
BEHAVIOURAL INFERENCE, INVESTIGATIVE PROFILING, AND JUVENILE JUSTICE: METHODOLOGICAL UTILITY, EPISTEMIC LIMITS, AND LEGAL CONSTRAINTS

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ABSTRACT

Behavioural profiling occupies a contested position within investigative practice, situated between legitimate investigative inference and epistemically unsupported narrative construction. While investigators inevitably draw inferences from conduct, scene dynamics, and interaction patterns, the legitimacy of profiling depends on whether such reasoning remains subordinate to evidence rather than becoming an unacknowledged substitute for proof. This research examines whether profiling retains any defensible place in investigations involving children and adolescents, where developmental instability, peer influence, emotional volatility, and situational escalation weaken the relationship between observed conduct and stable identity. Drawing upon profiling scholarship, investigative psychology, behavioural evidence analysis, developmental criminology, bias literature, and Indian legal materials, this paper distinguishes disciplined hypothesis generation from typological or personality-based attribution. It critically evaluates major profiling models while engaging key critiques concerning behavioural consistency, homology, non-falsifiability, and cognitive bias, with particular attention to how class bias, stereotype amplification, and moral panic can distort investigative inference in juvenile contexts. The study further situates profiling within the framework of the Bharatiya Sakshya Adhinyam, 2023 and the Juvenile Justice (Care and Protection of Children) Act, 2015, arguing that profiling lacks the transparency, verifiability, and adversarial testability required for evidentiary use, while dispositional labelling of children conflicts with child-centred and anti-stigma legal principles. The paper concludes that profiling survives only in a narrow and conditional form: as a provisional, bias-aware investigative aid, explicitly subordinate to independently established evidence and never a substitute for proof or identity attribution.

Keywords: Behavioural Profiling; Juvenile Justice; Investigative Inference; Cognitive Bias; Evidence Law

1. Foundational Framing

Profiling persists at the intersection of necessity and overreach. Investigators, as a matter of practice, cannot avoid drawing inferences from behaviour. Every reconstruction of events involves interpretation: why an act occurred, how it unfolded, and what it might suggest about the actor. The existence of behavioural inference is therefore not in dispute. The problem lies in its transformation, from a structured aid to investigation into an unacknowledged substitute for evidence.

Profiling becomes problematic not when it is used, but when its epistemic status is misunderstood. When behavioural inference is treated as indicative of identity, or when provisional hypotheses are treated as conclusions, the investigative process shifts from evidentiary reasoning to narrative construction. This shift is rarely explicit; it occurs incrementally, through the accumulation of interpretive assumptions that appear coherent but lack empirical grounding (Fox and Farrington, 2022; Petherick, 2020).

This problem intensifies in juvenile contexts. Adolescents do not exhibit behavioural stability comparable to adults. Their actions are shaped by developmental asymmetry, where cognitive capacity may permit reasoning, but psychosocial maturity, including impulse control and resistance to influence, remains underdeveloped. Behaviour is therefore less an expression of stable identity and more a product of immediate context, peer presence, and emotional state (Steinberg, 2009; Icenogle et al., 2019).

The risk, then, is not merely that profiling will produce error, but that it may produce systematic distortion. When investigators apply adult frameworks of consistency, planning, and disposition to juvenile behaviour, they impose interpretive structure where none reliably exists. Behaviour becomes over-interpreted, identity is inferred prematurely, and investigation may be directed along paths that reflect assumption rather than evidence.

This concern is not abstract. Even seemingly modest inferences, for instance, interpreting a coordinated group act as evidence of planning or hierarchy, may assist in structuring inquiry at an early stage, but become problematic the moment they are treated as indicators of stable roles, intent, or identity. The distinction between investigative direction and evidentiary conclusion is therefore both fragile and critical.

The central question is therefore narrowly framed: *can profiling be retained as a disciplined, behaviour-based method of hypothesis generation without collapsing into evidentiary substitution, particularly in juvenile contexts where behavioural inference is inherently unstable?*

2. Concept and Methods

(a) What does profiling mean in serious scholarly and investigative terms?

