

Forensic Psychology
Applied Cognitive Psychology and the Law

PSYC305
Applied Cognition & Neuroscience

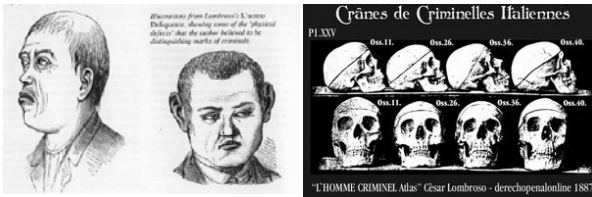
Forensic: from Latin *forensis* - of the forum
Roman assembly for judicial business
“Pertaining to, or used in, courts of law”

Forensic psychology: Application of psychological research & practice to the legal system (judges, police, attorneys, inmates, courts) & provision of psychological knowledge to facilitate legal decisions

It is both (a) the research endeavor that examines aspects of human behavior directly related to the legal process (e.g., eyewitness memory and testimony, jury decision making, or criminal behavior), and (b) the professional practice of psychology within or in consultation with a legal system that encompasses both criminal & civil law and the numerous areas in which they interact.
(Bartol, 1999)

History

Cesare Lombroso – 19th century Italian anthropologist, “father of criminology”, degenerate personality causes crime
criminals represent “throwbacks” to an earlier stage of evolution: asymmetrical faces, receding chin, low forehead, etc.



History

1843 – Trial of Daniel McNaughten

Attempted to assassinate British Prime Minister Robert Peel
(shot PM’s secretary by accident)

High-profile “insanity defense” – hired 4 barristers,
9 medical experts testified, found not guilty by reason of insanity

Queen Victoria was not amused -- led to “McNaughten Rule”

“To establish a defense on the ground of insanity it must be clearly proven that, at the time of committing the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or if he did know it, that he did not know he was doing what was wrong.”

History

Hugo Munsterberg -- father of Forensic Psychology
Student of Wundt, recruited to Harvard by Wm James,
elected President of APA in 1898

1908 – “*On the Witness Stand*” suggested Psychology
could be applied to study jury deliberations, expert
testimony, memory distortions, & eyewitness memory

Munsterberg’s arguments were so controversial
in 1909 John Wigmore published fictional transcripts
of a libel trial where Munsterberg was “sued” by the
legal profession

History

1909 – William Healey established psychological clinic
attached to juvenile court in Chicago, researched delinquency

1931 – Harold Burt publishes “*Legal Psychology*”
early developer of polygraph (1915)

1935 – Edward & Florence Robinson publish
“*Law and the Lawyers*” (Edward was professor of
psychology at Yale, Editor of Psych Bull, & a leader of the
Legal Realism movement)

1955 – George Dudycha publishes “*Psychology for
Law Enforcement Officers*”

1995 – Brent Turvey “*The Impressions of a Man*”
Offender profiling based on Locard’s *Principle of Exchange*

Forensic psychology is a function or role typically *not* a specific discipline of psychology, (very few post-graduate programs world-wide)

Involves a wide range of psychologists

Four forensic roles

Clinical Advisory
Actuarial Experimental

Four forensic roles

Clinical: assessments of ability, capacity, treatability, rehabilitation in prison, etc.

Actuarial: evaluating evidence, archival research to determine the likelihood of some occurrence (crash analysis, stress & trauma, etc.)

Advisory: assisting in jury selection, lawyer selection, offender profiling, interviewing, etc.

Experimental: conducting psychological research with implications for the law– eyewitness memory, warning labels, human error, jury decision-making, etc.

Clinical Forensic Assessments

Criminal Cases

Pretrial evaluations (fitness, competency, malingering)

*NCRMD (not criminally responsible by reason of mental disorder)

Dangerous Offender assessments

Treatment assessments

Post-trial (sentencing, classification)

Pre-release (parole, probation)

Civil Cases

Personal injury (negligence, sexual abuse, sexual harassment)

Custody & Access

Child Protection

Competency (guardianship, civil commitment, consent to treatment)

Clinical Forensic Assessments

Prediction of Dangerousness

based on personality testing (MMPI)

Reliability & validity are low

Research shows predictions tend to be wrong but can be improved using both clinical judgment combined with actuarial techniques (Faust & Ziskin, 1988)

Assessment of Capacity

Clinical assessments of mental disorder, mental handicap, brain injury etc.

based on neuropsych/psychometric testing

Better reliability & validity with normative indicators available

Actuarial Forensic Role

Product liability, Criminal negligence, Criminal nuisance, Crash & accident reconstruction

Expert Psychological Testimony

Admissibility

Expert testimony must relate to subject matter beyond the common understanding of the average juror

“Normal behaviour” is not therefore an allowable subject for expert testimony!

