

# The Impossibility of Assessing the Risk of Terrorism

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THE UNIVERSITY OF  
MELBOURNE

Faculty of Medicine, Dentistry and Health Sciences  
Department of Psychiatry



MONASH University  
Medicine, Nursing and Health Sciences

# Post-Sentence Supervision and Detention of Terrorism Offenders in Australia

- *Commonwealth Criminal Code*

- Division 104: Control Orders

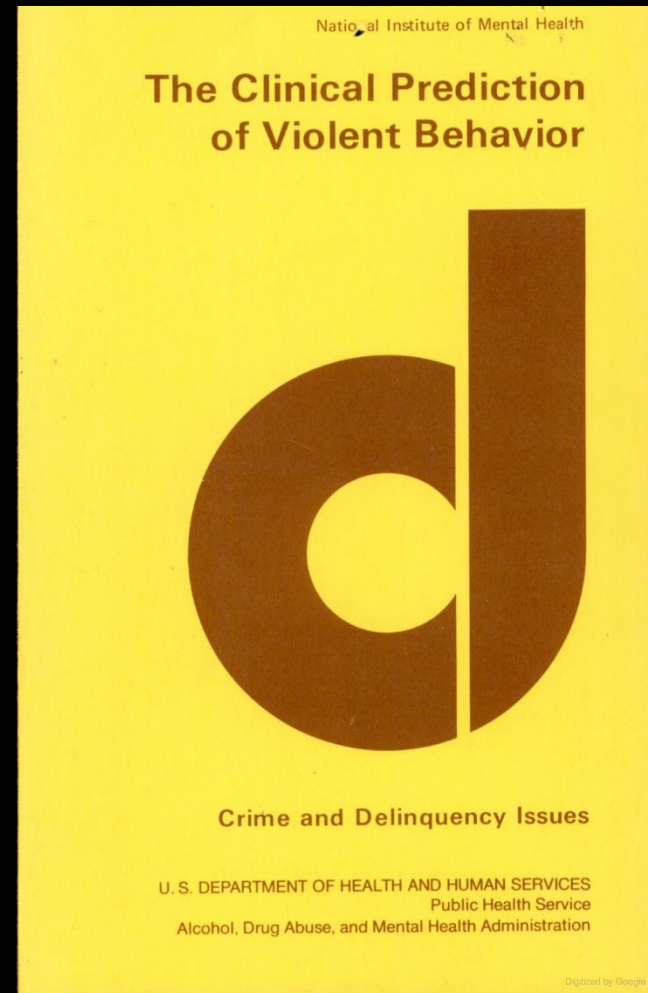
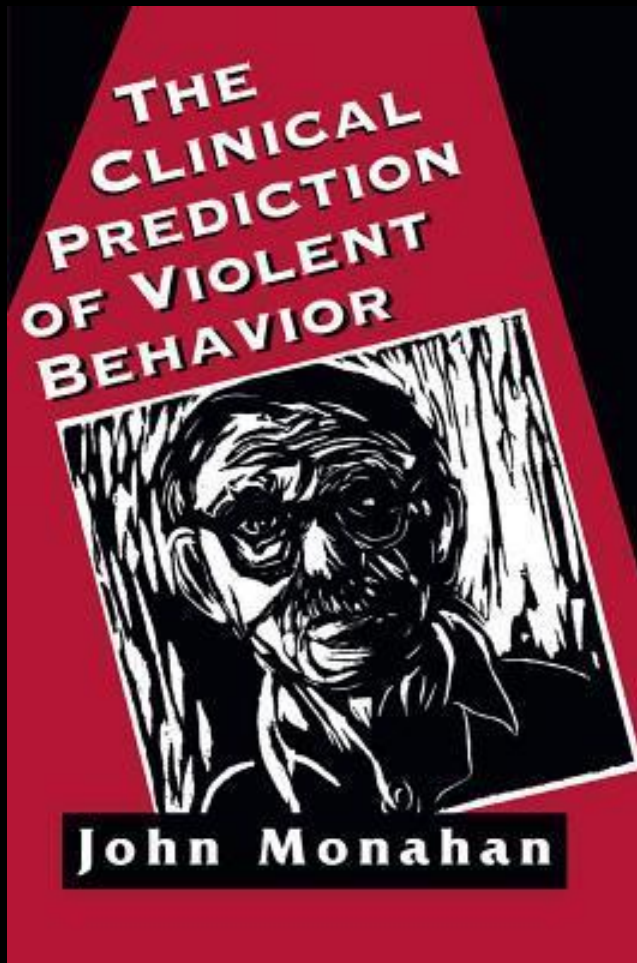
- Division 105A: Continuing Detention Orders

- 105A.7(a): “...the Court is satisfied to a high degree of probability, on the basis of admissible evidence, that the offender poses an unacceptable risk of committing a serious Part 5.3 offence if the offender is released into the community...”