Profiling, in its defensible formulation, is not a method of identifying offenders, nor a system for deriving personality from behaviour. It is a structured inferential process that attempts to organise observable behavioural data into investigative hypotheses. Its function is heuristic rather than evidentiary (Petherick, 2020; Fox and Farrington, 2022).

The critical distinction is between interpretation and attribution. Profiling may interpret behaviour, identify patterns, distinguish between types of actions, or reconstruct sequences. It must not legitimately support attribution of identity, personality, or stable characteristics to an unknown actor. The moment profiling crosses from interpretation into attribution, it ceases to be methodologically defensible.

This distinction is often obscured by the language of profiling itself. Terms such as “*organised offender*” or “*risk-taking personality*” imply a degree of certainty that the underlying method cannot support. In scholarly work, such language is treated cautiously, if not rejected outright, precisely because it encourages inferential overreach (Kapardis, 2024; Vettor, 2012).

Profiling therefore operates within a constrained epistemic space. It does not answer the question, “*who did this?*”, but rather, “*what investigative directions are consistent with observed behaviour?*” Its outputs must be treated as provisional, contingent, and subject to continuous revision.

A narrow illustration clarifies the boundary. The observation that an offence reflects controlled sequencing or absence of overt disruption may assist investigators in considering access, familiarity, or situational ease. However, the same observation becomes methodologically unsound if it is used to infer a “methodical” or “disciplined” personality. The former structures inquiry; the latter attributes identity.

(b) What are the main methods or schools of profiling, and what are their principal criticisms?

Profiling methodologies reflect attempts to stabilise behavioural inference through structure, but each reveals the limits of that effort.

Typological profiling represents the earliest attempt at systematisation. It assumes that crime scene behaviour reflects underlying personality traits and that these traits can be categorised. The organised/disorganised dichotomy is the most well-known example. The problem with this approach is not merely empirical weakness, but conceptual circularity. Behaviour is used to define a category, and the category is then used to explain the behaviour. This produces the appearance of explanation without independent validation (Fox and Farrington, 2022).

Investigative psychology attempts to correct this by grounding inference in statistical analysis. Behavioural variables are analysed across datasets to identify correlations. This approach improves methodological transparency but introduces a different limitation: abstraction. Statistical patterns describe populations, not individuals. The translation of probabilistic associations into case-specific inference is inherently unstable. Moreover, such models cannot adequately account for the situational variability that shapes individual behaviour.

Behavioural Evidence Analysis (BEA) rejects both typological generalisation and statistical abstraction, focusing instead on case-specific reconstruction. It treats behaviour as context-dependent and resists the inference of personality. This approach is methodologically cautious but not immune to subjectivity. Interpretation remains analyst-dependent, and in the absence of external validation, conclusions may diverge (Petherick, 2020).

Across all methods, the central criticism remains consistent: they do not provide a reliable or verifiable mechanism for moving from behaviour to identity. This limitation is not merely technical, but structural. Refinement may improve clarity or consistency, but it cannot eliminate the inferential gap between observed behaviour and claims about the actor.

3. Legitimate Uses

(a) What can profiling legitimately do in an investigation?

Profiling can legitimately contribute to investigation only at the level of structured hypothesis

generation. Its primary value lies in organising behavioural data into coherent lines of inquiry. It may assist in distinguishing between different types of behaviour, instrumental versus expressive, planned versus opportunistic, and in identifying patterns that warrant further investigation (Pecino-Latorre et al., 2019; de Roo et al., 2022).

In complex cases, profiling can function as a tool of cognitive organisation. It allows investigators to manage uncertainty by structuring possible explanations. It may also assist in identifying inconsistencies in evidence, thereby directing attention to areas requiring further verification rather than supplying conclusions.

Profiling can contribute to victimology by situating the victim within a behavioural context, potentially clarifying the nature of the interaction between victim and offender. In multi-actor scenarios, it may assist in identifying differentiated roles based on observable behaviour, particularly where actions suggest variation in participation rather than uniform intent.

A limited illustration clarifies this role. In a group offence, observable differences in conduct, such as one participant initiating contact while others follow, may assist investigators in structuring inquiry into roles, sequence, and interaction. However, such distinctions remain investigative starting points. They cannot, without independent evidentiary support, justify conclusions about leadership, intent, or culpability.

