

DEVELOPING AND OPERATIONALISING NATURAL
LANGUAGE PROCESSING SOLUTIONS FOR CHILD
SAFEGUARDING: A CRITICAL REVIEW OF
TECHNICAL POSSIBILITIES AND
ORGANISATIONAL REALITIES IN UK POLICING –
TITLE TO BE CONFIRMED!!!

**Theoretical Perspectives of
Advanced Professional Practice -
MOD006047**

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Abstract

Purpose: Lorem ipsum...

Method: Lorem ipsum...

Findings: Lorem ipsum...

Conclusion: Lorem ipsum...

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Acronyms

CSA Child Sexual Abuse. 4–6

NLP Natural Language Processing. 4–6

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Chapter 1

Introduction

1.1 Research context

This paper defines the research context before selecting the most appropriate methodology and strategy for the literature review which follows.

Empirical observations, supported by academic and grey literature, (Finkelhor et al., 2024; National Police Chiefs' Council, 2025) identify that reported instances of Child Sexual Abuse (CSA) are increasing, with resultant demand on policing outstripping proactive preventative capabilities.

The gap between demand and capability in both CSA and other operational areas of policing is acknowledged across the sector, generating political and organisational appetite for technological solutions, (National Police Chiefs' Council, 2026). Despite this appetite, evidence from both professional and academic sources identifies that policing is structurally complex and requires reform to better adopt technology, (Cooper, 2024), with cultural barriers further diminishing the successful use of technological solutions, (Thompson and Manning, 2021; Kassem and Erken, 2025).

These challenges are significant, yet they do not negate the potential of emerging technologies to address the identified capability gap. Advances in Natural Language Processing (NLP) technologies present an opportunity to deliver preventative safeguarding in the CSA context, acknowledging that the gap between technical possibility and operational deployment is not primarily technical but organisational.

This paper explores how to bridge this gap, drawing on four literature tracks to develop a conceptual framework capable of addressing the proposed research challenge: *How can natural language processing methods be developed and operationalised to identify precursors of contact sex offending against children, to enhance proactive safeguarding opportunities within the existing operational constraints of policing?*

This challenge consists of four thematic research areas:

1. What linguistic precursors of contact sex offending exist in offender-victim conversations?
2. Which NLP methods can be most effectively realised within policing infrastructure?
3. What implementation barriers exist within policing that may hinder NLP adoption?

4. What strategies can be developed to overcome those barriers?

1.2 Purpose and scope of the paper

This research is inherently interdisciplinary, positioned at the intersection of technical and organisational domains. Accordingly, a literature review will require a multi-track approach, with each track addressing a different aspect of the research challenge. The four tracks are as follows:

1. The first track explores the landscape of CSA and the linguistic characteristics which precede contact offending, establishing the empirical foundation for a technical solution.
2. The second track reviews the technical literature on NLP applications in safeguarding and criminal justice contexts, focusing on grooming language detection and the computational methods available for identifying linguistic precursors of contact offending.
3. The third track examines the organisational dynamics of technology adoption in policing, drawing on both academic literature and empirical evidence of structural and cultural barriers to technical innovation.
4. The fourth track addresses the ethical and governance boundaries within which any NLP solution must operate, encompassing algorithmic bias, data protection, proportionality, and the ethical context surrounding preventative safeguarding.

Each track is explored in depth, and their insights are then synthesised to identify where technical possibilities meet organisational realities. This structure enables a comprehensive understanding of both the capabilities and constraints shaping both the research problem and the practice improvement opportunity and grounding any solution in organisational and ethical realities

Chapter 2

Literature Search Strategy and Methodology

2.1 Review Methodology and Rationale

This literature review adopts a systematic integrative approach. Snyder (2019) documents a number of review types, noting that an integrative review seeks to combine multiple perspectives, synthesise those views and to develop a new framework or perspective.

The interdisciplinary nature of this research noted in section 1.2 necessitates a review methodology that can accommodate multiple perspectives and evidence types. An integrative design as defined by Torraco (2016) and Torraco (2005) allows for a review and synthesis across domains, building a conceptual framework which seeks to unify the disparate domains into a framework for operationalising an NLP solution into a safeguarding CSA context.

A systematic approach is layered into this integrative approach to allow for a targeted and transparent search and selection process in reviewing the evidence, ensuring that the review is both comprehensive and replicable. This systematic layer is particularly important given the breadth of this review, which spans technical, organisational and ethical domains, each with their own bodies of literature and evidence types. Whittemore and Knafl (2005) identifies that by adding a systematic approach to a integrative review, findings and subsequent synthesis across domains can lead to the delivery of evidence based practice improvements.

2.2 Search approach and databases

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2.3 Keywords and search terms

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2.4 Inclusion and exclusion criteria

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2.5 Results and filtering process

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Chapter 3

The Landscape of Child Sexual Exploitation and Policing's Response

3.1 Scale and trajectory of CSA

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3.2 The grooming to contact offending pathway

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3.3 Policing's reactive posture

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3.4 The case for technological intervention

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Chapter 4

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4.3 The data provenance problem

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4.4 What the technical literature leaves unanswered

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Chapter 5

Technology Adoption and Organisational Change in Policing

5.1 Policing as a technology consumer

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5.2 Tacit versus explicit knowledge cultures

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5.3 Theoretical frameworks for technology adoption

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5.4 Structural fragmentation as an implementation barrier

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Chapter 6

Synthesis: Where Technical Possibility Meets Organisational Reality

6.1 The convergence problem

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6.2 Inductive and deductive reasoning across the two tracks

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6.3 Towards a theoretical position

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Chapter 7

Conceptual Framework and Research Questions

7.1 Presenting the conceptual framework

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7.2 How the literature has shaped the framework

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7.3 Refined research aim and sub-questions

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Chapter 8

Conclusions

8.1 Summary of the argument

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8.2 Implications for professional practice

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8.3 Next steps

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Appendix A

Patch One - Upload and Feedback

Appendix B

Patch Two - Upload and Feedback

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