# Terrorism Risk Assessment Tools

- All terrorism risk/threat assessment tools ostensibly follow the Structured Professional Judgment (SPJ) approach
  - Suggested by Monahan (2012)
- A number of tools have been developed
  - Violent Extremism Risk Assessment – Version 2 Revised (VERA-2R; Pressman et al., 2018)
  - Terrorist Radicalization Assessment Protocol (TRAP-18; Meloy, 2017)
    - Only instrument with published validation studies
  - Multi-Level Guidelines (MLG; Cook et al., 2013)

# The Modern Practice of Risk Assessment



# The Problem of Base Rates

(Monahan, 1981)

- “Perhaps the most common and surely the most significant error made by clinicians in predicting violent behavior is the ignoring of information regarding the statistical base rate of violence in the population in question”
- “... as the base rate differs substantially from 50 percent, clinical differentiation becomes progressively more difficult. If 90 percent of a group will be nonviolent, the best prediction in the individual case is to predict them all nonviolent. If another group has a base rate of 90 percent for violent behavior, the most accurate prediction would be to predict them all violent” (pp. 33-34)
- “it is clear that *knowledge of the appropriate base rate is the most important single piece of information necessary to make an accurate prediction*” (p. 34; italics in original).

# What is the Base Rate of Recidivism Amongst Terrorists?

- Scholarly literature is scant
- Hodwitz (2019)
  - 561 offenders convicted of terrorism-related offences in the USA
  - Average sentence length 12.9 years
  - 17-year follow-up period
    - 9 (1.6%) re-offended
      - 5 whilst still in prison: for attempted murder and attempting to radicalise others
  - 247 released to community
    - 4 re-offended (1.6%; none for further terrorism)

# What is the Base Rate of Recidivism Amongst Terrorists?

- Hodwitz (2019)
  - “The results reported here suggest that offenders convicted of terrorism-related crimes are unlikely to recidivate, and when they do, their offenses tend to be minor violations” (p. 62)

# What is the Base Rate of Recidivism Amongst Terrorists?

- Renard (2020)
  - Across the United Kingdom, Europe, and Asia
  - $K = 20$ ,  $N = 2961$ , 87 recidivists
  - Pooled Recidivism Rate: 2.9%
- Outlier studies sometimes cited:
  - Hasisi et al. (2020)
    - Study from Jerusalem!
    - 60.2% (recidivism in general)
    - But: Not all terrorists
  - Altier et al. (2019)
    - Re-engagement rate of 61%
    - Study of the autobiographies of 85 terrorists

Best Estimate  
Base Rate of  
Terrorism  
Recidivism:  
1.6% to 2.9%

# Hypothetical Violence Risk Tool with 75% Classification Accuracy and 40% Base Rate

Actual Outcome

Future Violence

No Future Violence

High Risk

**a**

(True Positives)

**b**

(False Positives)

Predicted  
Outcomes

Not High Risk

**c**

(False Negatives)

**d**

(True Negatives)

High Risk	<b>a</b> (True Positives)	<b>b</b> (False Positives)
Not High Risk	<b>c</b> (False Negatives)	<b>d</b> (True Negatives)

# Hypothetical Violence Risk Tool with 75% Classification Accuracy and 40% Base Rate

Actual Outcome

Future Violence

No Future Violence

Totals

High Risk

**300**

(True Positives)

**150**

(False Positives)

450

Predicted  
Outcomes

Not High Risk

**100**

(False Negatives)

**450**

(True Negatives)

550

Totals

400

600

1000

High Risk	<b>300</b> (True Positives)	<b>150</b> (False Positives)	450
Not High Risk	<b>100</b> (False Negatives)	<b>450</b> (True Negatives)	550
Totals	400	600	1000

# Hypothetical Violence Risk Tool with 75% Classification Accuracy and 40% Base Rate

- Proportion Correct: **75%**
  - $(a+d)/(a+b+c+d)$
- Positive Predictive Power (PPP): **66.67%**
  - $a/(a+b)$
- Negative Predictive Power (NPP): **81.8%**
  - $d/(c+d)$