These uses are legitimate precisely because they do not claim epistemic authority. Profiling, at its best, does not answer questions; it refines them. In this sense, its function aligns with the preliminary stages of investigation, where the objective is to generate and test possibilities rather than to establish proof.

At a legal level, this distinction is critical. Behavioural inference may inform investigative direction, but it does not, by itself, meet standards of evidentiary reliability or verifiability required for adjudicative use. Its legitimacy therefore depends on remaining subordinate to independently established evidence.

(b) What can profiling not legitimately claim to do?

Profiling must not be used to establish guilt, identify an offender, or reliably support inferences of stable personality traits. It should not predict future behaviour with sufficient consistency, nor should it serve as a substitute for evidence. These limitations are not contingent; they arise

from the structure of behavioural inference itself (Fox and Farrington, 2022).

The inability of profiling to produce proof is not a weakness of execution but a consequence of its epistemic position. Behavioural inference operates under conditions of uncertainty and should not be elevated to the level of evidentiary certainty without distortion. Any attempt to treat such inference as probative of identity or culpability risks collapsing the distinction between hypothesis and proof.

The most problematic claim associated with profiling is the inference of identity. The assumption that behaviour reveals who the offender is, rather than what occurred, is methodologically indefensible. At this point, profiling ceases to guide investigation and begins to construct narrative coherence in place of demonstrable fact.

This distinction also carries legal consequence. Where behavioural inference is treated as indicative of identity or guilt, it risks entering the evidentiary domain without satisfying basic requirements of testing, verification, and adversarial scrutiny. The result is not merely methodological error, but potential distortion of fair adjudication.

4. Limits and Critique

Profiling is constrained by a series of interrelated epistemic limitations. The assumption of behavioural consistency, that individuals exhibit stable patterns across contexts, is not supported in a sufficiently robust or generalisable manner by empirical research. Behaviour is shaped by situational variables, including opportunity, constraint, interaction, and environment, all of which may vary significantly across incidents (Petherick, 2020; Fox and Farrington, 2022).

The assumption of homology, that similar crimes reflect similar offenders, is equally problematic. Similar behavioural outcomes may arise from different motivations, capacities, and circumstances. Convergent behaviour does not imply convergent identity. The inferential link between behaviour and offender characteristics is therefore weak and should not be treated as reliably indicative.

A more fundamental limitation lies in the non-falsifiability of many profiling claims. Profiling often produces statements that are sufficiently broad, flexible, or context-sensitive that they resist meaningful testing. As a result, apparent accuracy may reflect interpretive elasticity

rather than empirical validity (Vettor, 2012). This creates the illusion of explanatory power while insulating the method from systematic evaluation.

Cognitive bias further compounds these limitations. Once a behavioural framework or provisional profile is constructed, subsequent interpretation of evidence may be unconsciously shaped to align with it. This introduces the risk of confirmation bias, where disconfirming evidence is minimised or reinterpreted, and confirmatory cues are selectively emphasised. Over time, this can develop into a cumulative distortion process, described in forensic literature as a bias cascade or snowball effect, where initial assumptions progressively influence multiple stages of analysis (Dror, 2025).

These limitations do not merely reduce the reliability of profiling; they define its permissible boundaries. Profiling may assist in structuring inquiry, but it should not be elevated into a method of identification or proof. Its constraints are structural rather than technical: refinement may improve clarity or discipline, but it cannot resolve the inferential gap between observed behaviour and claims about the actor.

5. Juvenile-Specific Risks

(a) Why are juvenile contexts especially vulnerable to profiling error?

Juvenile contexts amplify the limitations of profiling by destabilising the relationship between behaviour and identity. Adolescents exhibit developmental asymmetry, where cognitive reasoning may be present but behavioural regulation, impulse control, and resistance to external influence remain underdeveloped (Steinberg, 2009; Icenogle et al., 2019). Behaviour is therefore more variable, situationally responsive, and less indicative of enduring traits than in adult populations.

The key issue is not that juveniles behave unpredictably, but that their behaviour does not reliably indicate stable characteristics. Profiling, to the extent that it depends on such indications, becomes inherently unstable in this context.

