precede formal complaints. French pilot programmes show that early pattern detection facilitates intervention before escalation occurs (MIPROF, 2024). The mechanism is not mitigated in this instance, but its progression is interrupted before the self-reinforcing dynamic provides the perpetrator with comprehensive protection.

Alternative 4: Gender-diverse decision-making teams—neutralising coalition formation. Coalition formation—the evolutionarily shaped in-group loyalty that leads male managers to protect accused colleagues—is not corrected by codes of conduct or training because the mechanism operates implicitly and largely unconsciously. The effective intervention is structural: disrupting the coalition's homogeneity by assigning decisions concerning harassment cases to gender-diverse committees.

This does not eliminate the mechanism, but makes coalition dynamics less one-sided: a diverse group is less likely to converge automatically on protecting the in-group. Canadian evaluations show that gender-diverse committees systematically reach fairer decisions and isolate victims less frequently (CHRC, 2021). Dutch evaluations at universities confirm this pattern (Netherlands Institute for Human Rights, 2023). The limitation is genuine: gender-diverse teams require sufficient numbers of women in leadership positions, who remain scarce in many sectors. This makes the alternative dependent on prior interventions in the gender distribution of leadership roles.

The four alternatives are complementary because each addresses a separate mechanism. Rotation of power makes status competition more costly. Consent frameworks reduce the operational scope of perceptual asymmetry. Signal logging interrupts the self-reinforcing progression of patterns. Gender-diverse teams neutralise coalition dynamics. None of the four is sufficient in isolation: a system that implements only rotation of power leaves perceptual asymmetry and coalition formation intact. Effective policy requires their combination.

9.3.6 Conclusion

The analysis of the #MeToo case in the Netherlands, France, Sweden, and Canada shows that traditional instruments systematically fail because they address symptoms without engaging with the mechanisms that produce them. Legal procedures encounter evidential problems arising partly from perceptual asymmetry, from differences in the communication of interpersonal boundaries, and from a legal architecture that adopts implicit communication norms as its standard. Economic incentives facilitate formal compliance without restructuring the hierarchical power relations that enable harassment. Cultural interventions produce attitudinal change without disrupting the coalition behaviour that institutionally protects perpetrators.

The evolutionary-biological analysis identifies three biological constraints, supplemented by one additional explanatory variable outside the formal framework. Status competition in hierarchical settings explains why codes of conduct are ineffective when unaccompanied by restructuring of power. Perceptual asymmetry, understood as a manifestation of reproductive strategies and mate choice, explains why awareness campaigns may fail to reduce unintentional transgressive behaviour. Communication differences constitute the additional explanatory variable and help explain why legal evidential standards may systematically disadvantage victims. Coalition formation explains why internal complaints procedures in male-dominated organisations may operate structurally to the disadvantage of victims.

The policy alternatives derived from this analysis may be more effective not because they eliminate the biological constraints or the additional explanatory variable - which is neither possible nor desirable as an analytical objective - but because they make the operational conditions of each mechanism structurally less favourable. Rotation of power increases the likelihood of sanctions for behaviour driven by status competition. Consent frameworks reduce the interpretative scope available to perceptual asymmetry. Signal logging interrupts the self-reinforcing progression of patterns of harassment. Gender-diverse committees neutralise the homogeneity on which coalition dynamics depend. Combining these four interventions addresses the problem architecturally—at the level of the structures that enable individual behaviour—rather than at the individual level.

The central conclusion is therefore more precise than the conventional proposition that policy must 'take biological mechanisms into account'. Each biological constraint—and, where relevant, the additional explanatory variable—requires a corresponding structural intervention that alters the conditions under which it affects behaviour or institutional decision-making. Policy that fails to establish this connection—leaving power structures intact while introducing codes of conduct, or introducing consent legislation without revising legal standards of assessment—is not biologically informed, but conventional policy expressed in biological terminology.

9.4 Cross-Case Analysis: Effectiveness of Evolutionary-Biologically Informed Alternatives

Comparison of the Gender Pay Gap and #MeToo cases shows that both phenomena are shaped by the same evolutionary-biological constraints identified in Chapter 3, although these constraints manifest themselves differently in each domain. Despite their divergent institutional contexts—economic remuneration in one case and social interaction in the other—both involve three shared mechanisms: reproductive strategies and mate choice (constraint 3), social hierarchy and status competition (constraint 5), and coalition formation (constraint 10). In the #MeToo case, the analysis additionally employs sex-related differences in the communication of interpersonal boundaries as an explanatory variable outside the formal framework of ten biological constraints. Perceptual asymmetry is treated not as a separate constraint, but as a manifestation of reproductive strategies and mate choice. The analysis also shows that these mechanisms operate in both cases primarily through the surrounding institutional environment—in organisational structures, standards of assessment, and coalition dynamics—and not exclusively through the behaviour of the individuals involved.

Similarities. In both cases, traditional legal and economic measures prove only partially effective because they address symptoms without engaging with the mechanisms that produce them. Formal equality does not alter the underlying behavioural logic. Within remuneration structures, input-based standards of evaluation that were historically modelled on employees without caring responsibilities continue to operate structurally to the advantage of men. In workplace interactions, concentrated hierarchical power continues to create conditions under which transgressive behaviour can occur at relatively low cost. Both cases show that coalition formation within organisations generates stable protective mechanisms for the dominant group, whether through remuneration committees that legitimise status competition or management teams that protect accused colleagues. In both cases, assertive attempts at correction—salary negotiation by women and the submission of complaints by victims—are also sanctioned by the surrounding environment in ways that discourage such behaviour, even when individual decision-makers are unaware of the structural effects of those sanctions.

Differences. The Gender Pay Gap case locates inequality primarily at the structural level. Input-based evaluation systems and norms of status competition translate into a persistent income hierarchy that remains in place even where qualifications and performance are equivalent. The interventions that appear effective—output-oriented job evaluation and diversification of the criteria through which status is conferred—restructure the architecture of remuneration without attempting to eliminate the underlying motivations.

The #MeToo case locates inequality primarily at the interpersonal and institutional levels. Power asymmetry facilitates transgressive behaviour, coalition formation protects perpetrators, and legal architecture disadvantages victims through evidential standards that treat implicit communication norms as the default. The additional explanatory variable of sex-related communication differences is particularly relevant here: indirect boundary-setting may be construed as ambiguity, even where consent is absent. Effective interventions in this domain—rotation of power, gender-diverse committees, signal logging, and explicit consent frameworks—disrupt the structural conditions that sustain these patterns.

ERQ1 — Explanatory power. Both cases show that evolutionary-biological mechanisms provide supplementary explanatory power where conventional economic and legal theories fall short. In the Gender Pay Gap case, norms of status competition and reproductive strategies help explain why pay differences persist despite long-standing policy interventions: economic models predict convergence under conditions of equal productivity, yet persistent divergence is observed. In the #MeToo case, hierarchical status dynamics and coalition formation help explain why organisations with formal codes

of conduct and high compliance scores may nevertheless continue to facilitate harassment systematically. Perceptual asymmetry, as a manifestation of reproductive strategies, and communication differences, as an additional explanatory variable, further explain why awareness-raising and formal evidential rules do not necessarily prevent or adequately address transgressive conduct. In both cases, these mechanisms help account for anomalies that traditional models cannot readily accommodate.

ERQ2 — Predictive value. The comparison shows that resistance to policy arises systematically where measures cut across evolutionarily stable behavioural logics without altering the structural conditions in which those logics operate. In the Gender Pay Gap case, organisations responded to transparency requirements through symbolic compliance and informal compensation, a pattern that can be anticipated from status-competition and coalition dynamics. In the #MeToo case, legal interventions produced formal compliance without corresponding behavioural change and, in some instances, raised the effective threshold for reporting because victims anticipated reputational risks. Differences in the communication of interpersonal boundaries also make it foreseeable that procedures based on explicit refusal will misclassify some instances of absent consent as ambiguous. These patterns were consistent with expectations derived from the identified mechanisms and additional explanatory variable, but were not anticipated by traditional policy models.

ERQ3 — Effectiveness of alternatives. In both cases, interventions appear more effective when they alter the structural conditions under which biological mechanisms operate rather than attempting to suppress individual behaviour. In the Gender Pay Gap case, output-oriented job evaluation and status diversification are more effective than transparency requirements alone because they restructure the architecture of remuneration without seeking to eliminate the motivation for status. In the #MeToo case, rotation of power, gender-diverse committees, signal logging, and explicit consent frameworks are more promising than codes of conduct and awareness campaigns because they disrupt concentrations of power, coalition dynamics, and interpretative ambiguity. The common logic is that effective policy intervenes at the level of the structures that enable and shape individual behaviour, rather than at the level of individual intentions or attitudes alone.

Conclusion. The comparison shows that structural and interpersonal inequality within modern institutions arise partly from the same three evolutionary-biological constraints—reproductive strategies, status competition, and coalition formation—which manifest themselves in domain-specific ways but operate in both cases primarily through the institutional environment. In the #MeToo case, sex-related differences in the communication of interpersonal boundaries constitute an additional explanatory variable outside the formal framework of ten constraints. This variable does not replace the biological mechanisms, but clarifies how they interact with evidential standards and organisational procedures.

