‘DIRTY SCIENCE AND MURKY LAW’

Research Seminar, University of Technology, Sydney,
18th December 2018

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Our research programme at SJRG

- **Our projects are investigating various threshold elements of safeguarding systems:**
  - Safer children? – The threshold for referrals from schools to Children’s Social Care (Vice Chancellor’s ECRG)
  - Rethinking child protection strategy – Deconstructing the underlying ideology of child abuse detection and prevention (ES/M000990/1)
  - The care cases crisis – Investigating why the numbers of children entering State care are going up when the ideology is designed for them to go down (JUS/43090)
  - The risk of risk – Assessing the viability and limits of the use of predictive algorithms and AI in child protection and safeguarding (ES/R00983X/1)

- **Drawing together the issues raised, we summarise them as showing:**
  - The ideology is flawed. It creates a self-perpetuating and self-justifying cycle rather than a clear rationale and workable solutions (Devine and Parker, 2015);
  - The use of technology is making the situation worse by increasing the number of false positives and false negatives;
  - A combination of these issues, conflation of Ss.17 and 47 Children Act 1989 in policy and in a mixed ‘Children’s Social Care’ budget causes additional problems (Devine, 2017).
The problem for safeguarding: fallibility of the ‘elegant theory’ of machine prediction & prevention of child abuse

An ‘elegant theory’: one that is economical and imaginative, and sometimes breathtakingly simple once explained, one that demonstrates an ontological simplicity. A deeper explanation might also note that the theory must also be plausible and reliable on testing.

Predictive systems used in social work to predict and prevent child abuse draw on germ theory to justify their approach: An elegant theory.

Historical analysis of the genus of germ theory in the UK’s child protection system dates to the late 1980s. Germ theory presents this seemingly elegant solution by drawing on medical ontology: if the source of a problem (disease) can be identified, isolated and eradicated then the problem ceases to exist. By analogy it is argued that if the problem is not isolated then the problem (disease) will spread. Applied to germs, this has saved lives and eradicated epidemics. Applied to child abuse the theory fails at each stage.

Thus the flawed ideological basis presents a theoretically elegant but flawed science of child abuse eradication: Child abuse is not analogous to a disease and cannot be eradicated by predicting (identifying the unhygienic germs), and removing children to stop the spread of disease (quarantining).
Idealised risk prediction

- Local authorities in the UK commission their own risk prediction systems from private, profit-making providers.
- There is no regulation or minimum standard. The ‘black box’ contents of the algorithms are commercially sensitive.
- What do commissioning managers think they are buying?

**Child Protection & Safeguarding**

**Idealised Screening and filtering system:**

- Positive Screen Result
- Negative Screen Result
- True Positive
- True Negative

This figure represents a perfect screening system.
- 100% efficient
- All interventions fully justified
- No adverse outcomes
- Appropriately targeted resources

Screening process

INTERVENTION
FILTERED OUT
An acceptable margin of error?

- We analysed the data from a 10,000 family predictive study in the UK.
- This study underpinned the risk prediction movement in ‘child rights’ based child protection systems.
- The overall prevalence of abuse in the overall population was 0.4%.
- The percentage of false positive predictions was 97.3%. Affects the whole population.
- The percentage of false negatives in the target population was 17.5%. Affects a percentage of children actually being abused.

### Kevin Browne - False Positive Predictions

<table>
<thead>
<tr>
<th>Derived from Figure 1 at p.71 of Browne et al</th>
<th>Browne et al analysis scaled to 2014 population (England)</th>
<th>Comments/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>10,000</td>
<td>11,500,000</td>
</tr>
<tr>
<td>Abuse rate (prevalence)</td>
<td>0.40%</td>
<td>0.40% using Browne et al rate</td>
</tr>
<tr>
<td>Number abused</td>
<td>40</td>
<td>46,000</td>
</tr>
<tr>
<td>Number not abused</td>
<td>9,960</td>
<td>11,454,000</td>
</tr>
<tr>
<td>Apply Browne et al checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>82% sensitivity - Correct Identification</td>
<td>33</td>
<td>37,720</td>
</tr>
<tr>
<td>(Number correctly predicted as abused)</td>
<td></td>
<td>c.f. 2014 CPP register number of 45,300</td>
</tr>
<tr>
<td>82% sensitivity - Missed identifications</td>
<td>7</td>
<td>8,280</td>
</tr>
<tr>
<td>(Number incorrectly predicted NOT abused)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>88% specificity - false alarms</td>
<td>1,195</td>
<td>1,374,480</td>
</tr>
<tr>
<td>(Number incorrectly predicted as abused)</td>
<td></td>
<td>c.f. 2014 number of referrals of 657,800</td>
</tr>
<tr>
<td>88% specificity - non-abusers identified</td>
<td>8,765</td>
<td>10,079,520</td>
</tr>
<tr>
<td>(Number predicted correctly NOT abused)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency of detection process</td>
<td>2.7%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Percentage of false positives</td>
<td>97.3%</td>
<td>97.3%</td>
</tr>
<tr>
<td>Population identified as likely abusers</td>
<td>1,228</td>
<td>1,412,200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c.f. actual 2014 referrals of 657,800</td>
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Child rights & family support models: A ‘framing difference’

Child Rights model

◦ A child rights-focussed system: defined by a legal and policy emphasis on the primacy of the rights of the child rather than focus on whole family function (Waldegrave, 2006, Devine 2015). Deviant family members are identified so the child can be protected from them.