The importation of adult interpretive frameworks further exacerbates this instability. Behaviour that may appear structured, coordinated, or purposive can be misread as evidence of planning, intent, or disposition, when in fact it reflects situational dynamics, imitation, or immediate social pressure. The result is not merely error, but patterned misinterpretation.

(b) What role do peer influence, developmental instability, emotional volatility, shame, audience effects, and group hierarchy play?

Juvenile behaviour is deeply social in its formation and expression. Peer presence has been shown to significantly alter decision-making, often increasing risk-taking and reducing individual restraint (Gifford-Smith et al., 2005). In group contexts, behaviour may be shaped less by individual inclination and more by relational dynamics, including hierarchy, imitation, and perceived expectations.

Audience effects are particularly significant. Behaviour may be performed for recognition, approval, or status, creating a disconnect between action and underlying intent. Acts that appear deliberate or expressive may, in fact, be situational performances rather than indicators of enduring motivation.

Emotional volatility further complicates interpretation. Adolescent behaviour is often influenced by transient affective states, including anger, embarrassment, or fear, which may not persist beyond the immediate context. Similarly, shame and status dynamics can produce exaggerated or performative conduct, particularly in peer-observed settings, where reputational concerns shape action.

A brief illustration clarifies the risk. In a group setting, a juvenile may engage in escalatory behaviour following provocation or peer encouragement. Observed in isolation, such behaviour may appear aggressive, intentional, or even leading. However, when situated within group dynamics, it may reflect momentary alignment with peer expectation rather than stable disposition or role.

Profiling, which presumes a stable relationship between behaviour and identity, cannot reliably accommodate these dynamics without distortion. The result is a heightened risk of over-interpretation, where situational conduct is misread as dispositional truth.

6. Bias and Stereotype**How do class bias, stereotype amplification, and moral panic distort investigative inference?**

Profiling is particularly susceptible to bias because it operates within an interpretive space

rather than a strictly evidentiary one. Initial assumptions, often tentative and implicit, can shape subsequent interpretation, producing a cumulative distortion process in which provisional hypotheses progressively harden into perceived facts. This dynamic has been described in forensic research as a bias cascade, where early-stage inferences influence later stages of analysis in ways that are not always consciously recognised (Dror, 2025).

Stereotype amplification introduces an additional and more structural layer of distortion. Behavioural interpretation may become entangled with social categorisation, such that class, neighbourhood, schooling, or family background function as implicit proxies for suspicion. In such cases, profiling ceases to operate as behavioural analysis and instead becomes a form of social attribution, where conclusions are shaped less by observed conduct and more by pre-existing assumptions about group characteristics (Quillian and Pager, 2010; Bavli, 2025).

This process is not necessarily overt. It often operates through subtle shifts in interpretive framing, for example, where identical conduct is read differently depending on the perceived social identity of the actor. The result is not only analytical distortion but also differential suspicion, where certain groups are more readily aligned with inferred risk.

Moral panic further intensifies these tendencies by introducing urgency and public pressure into the investigative process. Under such conditions, the demand for rapid explanation may incentivise reliance on coherent narratives over cautious analysis. Profiling, with its capacity to produce seemingly structured interpretations, becomes particularly vulnerable to overextension.

A brief illustration clarifies this interaction. Behaviour that is ambiguous in isolation, such as opportunistic or group-driven conduct, may, when combined with assumptions about neighbourhood or background, be interpreted as indicative of criminal disposition or organised intent. The inference appears coherent, but its foundation lies as much in social perception as in behavioural evidence.

In juvenile contexts, these distortions carry heightened consequences. They risk converting situational behaviour into perceived character, thereby entrenching stigma at an early stage. This not only misdirects investigation but also conflicts with the normative requirement that children be treated as developmentally distinct and capable of change. The result is a

convergence of methodological error and normative harm, where bias affects both accuracy and fairness.

7. Indian Law and Evidentiary Framework

How should profiling be situated within Indian law?