This has a direct implication for policy design. Interventions that focus exclusively on changing the behaviour of the underrepresented or vulnerable group fail to address several of the mechanisms involved. Effective policy must engage with the organisational structures, evaluative standards, communication norms, and coalition dynamics that favour the dominant group—not as a moral judgement about individuals, but as an architectural correction of systems that institutionalise biologically shaped mechanisms, and their interaction with additional explanatory variables, in ways that perpetuate structural inequality.

Chapter 10: Biological Constraints as an Integrating Factor — Cross-Case Synthesis

10.1 Introduction and Research Question

This chapter brings together the findings from the six cases and reflects on the central research question of this dissertation: how biological constraints can function as an integrating factor within public administration, and what implications this has for understanding policy outcomes across different domains of social conflict.

The structure follows the methodological principles set out in Chapter 6, which introduced the combination of cross-case analysis and pattern matching as an approach for comparing evolutionary-biological mechanisms across different contexts. By examining six Dutch policy cases—distributed across three fields of conflict, namely class conflict, race conflict, and sex conflict—it becomes possible to assess the extent to which particular mechanisms recur despite differences in policy domain and institutional environment.

The individual analyses in Chapters 7 to 9 each provide insight into the manifestation of particular mechanisms. Only through comparison does it become clear which biological constraints recur and how they relate to policy dynamics. This chapter presents that synthesis. It connects the empirical findings and evaluates the extent to which the previously developed framework of ten biological constraints has heuristic value for explaining policy outcomes, without claiming that the framework is exhaustive or causally conclusive.

10.2 Cross-Case Analysis: Patterns across Six Cases

Comparison of the six cases shows that policy outcomes across different domains are constrained by recurring biological mechanisms. Despite the differences between sectors—including remuneration policy, education, integration, and gender relations—several patterns recur. Four mechanisms proved consistently visible: social hierarchy, territorial attachment, coalition formation, and parental investment.

Within the domain of class conflict, social hierarchy emerged as a central driver. Attempts to regulate executive remuneration and bonus structures encountered resistance not because the economic costs were excessive, but because the relative status of executives was threatened. The assumption that equality is self-evidently legitimate conflicted with an evolutionarily shaped sensitivity to status loss. Parental investment also emerged prominently within this domain. Policies intended to promote equality of opportunity encountered the strong willingness of parents to invest time and resources in protecting their children's future prospects. This intergenerational motivation functioned as a stable source of resistance to policy, but also as a driver of selective improvement.

Within race or identity conflict, territorial attachment and coalition formation came clearly to the fore. Interventions intended to distribute migrants more evenly across neighbourhoods encountered predictable resistance when demographic tipping points were crossed. At out-group concentrations of approximately 25–30 per cent, policies that disregarded these constraints provoked defensive responses among established residents. These patterns suggest that territorial perceptions—feelings of ownership, safety, and familiarity—cannot readily be ignored in policies pursuing social mixing.

Coalition formation was also structurally present. Parents selected schools not solely on the basis of quality, but also on the basis of group identity. Policy objectives concerning distribution and equal quality were consequently undermined by loyalty to one's own group, even where this appeared rationally disadvantageous.

Within sex conflict, reproductive strategies and mate-choice mechanisms again became clearly visible. The gender pay gap persisted despite formal equality rules because deeply rooted preferences and status dynamics continued to influence actual choices. Policy initiatives that sought to eliminate these differences proved relatively ineffective. Responses to the #MeToo movement, by contrast, showed that normative change may be possible when policy explicitly addresses the underlying status and mating dynamics.

The #MeToo case also introduced an additional explanatory variable outside the formal framework of ten biological constraints: sex-related differences in the communication of interpersonal boundaries. This variable helps explain how indirect boundary-setting may be interpreted as ambiguity within organisational and legal procedures. It does not constitute an eleventh biological constraint, but clarifies how the identified mechanisms interact with evidential standards and institutional communication norms.

Across the six cases, a coherent picture therefore emerges. Policy interventions generally failed where they disregarded evolutionarily shaped behavioural tendencies and achieved better results where they channelled those tendencies in socially constructive directions. This does not mean that biology determines policy outcomes, but that it marks the constraints within which policy can operate credibly and sustainably.

The cross-case analysis therefore supports the hypothesis that the ten biological constraints are not merely abstract theoretical constructs, but empirically recognisable limits to the capacity of public policy to shape social outcomes. They do not provide a deterministic explanatory model, but increase the plausibility of policy explanations in contexts where traditional economic, legal, or cultural approaches prove insufficient. The additional explanatory variable identified in the #MeToo case demonstrates at the same time that the ten-part framework need not encompass every empirically relevant factor in order to retain its analytical value.

10.3 Validity of the Three-Conflict Taxonomy

The division into three fields of conflict—class conflict, race conflict, and sex conflict—was selected methodologically to ensure variation across social contexts containing economic, territorial, and interpersonal dimensions. Comparison of the six cases confirms that this tripartite division was analytically productive because it reveals three distinct arenas in which biological constraints operate in different ways.

In the cases concerning class conflict, social hierarchy and parental investment were central. The economic logic of redistribution and equality of opportunity proved insufficient where relative position and the future prospects of one's own family carried greater weight than abstract objectives of equality. Within race or identity conflict, territorial attachment and coalition formation came to the fore. Here, demographic tipping points and group boundaries played an important role, even where the objective benefits of integration were evident.

Within sex conflict, reproductive strategies and mate-choice mechanisms were clearly visible in employment relations and normative change. Social hierarchy and coalition formation also proved relevant, particularly in the #MeToo case. In addition, sex-related differences in the communication of interpersonal boundaries functioned as an explanatory variable outside the formal framework, helping

to clarify why legal and organisational procedures may systematically interpret certain forms of boundary-setting as ambiguous.

At the same time, the tripartite division is not absolute. Several constraints operate across domains: social hierarchy also manifests itself in segregation and gender issues, while parental investment plays a role in migration and educational opportunities. The taxonomy therefore functions not as a rigid classification, but as a strong heuristic framework that enables comparison between policy domains without reducing their internal complexity.

The validity of the three-conflict taxonomy lies primarily in its explanatory and organisational value. It makes it possible to structure patterns and reveal domain-specific variation without suggesting that each biological mechanism is uniquely associated with one particular domain. In this sense, the tripartite division is not a limitation, but an analytical architecture that helps organise the underlying logic of social conflict. The taxonomy thus retains both its heuristic power and its flexibility: it guides the analysis without overshadowing the dynamics of the constraints themselves or excluding additional explanatory variables that emerge from the empirical cases.

10.4 Evaluation of the Framework of Ten Biological Constraints

The framework of ten evolutionary-biological constraints provided the analytical frame of reference for the six case analyses. The comparison shows that the framework yields differentiated empirical findings. Several mechanisms recur across multiple policy domains, whereas others become visible primarily within one specific context. None of the mechanisms manifests itself in all six cases in the same manner or with the same intensity.

Social hierarchy and status competition emerged in the cases concerning executive remuneration, meritocratic educational selection, and the two gender cases. In these policy domains, relative position influenced behavioural responses that could not be explained fully in terms of absolute material interests. Coalition formation likewise had a broad scope. The mechanism was visible in elite networks surrounding executive remuneration, in ethnic and cultural group formation, in patterns of school choice, and in the institutional protection of accused individuals in the #MeToo case.

Parental investment came particularly to the fore in the two education cases. In the case of equality of educational opportunity, this mechanism helped explain why parents deployed their resources to protect their children's relative prospects. In the case of educational segregation, it helped explain why parents were willing to incur costs by travelling farther, selecting another school, or relocating when they perceived risks to their child.

Territorial attachment emerged primarily in the immigration case. There, the immediate living environment proved relevant to the way demographic change was experienced. Although spatial context also played an important role in the school-segregation case, because neighbourhood composition partly determined the local pool of pupils, territorial attachment did not independently explain actual school-choice behaviour. Parents were instead willing to leave their own neighbourhood or travel greater distances. Coalition formation, frequency dependence, and parental investment provided more direct explanations for that behaviour.

Other constraints also manifested themselves in more specific forms. Carrying-capacity constraints were expressed in the immigration case through perceptions of societal and local absorption capacity, with the pace of change potentially carrying greater weight than absolute numbers. Reproductive strategies and mate choice were most clearly visible in the cases concerning the gender pay gap and transgressive behaviour. Altruism and reciprocity played a particularly important role in societal assessments of executive remuneration, where acceptance appeared to depend on a recognisable relationship between

performance and reward. Life-history strategies emerged in the case of meritocratic selection, in which the moment of selection coincided with a developmental phase characterised by heightened sensitivity to status and group pressure.

In the #MeToo case, sex-related differences in the communication of interpersonal boundaries also emerged as an additional explanatory variable outside the formal framework of ten biological constraints. This variable was not treated as an eleventh constraint. Rather, it clarified how reproductive strategies and perceptual asymmetry interacted with legal evidential standards and organisational communication norms.

The eighth mechanism, frequency dependence and environmental variability, became visible in the educational-segregation case primarily through frequency dependence. The attractiveness of a school changed partly in response to the existing composition of its pupil population. Successive individual choices could therefore reinforce one another and render intermediate positions unstable. The environmental-variability component emerged less clearly as an independent factor in the cases examined. Resource competition could likewise not be isolated clearly as a separate mechanism, although competition for scarce positions and opportunities remained present in the background of several cases.