# Hypothetical Terrorism Risk Tool with 75% Classification Accuracy and 1.6% (and 2.9%) Base Rate

Actual Outcome

Future Terrorism

No Future Terrorism

High Risk

**12 (22)**  
(True Positives)

Predicted  
Outcomes

Not High Risk

**4 (7)**  
(False Negatives)

Totals

16 (29)

1000

High Risk	<b>12 (22)</b> (True Positives)	
Not High Risk	<b>4 (7)</b> (False Negatives)	
Totals	16 (29)	1000

# Hypothetical Terrorism Risk Tool with 75% Classification Accuracy and 1.6% (and 2.9%) Base Rate

Actual Outcome

Future Terrorism

No Future Terrorism

Totals

High Risk

**12 (22)**  
(True Positives)

**246 (243)**  
(False Positives)

258 (265)

Predicted  
Outcomes

Not High Risk

**4 (7)**  
(False Negatives)

**738 (728)**  
(True Negatives)

742 (735)

Totals

16 (29)

984 (971)

1000

High Risk	<b>12 (22)</b> (True Positives)	<b>246 (243)</b> (False Positives)	258 (265)
Not High Risk	<b>4 (7)</b> (False Negatives)	<b>738 (728)</b> (True Negatives)	742 (735)
Totals	16 (29)	984 (971)	1000

# Hypothetical Terrorism Risk Tool with 75% Classification Accuracy and 1.6% (and 2.9%) Base Rate

- Proportion Correct: **75% (75%)**
  - $(a+d)/(a+b+c+d)$
- Positive Predictive Power (PPP): **4.65% (8.3%)**
  - $a/(a+b)$
- Negative Predictive Power (NPP): **99.46% (99.04%)**
  - $d/(c+d)$

# VERA-2R Anticipated Results with 60% sensitivity and 75% specificity and 1.6% (and 2.9%) Base Rate

## Actual Outcome

Future Terrorism

No Future Terrorism

Totals

High Risk

**10 (19)**  
(True Positives)

**246 (243)**  
(False Positives)

258 (265)

Predicted  
Outcomes

Not High Risk

**6 (10)**  
(False Negatives)

**738 (728)**  
(True Negatives)

742 (735)

Totals

16 (29)

984 (971)

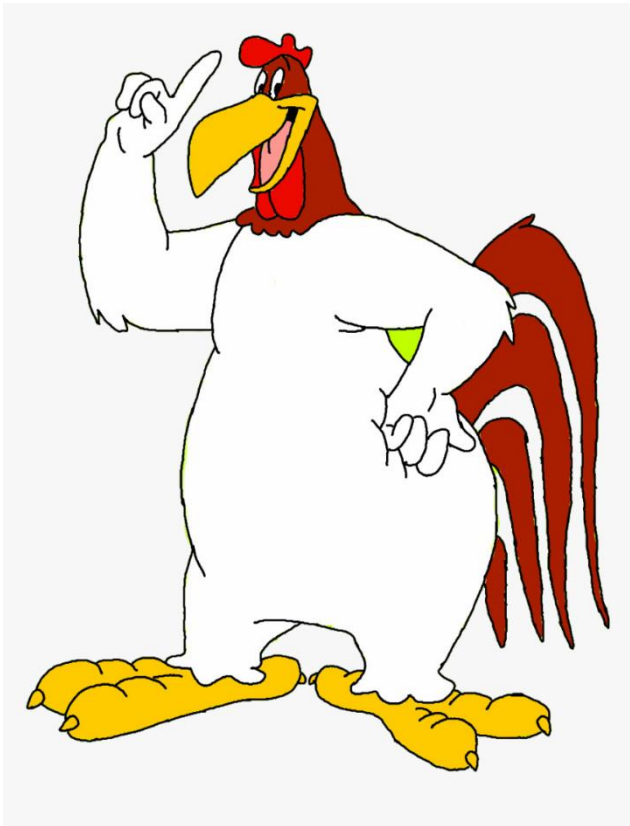
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High Risk	<b>10 (19)</b> (True Positives)	<b>246 (243)</b> (False Positives)	258 (265)
Not High Risk	<b>6 (10)</b> (False Negatives)	<b>738 (728)</b> (True Negatives)	742 (735)
Totals	16 (29)	984 (971)	1000

# VERA-2R Anticipated Results with 60% sensitivity and 75% specificity and 1.6% (and 2.9%) Base Rate

- Proportion Correct: **74.8% (74.7%)**
  - $(a+d)/(a+b+c+d)$
- Positive Predictive Power (PPP): **3.9% (7.26%)**
  - $a/(a+b)$
- Negative Predictive Power (NPP): **99.46% (99.04%)**
  - $d/(c+d)$

That's mathematics, son!  
You can argue with me,  
but you can't argue with figures!