◦ The rationale for the prominence of child rights follows recognition that children constitute a vulnerable group in society and thus need protection, a well-emphasised point in literature and in international law and policy (eg Fortin (3rd ed, 2012; United Nations Convention on the Rights of the Child (UNCRC), effective from 15th January 1992 in UK).

◦ Many jurisdictions thus adopt a child rights-focussed approach to legislation designed to protect children including the UK, Northern Europe, Australia, New Zealand, the US and Canada (Waldegrave, 2006; Gilbert, Parton and Skivenes, 2011; Devine, 2015).

Family Support model

◦ The family support model is adopted in most countries in Continental Europe.

◦ This model frames child welfare in the context of the family, arguing that family dysfunction is a complex, social problem treated with supportive interventions.

◦ The strength of this model is the prioritising of the child as a member of a family unit, and the holistic approach to addressing complex family problems.

◦ The weakness of this model is that in cases of serious and systematic child abuse a child can be left with a family who will not, or cannot address problems.
Constructing the ‘invisible family’

- We noted in all our project’s findings the negative impact on wellbeing, budgets and child abuse detection of a ‘safeguarding system’ where family support is argued to be delivered, albeit in the framework of a child rights focussed system.

- We identified an underlying 'theory of child protection' intended to protect and strengthen the status of children within the family, and we critique this model using social outcome and financial data.

- In conflating child rights with the ‘refocus’ post-1995 towards family support delivery within the child rights framework, our research found that the UK fails to achieve either effective child rights or family support.

- We found that giving child rights primacy results in a ‘rights pecking order’. The ‘family’ has become a fluid concept in legal decision making.

- Although there are legal rights relating to the family (Article 8 rights in the UK) and legislation to ensure all parties to an action are treated equally, courts have adhered to the primacy of child rights in its decision making (Herring, 1999; London Borough of Greenwich v EH and AA and A (Children) [2010] EWCC 61 (Fam)).

- The outcomes from this model are not encouraging. Our research identifies an underlying ideology underpinning the operationalisation of child protection and safeguarding systems that perpetuates a systemic problem:
The ‘theory of child protection circuit’

The ‘Truths’ Underpinning the Theory of Child Protection

1. There is a high prevalence of child abuse which can be defined and identified.

2. That the state has a duty to do so, and to take steps to protect a child once it has done so.

3. That in order to do so a system of risk prediction is possible with a sufficiently accurate confidence limit.

4. Following risk prediction timely early intervention is an appropriate welfare response to mitigate the risks of future abuse in families identified as high risk.

5. That failure to predict and mitigate serious cases of child abuse are investigated by public inquiries and SCIs, aiming to establish how to do the previous 1-4 ‘truths’ better because...
Combining dirty science and murky law

- The combination of the ‘dirty science’ and the ‘murky law’ results in population level predictions are applied to individuals identified as vulnerable.
- Where children are involved, ‘vulnerable’ is swiftly construed as ‘risky’.
- The ‘risky’ have a series of hurdles to overcome to demonstrate they are ‘safe’.
- Given the high error rate and inbuilt presumptions on the safeguarding side of the system, this is a problem that falls between the technology community and the legal community. Neither have responsibility for its resolution.
- Our work is focusing on the creation of a technologically and legally ethical system protocol, with a ‘dashboard’ monitoring system.
Unintended consequences: the ‘welfare/policing dichotomy

- Consequence is that abuse detection has fallen over 25 years from 24.1% to 7.4%
- Costs have dramatically increased
- The numbers of false positives has increased to 88% of referrals (families needlessly referred and potentially harmed) (Devine, 2017)
- The number of false negatives (serious and fatal child abuse) remains alarmingly high.

<table>
<thead>
<tr>
<th>Year (1 April to 31 March)</th>
<th>Ratio of referrals where Significant harm (or risk of) substantiated : Total number of referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( All abuse categories )</td>
</tr>
<tr>
<td>1991 - 1992</td>
<td>24.1%</td>
</tr>
<tr>
<td>2008 - 2009</td>
<td>6.2%</td>
</tr>
<tr>
<td>2013 - 2014</td>
<td>7.3%</td>
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In light of these issues, does (and should) statutory ‘safeguarding’ operate as a mechanism for addressing deviance, or a service-orientated, therapeutic response?