The comparison therefore does not confirm that all ten constraints operate in every policy context. It does show that the framework helps to distinguish systematically between different behavioural responses and to connect them to concrete policy outcomes. Variation in empirical visibility does not provide a sufficient basis for establishing a general hierarchy among the mechanisms. It also reflects the selected cases, the level of analysis, and the availability of data.

The table below summarises the findings and connects the mechanisms identified in the cases to the three empirical research questions. It distinguishes between supplementary explanatory power, conditional predictive value, and the plausibility of evolutionary-biologically informed policy alternatives.

	ERQ1: Explanatory power	**ERQ2: Predictive value**	**ERQ3: Effectiveness of alternatives**
Class conflict	**Executive remuneration:** Status competition → ratcheting; coalition formation → self-reinforcing remuneration spiral. **Education:** Parental investment → resistance to meritocratic reform; adolescent status competition → selection effects.	**Executive remuneration:** Status threat → avoidance and symbolic compliance predicted. **Education:** Parental investment → compensatory behaviour in response to early selection predicted.	**Executive remuneration:** Collective reputational model (CH/JP); phased remuneration (UK). **Education:** Later selection (FI/CH); multiple status pathways in vocational education (CH).
Identity conflict	**Immigration:** Territorial attachment → resistance to rapid local change; coalition formation → persistent ethnic clustering; carrying-capacity constraints → pace more important than absolute numbers. **Education:** Coalition formation → group-related school choice; frequency	**Immigration:** Territorial attachment → residential mobility and NIMBY responses predicted; carrying-capacity constraints → unrest during rapid inflows predicted. **Education:** Coalition formation → avoidance behaviour in response to compulsory mixing predicted; frequency dependence → tipping processes predicted;	**Immigration:** Points system and geographical distribution (CA); institutional accommodation of group identity (CA/NL). **Education:** Superordinate school identity (FI/SG); phased change and adaptive monitoring (NL).

	ERQ1: Explanatory power	ERQ2: Predictive value	ERQ3: Effectiveness of alternatives
	dependence → self-reinforcing segregation; parental investment → perceived risk outweighs information about quality.	parental investment → costly compensatory behaviour predicted.	
Sex conflict	**Gender pay gap:** Status norms and input-based evaluation → persistent pay gap; environmental sanctions → assertive behaviour by women discouraged. **#MeToo:** Hierarchy → harassment facilitated; coalition formation → institutional protection of perpetrators; perceptual asymmetry → some unintentional transgressive behaviour; communication differences as an additional explanatory variable → indirect boundary-setting construed as ambiguity.	**Gender pay gap:** Status competition → symbolic compliance with transparency requirements predicted; reproductive strategies → overrepresentation of women in part-time work and stable sectors predicted. **#MeToo:** Coalition dynamics → institutional protection under conditions of concentrated power predicted; status competition → persistence of harassment in weakly supervised hierarchies predicted; communication differences → evidential misclassification of indirect boundary-setting predicted.	**Gender pay gap:** Mandatory certification with reversal of the burden of proof (IS); output-oriented job evaluation (IS); status diversification (NL). **#MeToo:** Rotation of power and external oversight (SE/CA); explicit consent frameworks and revised assessment standards (CA); signal logging (NL); gender-diverse decision-making teams.

Table 10.1 — Cross-Case Matrix of Empirical Findings

The summary matrix shows that the ten constraints have both explanatory and predictive value, provided that they are applied within their appropriate domains of relevance. A differentiated interpretation of the framework is therefore not an oversimplification, but a means of distinguishing between constraints that structurally delimit behaviour and constraints that become visible only under particular circumstances.

In this sense, the framework functions as an empirically grounded analytical structure. It does not provide a conclusive model of causality, but it does offer a consistent set of testable hypotheses concerning the conditions under which policy may succeed or fail.

10.5 Conclusion: Answer to the Central Research Question

The central research question of this dissertation was how biological constraints can function as an integrating factor within public administration, and what consequences this has for explaining policy outcomes. The six policy cases examined show that biological constraints are not merely theoretical assumptions, but constitute empirically recognisable factors across different domains that help explain policy dynamics. Their influence does not manifest itself as determinism, but as a constraining architecture within which policy processes unfold. The answers to the empirical research questions make this visible.

With regard to ERQ1, concerning explanatory power, all three domains of conflict show that biological mechanisms provide supplementary explanations where traditional approaches fall short. In class conflict, social hierarchy and parental investment help explain why redistributive policies and meritocratic systems provoke resistance. In race or identity conflict, territorial constraints and coalition formation help explain why integration policy stagnates despite substantial investment. In sex conflict, reproductive strategies and mate-choice mechanisms help explain why equality policy is only partially effective. The #MeToo case additionally shows that sex-related differences in the communication of interpersonal boundaries may function as an explanatory variable outside the formal framework of ten biological constraints, particularly where organisational and legal procedures interpret indirect boundary-setting as ambiguity.

With regard to ERQ2, concerning predictive value, the findings indicate that these mechanisms not only explain outcomes, but also help anticipate patterns of resistance and policy failure. Status competition anticipated resistance to the regulation of bonuses, territorial attachment anticipated defensive responses to rapid demographic change, and mate-choice mechanisms anticipated the selective effects of gender policy. In the #MeToo case, coalition dynamics and the additional communication variable also generated expectations concerning institutional protection and evidential misclassification. This predictive value remains bounded by plausibility, but extends beyond the explanatory capacity of exclusively economic or legal models.

With regard to ERQ3, concerning the effectiveness of alternatives, the cases indicate that policy performs better when it takes biological constraints into account. International examples illustrate this proposition: the Japanese remuneration model links status to collective reputation; the Canadian integration model combines territorial recognition with an inclusive identity; and Icelandic gender policy recognises structural differences and uses them to support normative change. These approaches are not more successful because they are biologically ‘correct’, but because they correspond more closely with human behaviour as shaped through evolution.

Across the three fields of conflict, four constraints—status sensitivity, territorial attachment, coalition formation, and parental investment—consistently influenced policy effectiveness. They do not determine what policy causes, but delimit what is feasible under given circumstances. Where policy disregarded these constraints or attempted to suppress them, structural resistance emerged. Where policy partially acknowledged them or channelled them constructively, as illustrated by the normative change surrounding #MeToo, progress became possible and potentially sustainable.

The answer to the central research question is therefore as follows: biological constraints function as an integrating factor within public administration because, across policy domains, they mark the structural conditions under which policy may succeed or fail. They do not replace traditional explanatory models, but supplement them by revealing the underlying behavioural logic that defines the limits of policy effectiveness. This integrating function helps explain why different policy domains—economic, social, and cultural—display comparable patterns of resistance and adaptation, even where their institutional forms differ.

These findings do not imply a paradigm shift, but point towards a more realistic theory of public administration: a discipline that takes account of the biological constraints on human behaviour may understand policy outcomes more accurately and potentially influence them more effectively.

10.6 Limitations and Further Research

The synthesis presented in this chapter shows that biological constraints have substantial explanatory potential in relation to a wide range of policy outcomes. At the same time, this result requires careful qualification. The analysis in this dissertation is based on six Dutch cases deliberately selected to maximise variation across domains. This purposive selection increases analytical depth, but limits generalisability. External validation outside the Dutch context or across other forms of social conflict therefore requires caution.

The nature of the data used also limits interpretation. The research employs qualitative observation and pattern matching rather than experimental manipulation. Controlled experiments are, moreover, largely infeasible in a politically charged public-administration context, in which multicausality can never be excluded. The relationships identified are therefore plausible, but not causally proven. The findings should be interpreted as indications of mechanisms that recur consistently, rather than as statistical regularities. Longitudinal and comparative research—tracking policy dynamics over longer periods and across different countries—is required to substantiate the patterns described here further.

The framework of ten biological constraints appears conceptually robust, but requires further refinement. Four constraints—status, territory, group formation, and parental investment—emerged structurally, whereas others, such as reciprocity, feedback, and trust, were less visible. This difference need not indicate irrelevance, but may reflect contextual dependence or limitations in operationalisation. Future research could quantify and test this hierarchy of empirical visibility in policy fields in which other constraints are likely to play a stronger role, such as climate policy, healthcare, or technological innovation.

The #MeToo case also demonstrates that empirically relevant explanatory variables may emerge outside the formal framework of ten constraints. Sex-related differences in the communication of interpersonal boundaries were not treated as an eleventh biological constraint, but proved relevant to understanding the interaction between perceptual asymmetry, evidential standards, and organisational procedures. Future research should therefore examine more systematically how additional explanatory variables relate to the formal framework, and under what conditions their inclusion increases explanatory value without diluting the conceptual coherence of the model.

A second direction for research concerns the temporality of biological mechanisms. Some constraints influence behaviour immediately, whereas others operate through long-term institutional adaptation. Longitudinal research may clarify how shifts in norms and institutional evolution relate to one another.

A third direction concerns the cross-cultural dimension. The six cases examined are nationally embedded, and their generalisability depends partly on cultural context. Comparative studies involving non-WEIRD populations could establish whether the same mechanisms operate universally or are mediated by culture.

In summary, this research makes it plausible that biological constraints constitute an integrating factor within public administration, but further study is required to determine their scope, causal significance, and mutual interaction more precisely. The findings presented here therefore do not constitute an endpoint, but a substantiated contribution towards a more realistic approach to public administration that explicitly incorporates the constraints of human behaviour into its analysis.