- Foghorn Leghorn

# The Low Base Rate Problem

- The author of the TRAP-18 has been very upfront about this:
  - “it will never be a predictive measure of targeted violence risk due to the very low base rate of such behaviors, even in a population of concern” (Meloy et al., 2015, p. 147)
- ... and recently from the VERA-2R team:
  - “Predictive validity is problematic due to the low base rate of terrorists and violent extremists”  
(<https://www.vera-2r.nl/instrument/strenghts-and-limitations>) (sic)

# Further Problems When Using These Tools to Assess Recidivism

- Risk assessment tools are usually developed by identifying factors that differentiate recidivists from non-recidivists
- Extant terrorism risk/threat tools are developed by rationally identifying factors that differentiate terrorists from non-terrorists
  - Arguably useful for “hot-blooded” operational threat assessment
  - *Not useful for addressing Australian legislation*
    - We already know that the person is a terrorist!
    - The assessment needs to address if they pose a risk of *recidivism*, not whether they have been a terrorist in the past

# What Do Risk Categories Mean?

- No definitions in the manuals!
  - Contrary to the wider risk assessment field
- In other risk assessment schemes the assessment definition of high risk is a group that reoffend at a considerably higher rate than that of the average offender of that type
  - For sex offenders, usually twice the rate
- For terrorists, with a base rate of 1.6% to 2.9%, high risk could be defined as 3.2% to 5.8%
  - Is this really “high risk”?

# Ethical Obligations

- *APS Code of Ethics:*
  - B.13.2: Psychologists specify the purposes and uses of their assessment techniques and **clearly indicate the limits of the assessment techniques' applicability**
- *APS Ethical Guidelines for Psychological Assessment and the Use of Psychological Tests:*
  - 10.2(b): **is valid for the purpose for which the test is used...**

# What Can Clinicians Do?

- Stop using assessment tools in unvalidated ways
  - Uncritical use of unvalidated risk assessment tools can provide a false sense of validity (like a horoscope!)
- Using the TRAP-18 for “hot-blooded” short-term operational threat assessment can certainly be defended
  - The only measure with any such validation
  - The purpose for which the TRAP-18 was designed
    - Identifying if someone is likely to commit their first terrorist act

# What Can Clinicians Do?

- If you decide to engage in “cold blooded” long-term risk assessment of terrorists, extreme caveats need to be very clear
  - There is no ethical basis for passing off a checklist of items that differentiate terrorists from non-terrorists as a risk assessment tool for recidivism
  - Simply stating that a tool is a “Structured Professional Judgment” measure does not mean that basic psychometric issues of reliability and validity are not important
    - SPJ is a decision-making approach that allows for professional discretion within a structured application
    - SPJ does not absolve the user from ethical obligations in regard to appropriate use of assessment instruments

# What Can Clinicians Do?

- The base rate of recidivism is comparable to that of female sexual offenders, so it may be useful to adopt a similar approach:
  - Is there anything blatant about this person that would indicate that they are not one of the 97-99 percent of terrorists who do not commit another terrorism offence?
    - Stated intentions to offend, particularly worrying statements
  - An anamnestic/formulation approach may be feasible:
    - Comparing the individual's life circumstances and stressors at the time of the offending to now

# What Can Clinicians Do?

- Be aware that the Court will be taking your evidence seriously
  - Judges may place an offender on a Continuing Detention Order when at least one “expert” has stated that they pose a high risk for future terrorism
    - Even if the method used to deem them “high risk” is going to be wrong more than 90 percent of the time!
- If you are going to provide a risk category, define what you mean or else the words “low/moderate/high” are utterly meaningless and incredibly misleading to the court
  - I really want to see your definitions!!!
- Be aware of your ethical obligations
- This is a situation where providing an unsupported opinion is potentially less useful than simply saying the risk cannot be validly assessed

# Implications for Policymakers

- Mathematically it is essentially impossible to demonstrate a “high degree of probability... that the offender poses an unacceptable risk” without something extraordinarily blatant
  - Truly “needle in a needle-stack” territory
- If terrorist offenders are considered such a danger, and many would no doubt agree that they are, perhaps make laws that provide for indefinite sentences, or guaranteed Control Orders for a specified period, based on what they *actually* did
  - Preferable to asking forensic mental health professionals to address questions they cannot answer as a means to keeping offenders in detention or under supervision post-sentence

**Any Questions?**

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