Under the Bharatiya Sakshya Adhiniyam, 2023, evidentiary material must satisfy foundational requirements of relevance, reliability, and verifiability within an adversarial framework. These requirements are not merely formal; they reflect the deeper logic of fair adjudication, where conclusions must be grounded in material capable of being tested, challenged, and independently assessed.

Behavioural profiling, in its standard form, does not satisfy these requirements. While it may be based on observable conduct, its inferential steps, particularly where they move beyond description into interpretation, are not reliably verifiable. The reasoning process is often dependent on analyst judgment, lacks standardised methodology, and cannot be meaningfully subjected to cross-examination in the way that testimonial or forensic evidence can. As a result, profiling does not possess the degree of transparency or testability required for evidentiary use.

The issue is not simply that profiling is imperfect, but that it operates at a different epistemic level. Evidence, within the meaning of the Act, must be capable of establishing or disproving facts in issue or relevant facts through demonstrable and contestable means. Profiling, by contrast, generates investigative hypotheses. When such hypotheses are introduced into adjudication without independent evidentiary support, the distinction between inference and proof collapses, undermining the integrity of the fact-finding process.

This concern becomes more acute when viewed through the lens of juvenile justice. The Juvenile Justice (Care and Protection of Children) Act, 2015 is premised on a child-centric and rehabilitative framework, which rejects the attribution of fixed criminal identity to children. Its normative structure is oriented toward reform, reintegration, and protection from stigma. Any investigative or evidentiary practice that assigns dispositional characteristics to a child, such as labelling behaviour as indicative of a “type” or “profile”, risks undermining these foundational principles.

Profiling, particularly when it moves from behaviour to character attribution, carries a high risk

of such dispositional labelling. This is not merely a methodological concern but a legal one. The premature construction of identity through behavioural inference may influence investigative direction, prosecutorial framing, and even judicial perception, thereby introducing prejudice into processes that are intended to remain child-sensitive and developmentally informed.

A narrow and defensible position therefore emerges. Behavioural inference may be used at the investigative stage as an internal and provisional tool to structure inquiry, provided it remains explicitly subordinate to evidence and subject to continuous verification. However, it should not be treated as probative material within the evidentiary record, nor relied upon to support conclusions regarding identity, guilt, or character.

In this framework, the role of profiling is strictly limited. It may assist investigation, but it may not enter adjudication except through independently established facts. Its legitimacy depends not on its explanatory appeal, but on the discipline with which its boundaries are maintained.

8. Final Synthesis

What disciplined model of juvenile profiling emerges from the literature?

The defensible model of profiling that emerges from the literature is one of strict and explicit limitation. Profiling may be retained only as a structured method of behavioural hypothesis generation, and only under conditions that preserve its subordinate and provisional character.

At a minimum, such use requires that behavioural inferences remain explicitly tentative, grounded in observable conduct rather than inferred personality, and continuously tested against independently established evidence. Any movement beyond these constraints, particularly toward attribution of identity, disposition, or stable traits, marks a departure from method into speculation.

In this formulation, profiling does not function as a means of knowing, but as a disciplined method of questioning. Its role is not to resolve uncertainty, but to organise it in a manner that permits systematic investigation. Its outputs are therefore contingent, revisable, and dependent on verification.

In juvenile contexts, these constraints must be applied with heightened stringency. Behaviour must be interpreted as situational rather than dispositional, shaped by developmental instability, peer dynamics, and transient emotional states. The threshold for inference must accordingly be higher, and the tolerance for interpretive extension significantly lower. What may appear as patterned or meaningful conduct in adult contexts should not be assumed to carry equivalent significance when the subject is a child or adolescent.

A narrow and defensible position therefore emerges. Profiling may assist investigation where it remains explicitly subordinate to evidence, methodologically transparent, and resistant to bias and stereotype. However, it should not be relied upon to establish identity, prove culpability, or support conclusions about character. Its legitimacy is conditional, not inherent.

The objective, therefore, is not to eliminate behavioural inference, an impossibility in investigative practice, but to discipline it. The central danger lies not in inference itself, but in its unacknowledged transformation into assumption. When properly constrained, profiling may contribute to investigative clarity. When unconstrained, it ceases to function as method and instead produces narrative coherence in place of evidentiary truth.

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