10.7 Concluding Remarks

This chapter brings the epistemic argument of the dissertation to a close. The synthesis developed here provides a scholarly answer to the central research question and demonstrates that biological constraints function as structural conditions under which policy may succeed or fail. The theoretical and empirical justification is thereby complete.

Chapter 11 does not extend this body of knowledge, but translates it into practical terms. Whereas the preceding chapters explained why policy frequently encounters evolutionarily shaped behavioural tendencies, the final chapter focuses on how policymakers can respond to those insights. It examines how governing strategies may become more effective by taking account of the biological limits of human motivation and cooperation.

Chapter 11: Practical Guide for Policymakers

11.1 When Policy Encounters Invisible Forces

Policymakers recognise the pattern: a proposal is legally sound, economically substantiated, and politically supported, yet still encounters unexpected resistance. Policies on executive remuneration lead to innovative avoidance strategies despite bonus caps. Educational reforms provoke parental opposition that extends beyond economic arguments. Urban renewal prompts residents to leave even as local amenities improve.

Such resistance follows patterns that traditional policy analysis does not fully explain. People respond more strongly to a relative loss of status than to an absolute decline in prosperity. Parents make disproportionate sacrifices as soon as they perceive their children's position to be under threat. Residents leave familiar neighbourhoods when their composition changes, even where objective conditions improve.

Such responses point to evolutionary-biological mechanisms that systematically affect policy processes. These mechanisms are neither good nor bad; they are simply part of human behaviour and help determine whether policy succeeds or fails.

11.2 The EBR Scan: Five Core Questions

The Evolutionary-Biological Robustness scan of policy—the EBR scan—helps policymakers identify at an early stage where evolutionary-biological tensions may arise. The scan consists of five core questions that can be asked during the initial phase of policymaking. These five questions indicate where more extensive analysis through the EBR assessment is required:

(1) The status question: Does this proposal alter who gains or loses social recognition? People respond more strongly to changes in relative position than to changes in absolute prosperity. A measure may be economically neutral but nevertheless provoke intense reactions when it shifts status relations.

(2) The territoriality question: Does the policy require people to share space or resources with groups they perceive as unfamiliar? Territorial attachment develops rapidly and disappears slowly. People form emotional bonds with particular places and communities that may impede policy change.

(3) The group-boundaries question: Does the intervention alter existing loyalties or require cooperation between groups that distrust one another? People spontaneously form coalitions that may support or undermine policy implementation, depending on how group boundaries are affected.

(4) The intergenerational question: Does the policy affect the future prospects of children and families? Parental protectiveness activates some of the strongest emotional responses and may outweigh rational considerations.

(5) The reproductive-strategies question: Does the policy affect differing preferences and priorities between the sexes, life stages, or partner dynamics? Evolutionarily shaped differences in risk perception, time horizons, and investment strategies may generate unexpected resistance when policy disregards them.

11.3 The EBR Assessment: Systematic Examination

When the scan indicates that evolutionary-biological mechanisms may be relevant, the EBR assessment provides a systematic method for evaluating policy proposals against ten biological constraints. The assessment does not operate as a checklist, but as a reflective instrument that facilitates deliberate choices.

It consists of ten clusters of questions corresponding to the principal evolutionary-biological mechanisms. For each constraint, policymakers assess whether the proposed policy is compatible with the mechanism, conflicts with it, or can make constructive use of it. The objective is not to avoid all biological tension—political objectives may sometimes outweigh such considerations—but to make conscious decisions about where tension is acceptable.

The EBR assessment also identifies opportunities to channel biological mechanisms constructively. Competitive motivation may be directed towards socially valuable objectives. Group loyalty may be used to support broader cooperation. Status sensitivity may be accommodated through alternative forms of recognition.

11.4 The Ten Commandments for Public Administration

The Ten Commandments summarise the principal biological constraints that emerged from the case analyses. They serve as a mnemonic when applying the EBR assessment.

First commandment: Thou shalt not design policy that exceeds the carrying capacity of communities. Societies have biological limits relating to population density, living space, and public services. When these limits are exceeded, instinctive resistance arises.

Second commandment: Thou shalt channel competition, not attempt to abolish it. People naturally compete for recognition and resources. Directing this energy towards socially valuable objectives prevents competition from becoming destructive.

Third commandment: Thou shalt respect reproductive strategies and partner dynamics without legitimising inequality. Evolutionarily shaped differences between the sexes in preferences, risk perception, and investment strategies are empirically observable. Ignoring them generates resistance; acknowledging them need not justify unequal treatment.

*Fourth commandment: Thou shalt respect territorial attachment***.** People develop emotional bonds with particular places and communities. Policy that abruptly disrupts these attachments provokes defensive responses.

Fifth commandment: Thou shalt never underestimate status sensitivity. People respond more strongly to a loss of relative position than to objective progress. Policy that disregards this sensitivity provokes powerful counterforces.

Sixth commandment: Thou shalt take fairness and reciprocity as thy standard. Perceptions of justice are deeply rooted. When burdens are perceived as unfairly distributed, resistance follows irrespective of the underlying figures.

Seventh commandment: Thou shalt respect parental investment and intergenerational interests. Resistance is most intense when policy appears to threaten children or the future prospects of families.

Eighth commandment: Thou shalt value diversity and respect natural patterns of distribution. Policy that imposes uniformity destroys natural mechanisms of adoption and protective variation.

Ninth commandment: Thou shalt accommodate different life stages. People have different priorities and capacities at different stages of life. Disregarding these differences creates intergenerational tensions.

Tenth commandment: Thou shalt recognise group formation as natural and channel it constructively. People will always form coalitions. Policy that directs group identity towards shared objectives can generate substantial collective strength.

11.5 Practical Review Questions for Each Mechanism

The Ten Commandments can be translated into concrete review questions that policymakers may use when evaluating proposals. These questions are not intended as a compulsory checklist, but as an aid to reflection.

(1) Carrying-capacity mechanisms: How many people are confronted with change simultaneously? Are there indications of overload, such as increasing complaints, relocation to other neighbourhoods, or a decline in the quality of public amenities and services? Can the changes be implemented in phases? The migration cases showed that rapid demographic change may activate resistance irrespective of the adequacy of available resources.

(2) Competition mechanisms: Where does competitive energy go when traditional channels are blocked? Are there alternative arenas in which people can earn recognition? Do new hierarchies emerge to replace the old ones? The executive-remuneration case showed how managers shifted towards alternative forms of compensation when bonus caps were introduced.

(3) Reproductive strategies and mate choice: Does the policy take account of differing patterns of time investment between the sexes? Are caring responsibilities adequately addressed? Does the policy recognise differing preferences concerning risk and security? The gender-pay-gap analysis illustrated how gender-neutral policy unintentionally produced different outcomes because biological differences in labour-market behaviour were disregarded.

(4) Territoriality mechanisms: Which spaces or resources will be shared by groups that were previously separate? How rapidly will integration occur, and is sufficient time allowed for adaptation? Will familiar places, traditions, and social connections remain intact during the transition? Urban-renewal projects were more successful when markers of identity were preserved.

(5) Status mechanisms: Who loses relative position, and how visible is that loss? Are compensatory forms of recognition possible? How will appreciation be communicated to different groups? The executive-remuneration case showed how negative media coverage and social disapproval intensified perceived status loss, even where the financial impact remained limited.

(6) Reciprocity mechanisms: Are the burdens and benefits perceived as proportionate by all those involved? Is the decision-making process transparent and inclusive? Are remedial measures available in response to perceived injustice? Tax policy received greater support when spending objectives were communicated explicitly.

(7) Intergenerational mechanisms: How does the policy affect children's future prospects? What concerns do parents have, and how are those concerns addressed? Are safeguards in place to ensure that

children's interests remain central? Educational reforms frequently failed because parental concerns were minimised rather than taken seriously.

(8) Frequency dependence and environmental variability: Does the policy take account of network effects and the critical mass required for behavioural adoption? Is strategic support available for early adopters? Has the balance between diversity and specialisation been considered adequately? Has sufficient time been reserved to accommodate possible adaptation? The executive-remuneration case showed how new practices spread slowly through the sector: a small number of organisations experimented first, after which others gradually followed until the new norm became widely accepted.

(9) Life-history strategies: Are the priorities associated with different life stages addressed? Is there an appropriate balance between short- and long-term interests? Does the policy accommodate changing capacities and responsibilities? The gender-pay-gap analysis illustrated how policies that disregarded life-stage differences systematically disadvantaged particular groups.

(10) Coalition formation: Is group formation recognised as a natural process? Are mechanisms available for constructive intergroup dialogue? Does the policy channel group loyalty towards shared objectives? The executive-remuneration case showed how remuneration committees displayed coalition behaviour that undermined traditional economic incentives.

11.6 Accommodation Strategies and Temporal Dimensions

When biological tension is identified, the question arises of how it can be accommodated without abandoning policy objectives. The cases provide examples of strategies that channel biological mechanisms rather than attempting to suppress them.

(1) Status accommodation may involve developing alternative forms of social recognition that can coexist alongside traditional hierarchies. Policy on executive remuneration may focus on sustainable value creation rather than exclusively on quantitative targets. Educational reform may recognise excellence across diverse domains. Avoiding public humiliation may also facilitate acceptance.

(2) Territorial accommodation operates through gradual integration that allows time for adaptation. Urban renewal may preserve characteristic elements such as historic buildings, neighbourhood centres, or cultural meeting places while improving facilities. The mixing of different groups of pupils within schools may take place gradually, for example by beginning with joint activities, progressing to shared lessons, and ultimately moving towards full integration, while monitoring how groups relate to one another and identifying potential tensions at an early stage.

(3) Group accommodation uses existing loyalties in support of broader objectives. The history of pillarisation in the Netherlands demonstrates how group identity and national cohesion can coexist. Experience with the polder model shows how conflicts of interest may be channelled through institutional arrangements.

Time plays a crucial role in biological adaptation. Individual habituation may occur within months, changes in group norms take years, and institutional integration may require decades. Policy that disregards these temporal differences increases the likelihood of failure by creating unrealistic expectations concerning the speed of change.

11.7 Limitations and Ethical Considerations

The EBR approach has inherent limitations that require explicit acknowledgement. Biological mechanisms explain a significant proportion of the variation in policy outcomes, but they are not the only determinants. Economic circumstances, legal frameworks, and cultural values remain substantial factors.

More importantly, biological constraints are descriptive rather than prescriptive. The fact that people are sensitive to status differences does not legitimise status inequality. Territorial attachment does not justify segregation. Group loyalty does not sanction discrimination. EBR analysis helps explain why particular forms of policy encounter resistance, but political choices remain normative in nature. Social objectives may sometimes be sufficiently important to justify accepting biological tension. The analysis merely makes such trade-offs more conscious and realistic.

11.8 Dutch Traditions as a Foundation

Dutch administrative culture provides a fertile context for evolutionary-biologically informed policy analysis. The polder model reflects an implicit recognition of coalition psychology and status management. The history of pillarisation (Dutch: 'verzuiling') demonstrates how group loyalties can be channelled towards national cohesion. Practices of official tolerance illustrate the pragmatic accommodation of biological realities within formal frameworks.

These traditions show that EBR does not represent a break with the Dutch administrative style, but rather makes explicit what already occurs implicitly. The challenge lies in systematically translating these experiences into usable instruments for contemporary policy practice.

11.9 From Insight to Application

The analyses in this research make clear that evolutionary-biological constraints constitute a significant but frequently underestimated factor in administrative effectiveness. By incorporating them systematically through the EBR scan and EBR assessment, policy becomes not only legally and economically sound, but also more socially robust.

For policymakers, the practical challenge is to begin on a small scale, scan consistently, assess systematically, and gradually develop expertise. This requires no ideological change of direction, but does require a willingness to employ an additional analytical lens alongside existing approaches—one that takes account of fundamental aspects of human nature. The result is policy that is not only rationally designed, but also capable of withstanding the recalcitrant reality of evolutionarily shaped behavioural mechanisms that have influenced human coexistence for thousands of years.

References (Excluding Case Studies)

The references included in this overview relate exclusively to the main text of this dissertation. A separate reference list has been compiled for each case study in Chapters 7, 8, and 9.

Academic literature:

1. Anderson, C., Hildreth, J. A. D., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. Psychological Bulletin, 141(3), 574–601.
2. Barkan, E. (1992). The retreat of scientific racism: Changing concepts of race in Britain and the United States between the world wars. Cambridge University Press.
3. Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. American Economic Review, 94(4), 991–1013.
4. Blom, J. C. H., & Lamberts, E. (1999). History of the Low Countries. Berghahn Books.
5. Blossfeld, H. P., & Shavit, Y. (2011). Persistent inequality: Changing educational attainment in thirteen countries. Westview Press.
6. Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), Handbook of Theory and Research for the Sociology of Education (pp. 241–258). Greenwood.
7. Bowlby, J. (1988). A secure base: Parent-child attachment and healthy human development. Basic Books.
8. Boyd, R., & Richerson, P. J. (2005). The origin and evolution of cultures. Oxford University Press.
9. Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. Behavioral and Brain Sciences, 12(1), 1–49.
10. Buss, D. M. (2019). Evolutionary psychology: The new science of the mind (6e ed.). Routledge.
11. Cialdini, R. B., & Trost, M. R**.** (1998). Social influence: Social norms, conformity, and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 151–192). McGraw-Hill.
12. Cosmides, L., & Tooby, J. (2013). Evolutionary psychology: New perspectives on cognition and motivation. Annual Review of Psychology, 64, 201–229.
13. Crosby, F. J., Iyer, A., Clayton, S., & Downing, R. A. (2003). Affirmative action: Psychological data and the policy debates. American Psychologist, 58(2), 93–115.
14. Damasio, A. R**.** (1994). *Descartes' error: Emotion, reason, and the human brain*. Putnam.
15. De Waal, F. B. M. (2019). Mama's last hug: Animal emotions and what they tell us about ourselves. Norton & Company.
16. Durkheim, E. (1995). The elementary forms of religious life. Free Press. (Oorspronkelijk werk gepubliceerd in 1912)
17. Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. Nature, 415(6868), 137–140.
18. Fishbein, M., & Ajzen, I. (2010). Predicting and changing behavior: The reasoned action approach. Psychology Press.
19. Flyvbjerg, B. (2001). Making Social Science Matter. Cambridge University Press.
20. Frank, R. H. (1985). *Choosing the right pond: Human behavior and the quest for status*. Oxford University Press .
21. Geary, D. C. (2005). The origin of mind: Evolution of brain, cognition, and general intelligence. American Psychological Association.
22. Geertz, C. (1983). Local knowledge: Further essays in interpretive anthropology. Basic Books.

23. Haidt, J. (2012). The righteous mind: Why good people are divided by politics and religion. Pantheon Books.
24. Hamilton, W. D. (1964). The genetical evolution of social behaviour. Journal of Theoretical Biology, 7(1), 1–16.
25. Haidt, J. (2012). The righteous mind: Why good people are divided by politics and religion. Vintage
26. Hardin, G. (1968). The tragedy of the commons. Science, 162(3859), 1243–1248.
27. Henrich, J. (2016). The secret of our success: How culture is driving human evolution, domesticating our species, and making us smarter. Princeton University Press.
28. Henrich, J. (2020). The WEIRDest people in the world: How the West became psychologically peculiar and particularly prosperous. Farrar, Straus and Giroux.
29. Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? Behavioral and Brain Sciences, 33(2-3), 61–135.
30. Hibbing, J. R., Smith, K. B., & Alford, J. R. (2013). Predisposed: Liberals, conservatives, and the biology of political differences. Routledge.
31. Hrdy, S. B. (2009). *Mothers and others: The evolutionary origins of mutual understanding.* Harvard University Press.
32. Hume, D. (2000). A treatise of human nature. Oxford University Press. (Oorspronkelijk werk gepubliceerd in 1740)
33. Inglehart, R. (1997). Modernization and postmodernization: Cultural, economic, and political change in 43 societies. Princeton University Press.
34. Inglehart, R., & Welzel, C. (2005). Modernization, cultural change, and democracy: The human development sequence. Cambridge University Press.
35. Israel, J. I. (1995). The Dutch Republic: Its rise, greatness, and fall, 1477–1806. Clarendon Press.
36. Kahneman, D. (2011). Thinking, fast and slow. Farrar, Straus and Giroux.
37. LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. Simon & Schuster.
38. Mannheim, K. (1928). Das Problem der Generationen. Kölner Vierteljahrshefte für Soziologie, 7(2), 157–185.
39. March, J. G., & Olsen, J. P. (1989). Rediscovering institutions: The organizational basis of politics. Free Press.
40. Miles, M. B., & Huberman, A. M. (1994). Qualitative Data Analysis (2nd ed.). Sage
41. North, D. C. (1990). Institutions, institutional change and economic performance. Cambridge University Press.
42. Ostrom, E. (1990). Governing the commons. Cambridge University Press.
43. Ostrom, E. (2005). Understanding institutional diversity. Princeton University Press.
44. Parry, E., & Urwin, P. (2011). Generational differences in work values: A review of theory and evidence. International Journal of Management Reviews, 13(1), 79–96.
45. Pinker, S. (2002). The blank slate: The modern denial of human nature. Viking.
46. Pinker, S. (2011). The better angels of our nature: Why violence has declined. Viking.
47. Richerson, P. J., & Boyd, R. (2005). Not by genes alone: How culture transformed human evolution. University of Chicago Press.
48. Saez, E., & Zucman, G. (2019). *The triumph of injustice: How the rich dodge taxes and how to make them pay*. W. W. Norton & Company.
49. Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V**.** (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science, 18*(5), 429–434. https://doi.org/10.1111/j.1467-9280.2007.01917.x
50. Shefrin, H. M., & Thaler, R. H. (1988). The behavioral life-cycle hypothesis. *Journal of Political Economy, 96*(6), 1212–1245. https://doi.org/10.1086/261520
51. Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), The social psychology of intergroup relations (pp. 33–47). Brooks/Cole.
52. Thaler, R. (1999). Mental accounting matters. Journal of Behavioral Decision Making, 12(3), 183–206.

53. Thaler, R. H., & Sunstein, C. R. (2008). Nudge: Improving decisions about health, wealth, and happiness. Yale University Press.
54. Tomasello, M. (2019). Becoming human: A theory of ontogeny. Harvard University Press.
55. Trivers, R. L. (1971). The evolution of reciprocal altruism. Quarterly Review of Biology, 46(1), 35–57. T
56. Trivers, R. L. (1974). Parental investment and sexual selection. In B. Campbell (Ed.), Sexual selection and the descent of man (pp. 249–264). Aldine
57. Tyler, T. R. (2006). Why people obey the law. Princeton University Press.
58. Van de Werfhorst, H. G., & Mijs, J. J. B. (2010). Achievement inequality and the institutional structure of educational systems: A comparative perspective. Annual Review of Sociology, 36, 407–428.
59. Van Vugt, M., & Ahuja, A. (2010). Naturally selected: The evolutionary science of leadership. Harper Business.
60. Verplanken, B., & Wood, W. (2006). Interventions to break and create consumer habits. *Journal of Public Policy & Marketing, 25*(1), 90–103. https://doi.org/10.1509/jppm.25.1.90
61. Wilson, E. O. (2012). The social conquest of earth. Liveright Publishing.
62. Wood, W., & Neal, D. T. (2007). A new look at habits and the habit–goal interface. *Psychological Review, 114*(4), 843–863. https://doi.org/10.1037/0033-295X.114.4.843
63. Yin, R. K. (2018). Case Study Research and Applications (6th ed.). Sage.
64. Zucman, G. (2015). *The hidden wealth of nations: The scourge of tax havens*. University of Chicago Press.

Empirical and institutional sources:

65. Centraal Bureau voor de Statistiek. (2021). Onderwijsstatistieken naar socio-economische status. Den Haag: CBS.
66. Centraal Bureau voor de Statistiek. (2022). Arbeidsmarktstatistieken naar geslacht. Den Haag: CBS.
67. Centraal Bureau voor de Statistiek. (2022). Veiligheidsmonitor 2021. Den Haag: CBS.
68. Centraal Planbureau. (2016). Economische interventies in het onderwijs: effectiviteitsanalyse. Den Haag: CPB.
69. Centraal Planbureau. (2017). Kansengelijkheid in het onderwijs. Den Haag: CPB.
70. Centraal Planbureau. (2019). Evaluatie energiesubsidies en rebound-effecten. Den Haag: CPB.
71. Centraal Planbureau. (2020). Vermogensbelasting en kapitaalvlucht: evaluatierapport. Den Haag: CPB.
72. EU Agency for Fundamental Rights. (2019). Data on sexual harassment and violence against women in the EU. Wenen: FRA.
73. European Agency for Special Needs and Inclusive Education. (2019). European benchmarks in educational segregation. Brussel: EASNIE.
74. European Institute for Gender Equality. (2020). Gender equality index 2020. Vilnius: EIGE.
75. Eurostat. (2020). Migration statistics. Luxemburg: Eurostat.
76. Inspectie van het Onderwijs. (2019). De Staat van het Onderwijs 2019. Den Haag: Ministerie van OCW.
77. Inspectie van het Onderwijs. (2021). De Staat van het Onderwijs 2021. Den Haag: Ministerie van OCW.
78. Kamerstukken II 2016/17, 34 552, nr. 3. Memorie van Toelichting Belastingplan 2017. Den Haag: Tweede Kamer der Staten-Generaal.
79. Kamerstukken II 2019/20, 35 228, nr. 2. Integratienota 2020. Den Haag: Tweede Kamer der Staten-Generaal.
80. Kamerstukken II 2020/21, 35 570, nr. 5. Nota over de Staat van het Onderwijs. Den Haag: Tweede Kamer der Staten-Generaal.

81. Nederlands Instituut voor Sociale Onderzoek. (2021). Arbeidsmarktsegregatie tussen etnische groepen. Den Haag: NISO.
82. OECD. (2018). PISA 2018 Results: Excellence and equity in education. Parijs: OECD Publishing.
83. OECD. (2020). Education at a Glance 2020: OECD indicators. Parijs: OECD Publishing.
84. OECD. (2021). Education at a Glance 2021: OECD indicators. Parijs: OECD Publishing.
85. OECD. (2021). OECD Governance Indicators. Parijs: OECD Publishing.
86. ROA (Researchcentrum voor Onderwijs en Arbeidsmarkt). (2020). Onderwijs en arbeidsmarkt 2020. Maastricht: Universiteit Maastricht.
87. Sociaal en Cultureel Planbureau. (2018). Evaluatie kinderopvangtoeslag en arbeidsparticipatie. Den Haag: SCP.
88. Sociaal en Cultureel Planbureau. (2019). Sociale ongelijkheid in het onderwijs. Den Haag: SCP.
89. World Bank. (2022). Worldwide Governance Indicators dataset. Washington, DC: World Bank.

Reference Lists (Case Studies)

References for Case A (Chapter 7)

Executive Remuneration and Bonus Culture — Evolutionary Mechanisms in Social Hierarchy

- AFL-CIO. (2023). Executive paywatch: CEO-to-worker pay ratios. AFL-CIO.
- Bebchuk, L. A., & Fried, J. M. (2004). Pay without performance: The unfulfilled promise of executive compensation. Harvard University Press.
- Bizjak, J., Lemmon, M., & Naveen, L. (2008). Does the use of peer groups contribute to higher pay and less efficient compensation? Journal of Financial Economics, 90(2), 152-168.
- Economic Policy Institute. (2023). CEO compensation surged in 2022. Economic Policy Institute.
- Ertimur, Y., Ferri, F., & Oesch, D. (2013). Shareholder votes and proxy advisors: Evidence from say on pay. Journal of Accounting Research, 51(5), 951-996.
- European Banking Authority. (2016). Report on benchmarking of remuneration practices and high earners 2014. EBA.
- Financial Times. (2012). Shareholder spring: The revolt against executive pay. Financial Times.
- Frydman, C., & Jenter, D. (2010). CEO compensation. Annual Review of Financial Economics, 2, 75-102.
- High Pay Centre. (2023). FTSE 100 CEO pay in 2022. High Pay Centre.
- OECD. (2015). Board practices: Incentives and governing risks. OECD Publishing.
- Pew Research Center. (2023). Americans' views on executive compensation. Pew Research Center.
- TUC (Trades Union Congress). (2023). Executive pay and the gap between top earners and workers. TUC.
- Weisbach, M. S. (2006). Optimal executive compensation vs. managerial power: A review of Lucian Bebchuk and Jesse Fried's Pay Without Performance. Journal of Economic Literature, 45(2), 419-428.

References for Case B (Chapter 7)

Equality of Educational Opportunity in the Netherlands — Evolutionary-Biological Mechanisms in Meritocratic Selection

Dutch policy context:

- CBS. (2020). *Budgetonderzoek Nederlandse huishoudens: Uitgaven naar inkomensgroep.* Den Haag: Centraal Bureau voor de Statistiek.
- CBS. (2021). *Onderwijsdeelname naar achtergrondkenmerken 2019-2020.* Den Haag: Centraal Bureau voor de Statistiek.
- CPB. (2017). *Kansengelijkheid in het Nederlandse onderwijs: Beleidsevaluatie onderwijsachterstandenbeleid.* Den Haag: Centraal Planbureau.
- Driessen, G. (2013). *Het onderwijsvoorrangsbeleid: Een beleidsreconstructie.* Nijmegen: ITS Radboud Universiteit.
- Driessen, G. (2018). *Brede brugklassen in het Nederlandse voortgezet onderwijs: Evaluatie van flexibele groepering.* Nijmegen: ITS Radboud Universiteit.
- Dronkers, J. (2010). *Ruggengraat van ongelijkheid: Beroepsstatus als verklaring voor het belang van diploma's.* Amsterdam: Amsterdam University Press.
- Inspectie van het Onderwijs. (2021). *De staat van het onderwijs 2021.* Den Haag: Ministerie van OCW.
- Kemenade, J.A. van. (1981). *Onderwijs, emancipatie en democratisering in Nederland 1960-1980.* Amsterdam: Meulenhoff.
- Korpershoek, H. (2016). *Schooladvisering in het Nederlandse basisonderwijs: Objectiviteit en voorspelbaarheid.* Groningen: GION.
- Mulder, L. (2014). *Vijfentwintig jaar onderwijsvoorrangsbeleid: Ontwikkelingen in de periode 1985-2010.* Nijmegen: ITS Radboud Universiteit.
- ROA. (2020). *Onderwijsmobiliteit en arbeidsmarktperspectieven in Nederland.* Maastricht: Researchcentrum voor Onderwijs en Arbeidsmarkt.
- SCP. (2019). *Sociale ongelijkheid in het Nederlandse onderwijs: Stand van zaken en ontwikkelingen.* Den Haag: Sociaal en Cultureel Planbureau.

International comparison:

- OECD. (2021). *Education at a Glance 2021: OECD Indicators.* Paris: OECD Publishing. https://doi.org/10.1787/b35a14e5-en

Evolutionary and development psychology:

- Brown, D.E. (1991). *Human Universals.* New York: McGraw-Hill.
- Devine, P.G., Forscher, P.S., Austin, A.J., & Cox, W.T.L. (2012). Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of Experimental Social Psychology, 48*(6), 1267-1278.
- Erikson, E.H. (1950). *Childhood and Society.* New York: Norton.
- German National Educational Panel Study. (2018). *Parental and peer influence on educational outcomes.* Bamberg: Leibniz Institute for Educational Trajectories.
- Lareau, A. (2003). *Unequal Childhoods: Class, Race, and Family Life.* Berkeley: University of California Press.
- Lee, M., & Larson, R. (2000). The Korean 'examination hell': Long hours of studying, distress, and depression. *Journal of Youth and Adolescence, 29*(2), 249-271.

- Steinberg, L., & Monahan, K.C. (2007). Age differences in resistance to peer influence. *Developmental Psychology, 43*(6), 1531-1543.
- Trivers, R.L. (1974). Parent-offspring conflict. *American Zoologist, 14*(1), 249-264. https://doi.org/10.1093/icb/14.1.249

Specific References for Case A (Chapter 8)

Immigration and Social Cohesion — Territorial Mechanisms in Integration

- Allensbach Institut, (2022), *Einstellungen zur Integration in Deutschland*, Institut für Demoskopie Allensbach
- Andriessen, I,, Nievers, E,, Dagevos, J,, & Faulk, L, (2019), Discriminatiemonitor niet-westerse migranten op de arbeidsmarkt 2019, Sociaal en Cultureel Planbureau
- Bade, K, J, (2017), *Migration - Integration - Minderheiten: Neuere Entwicklungen in Deutschland*, Bundeszentrale für Politische Bildung
- Baromètre de la Cohésion Sociale, (2020), *Évolution de la cohésion sociale en France 2000-2020*, Centre d'Analyse Stratégique
- Biterman, D,, & Franzén, E, M, (2020), *Welfare-induced segregation in Swedish cities,* Urban Studies, 57(8), 1-18
- Bloemraad, I, (2020), Theorizing the power of citizenship as claims-making, Journal of Ethnic and Migration Studies, 46(4), 695-714
- Borevi, K, (2014), Multiculturalism and welfare state integration: Swedish model in transformation, Ethnicities, 14(6), 816-837
- Carens, J, H, (2013), *The ethics of immigration*, Oxford University Press
- CBS StatLine, (2022), *Bevolking naar migratieachtergrond,* Centraal Bureau voor de Statistiek
- Cosmides, L,, & Tooby, J, (2013), *Evolutionary psychology: New perspectives on cognition and motivation,* Annual Review of Psychology, 64, 201-229
- Cour des Comptes, (2018), *L'évaluation de la politique de la ville*, République Française
- Crul, M,, & Schneider, J, (2010), *Comparative integration context theory: Participation and belonging in new diverse European cities*, Ethnic and Racial Studies, 33(7), 1249-1268
- Ekonomifakta, (2021), *Kostnader för flyktingmottagande och integration*, Svenskt Näringsliv
- Entzinger, H, (2003), *The rise and fall of multiculturalism: The case of the Netherlands*, In C, Joppke & E, Morawska (Eds,), Toward assimilation and citizenship: Immigrants in liberal nation-states (pp, 59-86), Palgrave Macmillan
- Environics Research, (2022), *Focus Canada: Canadian public opinion about immigration and refugees*, Environics Institute
- Institut Montaigne, (2020), *Les français musulmans et l'intégration*, Institut Montaigne

- ISSP, (2020), *International Social Survey Programme: National Identity Module*, GESIS Data Archive
- Joppke, C, (2017), *Is multiculturalism dead? Crisis and persistence in the constitutional state*, Polity Press
- Kahneman, D,, & Tversky, A, (1984), *Choices, values, and frames*, American Psychologist, 39(4), 341-350
- Mucchielli, L, (2009), Autumn 2005: *A review of the most important riot in the history of French contemporary society*, Journal of Ethnic and Migration Studies, 35(5), 731-751
- Musterd, S,, & Ostendorf, W, (2013), *Urban segregation and the welfare state: Inequality and exclusion in western cities*, Routledge
- OESO, (2021), *Education at a Glance 2021: OECD Indicators*, OECD Publishing
- OESO, (2022), *International Migration Outlook 2022*, OECD Publishing
- Omgevingsverkenning Almere, (2017), *Maatschappelijke effecten van vluchtelingenopvang*, Gemeente Almere
- Petit, P,, Duguet, E,, L'Horty, Y,, Parquet, L,, & Sari, F, (2019), *Discriminations à l'embauche selon l'origine: Que nous apprend le testing?*, Revue Économique, 70(3), 399-418
- Sachverständigenrat für Integration, (2021), *Normalfall Diversität? Wie das Einwanderungsland Deutschland mit Vielfalt umgeht*, SVR,
- SCP, (2020), *Sociale samenhang en participatie in Nederland*, Sociaal en Cultureel Planbureau
- SOM Institute, (2022), *The National SOM Survey 2021*, University of Gothenburg
- Statistics Canada, (2021), *Immigration and ethnocultural diversity: Key results from the 2021 Census*, Government of Canada
- Swedish Integration Board, (2021), *Integration i Sverige 2000-2020: Utveckling och utmaningar*, Integrationsverket
- Tajfel, H,, & Turner, J, C, (1979), *An integrative theory of intergroup conflict*, In W, G, Austin & S, Worchel (Eds,), The social psychology of intergroup relations (pp, 33-47), Brooks/Cole
- Verkuyten, M,, & Mepham, K, (2021), *Tolerance and intolerance: Cultural meanings and discursive usage*, Culture & Psychology, 27(1), 172-186
- Verwey-Jonker Instituut, (2021), *Sociale netwerken van Turkse Nederlanders: Patronen en ontwikkelingen*, Verwey-Jonker Instituut

Specific References for Case B (Chapter 8)

Educational Segregation — Territorial Mechanisms in School Choice

- Aguilar, P,, Boterman, W, R,, & Musterd, S, (2020), *Adaptive management in education policy*: Lessons from Amsterdam, Journal of Urban Affairs, 42(3), 412-428
- Boterman, W, R, (2019), *The role of geography in school segregation in the free parental choice context of Dutch cities*, Urban Studies, 56(15), 3074-3094
- Boterman, W, R,, & Musterd, S, (2016), *Co-ethnic reproduction versus segregation avoidance at different spatial scales*, Journal of Housing and the Built Environment, 31(2), 305-328
- Burgess, S,, & Wilson, D, (2005), *Ethnic segregation in England's schools*, Transactions of the Institute of British Geographers, 30(1), 20-36
- Card, D,, Mas, A,, & Rothstein, J, (2008), *Tipping and the dynamics of segregation*, The Quarterly Journal of Economics, 123(1), 177-218
- CBS, (2020), *Bevolking naar migratieachtergrond*, Den Haag: Centraal Bureau voor de Statistiek
- Clotfelter, C, T, (2004), *After Brown: The rise and retreat of school desegregation*, Princeton University Press
- DUO, (2021), *Leerlingtelling primair onderwijs 2013-2021*, Dienst Uitvoering Onderwijs
- Farwick, A, (2012), Segregation and the city: *Theoretical approaches and empirical evidence from Germany*, In T, Maloutas & K, Fujita (Eds,), Residential segregation in comparative perspective (pp, 139-162), Ashgate
- Gaertner, S, L,, & Dovidio, J, F, (2000), *Reducing intergroup bias: The common ingroup identity model*, Psychology Press
- Gemeente Amsterdam, (2016), *Evaluatie gewogen loting basisonderwijs* 2012-2015, Dienst Onderwijs
- Gemeente Den Haag, (2015), *Monitor spreidingsbeleid primair onderwijs* 2010-2014, Afdeling Onderwijs
- Gemeente Rotterdam, (2022), *Effectevaluatie schoolfusies 2017-2021*, Gemeentelijk Platform Onderwijs
- Hou, F,, & Picot, G, (2004), *Visible minority neighbourhoods in Toronto, Montreal and Vancouver*, Canadian Social Trends, 72, 8-13
- Karsten, S,, Ledoux, G,, Roeleveld, J,, Felix, C,, & Elshof, D, (2006), *Choosing segregation or integration? The extent and effects of ethnic segregation in Dutch cities*, Education and Urban Society, 38(2), 228-247

- Schelling, T, C, (1971), *Dynamic models of segregation*, Journal of Mathematical Sociology, 1(2), 143-186

- SCP, (2020), *Attitudes toward ethnic diversity in education*, Sociaal en Cultureel Planbureau

- Sleegers, P,, Wassink, H,, Van Veen, K,, & Imants, J, (2015), *School leaders' problem framing: A sense-making approach to professional challenges*, Educational Management Administration & Leadership, 43(6), 1-16

- Tajfel, H,, & Turner, J, C, (1979), *An integrative theory of intergroup conflict*, In W, G, Austin & S, Worchel (Eds,), The social psychology of intergroup relations (pp, 33-47), Brooks/Cole

- Tan, J,, Gopinathan, S,, & Ho, W, K, (2008), *Education in Singapore: Taking stock, looking forward*, Cengage Learning Asia

- Trivers, R, (1972), *Parental investment and sexual selection*, In B, Campbell (Ed,), Sexual selection and the descent of man (pp, 136-179), Aldine

Specific References for Case A (Chapter 9)

The Gender Pay Gap in the Netherlands — Evolutionary-Biological Mechanisms and Reproductive Strategies

- Arnalds, Á., Eydal, G. B., & Gíslason, I. V. (2013). Equal rights to paid parental leave and caring fathers: The case of Iceland. Icelandic Review of Politics & Administration, 9(2), 323-344.
- AWVN (2024). Implementatie Loontransparantierichtlijn: Kosten en baten voor werkgevers. Utrecht: AWVN.
- Babcock, L., & Laschever, S. (2003). Women don't ask: Negotiation and the gender divide. Princeton University Press.
- Bertrand, M. (2011). New perspectives on gender. In O. Ashenfelter & D. Card (Eds.), Handbook of Labor Economics (Vol. 4B, pp. 1543-1590). North-Holland.
- Bertrand, M., Kamenica, E., & Pan, J. (2015). Gender identity and relative income within households. Quarterly Journal of Economics, 130(2), 571-614.
- Bezrukova, K., Spell, C. S., Perry, J. L., & Jehn, K. A. (2016). A meta-analytical integration of over 40 years of research on diversity training evaluation. Psychological Bulletin, 142(11), 1227-1274.
- Blau, F. D., & Kahn, L. M. (2017). The gender wage gap: Extent, trends, and explanations. Journal of Economic Literature, 55(3), 789-865.
- Boxer, C. F., Noonan, M. C., & Whelan, C. B. (2015). Measuring mate preferences: A replication and extension. Journal of Family Issues, 36(2), 163-187.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. Behavioral and Brain Sciences, 12(1), 1-49.
- Buunk, B. P., Dijkstra, P., Fetchenhauer, D., & Kenrick, D. T. (2002). Age and gender differences in mate selection criteria for various involvement levels. Personal Relationships, 9(3), 271-278.
- CBS (2024). Loonverschillen tussen mannen en vrouwen, 2024. Den Haag: Centraal Bureau voor de Statistiek.
- Chang, E. H., Milkman, K. L., Gromet, D. M., et al. (2019). The mixed effects of online diversity training. Proceedings of the National Academy of Sciences, 116(16), 7778-7783.
- Criado-Perez, C. (2019). Invisible women: Exposing data bias in a world designed for men. Chatto & Windus.
- Croson, R., & Gneezy, U. (2009). Gender differences in preferences. Journal of Economic Literature, 47(2), 448-474.
- Darwin, C. (1871). The descent of man, and selection in relation to sex. John Murray.
- Equality and Human Rights Commission (2020). Gender pay gap reporting: Analysis of 2019 data. London: EHRC.
- Falk, A., & Hermle, J. (2018). Relationship of gender differences in preferences to economic development and gender equality. Science, 362(6412), eaas9899.
- FNV (2024). Reactie op conceptwetsvoorstel implementatie Richtlijn loontransparantie. Amsterdam: FNV.
- Goldin, C. (2014). A grand gender convergence: Its last chapter. American Economic Review, 104(4), 1091-1119.
- Inspectie SZW (2024). Staat van de handhaving 2024. Den Haag: Ministerie van Sociale Zaken en Werkgelegenheid.
- Kamerstukken II (2025/26). Implementatie EU-richtlijn loontransparantie, 36 420, nr. 2.

- Leibbrandt, A., & List, J. A. (2015). Do women avoid salary negotiations? Evidence from a large-scale natural field experiment. Management Science, 61(9), 2016-2024.
- Moen, P., Kelly, E. L., & Lam, J. (2013). Healthy work revisited: Do changes in time strain predict well-being? Journal of Occupational Health Psychology, 18(2), 157-172.
- OECD (2023). Gender wage gap (indicator). Paris: OECD Publishing.
- ONS (2023). Gender pay gap in the UK: 2023. London: Office for National Statistics.
- Page, S. E. (2019). The diversity bonus: How great teams pay off in the knowledge economy. Princeton University Press.
- Rafnsdóttir, G. L., & Heijstra, T. M. (2013). Balancing work-family life in academia: The power of time. Gender, Work & Organization, 20(3), 283-296.
- SCP (2023). Emancipatiemonitor 2023. Den Haag: Sociaal en Cultureel Planbureau.
- SCP (2024). Arbeidsparticipatie en loopbaanontwikkeling van mannen en vrouwen. Den Haag: Sociaal en Cultureel Planbureau.
- SER (2022). Loonongelijkheid tussen mannen en vrouwen. Den Haag: Sociaal-Economische Raad.
- SER (2023). Flexibel werken en loopbaanperspectief. Den Haag: Sociaal-Economische Raad.
- Small, D. A., Gelfand, M., Babcock, L., & Gettman, H. (2007). Who goes to the bargaining table? The influence of gender and framing on the initiation of negotiation. Journal of Personality and Social Psychology, 93(4), 600-613.
- Statistics Iceland (2023). Equal pay certification: Implementation and outcomes 2018-2023. Reykjavik: Statistics Iceland.
- Statistics Iceland (2024). Gender wage gap statistics 2024. Reykjavik: Statistics Iceland.
- Stewart-Williams, S., & Thomas, A. G. (2013). The ape that thought it was a peacock: Does evolutionary psychology exaggerate human sex differences? Psychological Inquiry, 24(3), 137-168.
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), Sexual selection and the descent of man (pp. 136-179). Aldine.
- VSNU (2023). Evaluatie erkenning en waardering in de universitaire sector. Den Haag: Vereniging van Universiteiten.
- Women Inc. (2023). Structurele ongelijkheid op de Nederlandse arbeidsmarkt. Amsterdam: Women Inc.
- Adams, R. B., & Funk, P. (2012). Beyond the glass ceiling: Does gender matter? Management Science, 58(2), 219-235.
- Azmat, G., & Ferrer, R. (2017). Gender gaps in performance: Evidence from young lawyers. Journal of Political Economy, 125(5), 1306-1355.
- Bowles, H. R., Babcock, L., & Lai, L. (2007). Social incentives for gender differences in the propensity to initiate negotiations. Organizational Behavior and Human Decision Processes, 103(1), 84-103.
- Einarsdóttir, Þ., Heijstra, T. M., & Rafnsdóttir, G. L. (2018). Equal pay audits in Iceland. European Equality Law Review, 1, 23-35.
- Hauff, S., Guerci, M., & Gilardi, S. (2019). High performance work practices and organizational performance across societal cultures. Journal of International Management, 25(4), 100689.
- MKB-Nederland (2024). MKB-perspectief op loontransparantierichtlijn. Delft: MKB-Nederland.
- Nadella, S. (2017). Hit refresh: The quest to rediscover Microsoft's soul. Harper Business.
- Van der Lee, R., & Ellemers, N. (2015). Gender contributes to personal research funding success in The Netherlands. Proceedings of the National Academy of Sciences, 112(40), 12349-12353.
- Visser, J., & Hemerijck, A. (1997). A Dutch miracle: Job growth, welfare reform and corporatism in the Netherlands. Amsterdam University Press

References for Case B (Chapter 9)

The #MeToo Problem — Biological Mechanisms under Conditions of Power Asymmetry

- Abbey, A. (1982). Sex differences in attributions for friendly behavior: Do males misperceive females' friendliness? Journal of Personality and Social Psychology, 42(5), 830–838.
- Amnesty International Netherlands. (2021). Let's Talk About Yes. Amnesty Nederland.
- Brå (Swedish National Council for Crime Prevention). (2025). Application and consequences of the consent law.
- Buss, D. M. (2019). Evolutionary psychology: The new science of the mind (6e ed.). Routledge.
- Canadian Human Rights Commission (CHRC). (2021). Sexual harassment at work: Policy and procedures. CHRC.
- Canadian Women's Foundation. (2021). #MeToo in Canada: Progress and challenges. CWF.
- CBS. (2022). Seksuele intimidatie en agressie in Nederland. Centraal Bureau voor de Statistiek.
- College voor de Rechten van de Mens. (2023). Jaarverslag seksuele intimidatie. College voor de Rechten van de Mens.
- Employment and Social Development Canada. (2023). Workplace harassment and violence prevention regulations: Evaluation report. ESDC.
- EU Agency for Fundamental Rights. (2014). Violence against women: An EU-wide survey. FRA.
- Kenrick, D. T., & Griskevicius, V. (2013). The rational animal: How evolution made us smarter than we think. Basic Books.
- Ministère de la Justice. (2021). Lutte contre les violences sexuelles et sexistes: Bilan 2017-2021. Ministère de la Justice.
- MIPROF (Mission interministérielle pour la protection des femmes). (2024). Violences sexuelles au travail: État des lieux. MIPROF.
- Nederlandse Arbeidsinspectie. (2023). Evaluatie vertrouwenspersonen en seksuele intimidatie. Ministerie van Sociale Zaken en Werkgelegenheid.
- Onderzoekscommissie Van Rijn. (2023). Onderzoek grensoverschrijdend gedrag NOS Sport. NOS.
- SCP (Sociaal en Cultureel Planbureau). (2020). Seksuele intimidatie in Nederland: Ontwikkelingen en maatschappelijke context. SCP.
- SOM Institute (Society, Opinion, Media). (2020). Gender equality and sexual harassment in Sweden: The #MeToo aftermath. University of Gothenburg.
- Tannen, D. (1990). You just don't understand: Women and men in conversation. William Morrow.
- Van Doorne, M. (2023). The Voice of Holland: Onderzoek naar machtsmisbruik en seksuele intimidatie. ITV Studios Netherlands