Advisory Forensic Roles

Police selection

Offender profiling

Jury selection

Assessments of truthfulness

Conducting Interviews

Police selection

Psychology first applied to selection of police officers in early 1916 by Lewis Terman at Stanford

Tested 30 police applicants

Found average Stanford-Binet IQ score of 84 required minimum IQ score of 80 for police

L.L. Thurstone used the Army Alpha test to measure intelligence -- found higher-ranked policeman had lower IQ scores than patrolmen

Police in general have average to above average IQ
IQ is positively correlated with training success
IQ is only weakly correlated w/on the job performance

(Poland, 1978)

Police selection

Job with significant stress and responsibility
Psychology used to predict who will have problems

MMPI used since 1930s

Reliable predictor of reprimands, grievances & suspensions
Does not predict supervisor ratings of performance

Inwald Personality Inventory -- designed to screen out psychologically unsuitable law enforcement candidates

26 scales/traits important to law enforcement, including:
Lack of Assertiveness Trouble with law and society
Undue Suspiciousness Driving violations

Reliability & validity similar to MMPI

Police selection

Police personality testing

Are certain "types" drawn to police work?

Lefkowitz (1975) 2 trait clusters common in police

Cluster 1 : isolation & secrecy, defensiveness & suspiciousness, & cynicism

Cluster 2 : authoritarianism, status concerns, & violence.

Cortina et al. (1992) Police profile on the MMPI-2 shows elevation on Scale 4

aggression/substance abuse/desire for stimulation

Profile matches that of many criminals!

(Takes one to catch one?)

Police selection

Behavioral observations/Situational tests

allows psychologists to observe candidates conducting a "realistic" police task

Clues Test: candidates are given a set of clues concerning a missing city workers and were given ten minutes to investigate. The candidates are graded on the amount and quality of information they uncover. Performance on the Clues Test was positively correlated with class ranking at the academy.

Foot Patrol Observation Test: Candidates walk a six block section of the city and are then quizzed about locations and activities. Scores from this test were not correlated with class rankings.

Offender profiling

criminal personality profiling

assist police investigations by reconstructing the probable type of offender from the crime scene

1950's Mad Bomber Case – conventional investigation failed & Police approached psychiatrist Dr James Brussel

After studying crime scene photographs & letters sent to newspaper by the bomber, Brussel produced profile:
Bomber lived in Connecticut, hated father, obsessively loved his mother, neat, obsessional, middle-aged Slav living with older brother or sister, wearing older fashioned clothing (double-breasted suit kept buttoned)

Arrested & charged George Metesky, Polish, 50's living with 2 unmarried sisters, emerged from bedroom wearing buttoned double-breasted suit when arrested

Offender profiling

29 June 1988 the New Castle County Police discovered the body of a woman at a construction site. Naked, lying on her back with head injuries, tape residue on her face, gray duct tape in her hair and bruising around her neck, wrists, & ankles. Police found tire tracks and blue fibers but no footprints or blood.

Detective in charge learned of an unsolved murder in 1987 at a construction site 5 miles from the 1988 victim. Crime scene was identical except earlier victim was partially clothed.

FBI profilers suggested the offender was a 25-35 yr old white male residing nearby, worked in construction trade, drove a van with high mileage, macho image, with possible wife or steady girlfriend.

Undercover police arrested the offender within a few days and seized his van. Blue fibers matched carpet in van.

Offender profiling

Assumptions:

A crime scene reflects an offender's personality
(*modus operandi*)

A person's behaviour will remain consistent
in similar situations

Profilers typically have backgrounds in Psychology & Sociology

FBI's Behavioral Sciences Unit - John Douglas and Robert Ressler Based on large study (1979 – 1983) in which they entered prisons and interviewed offenders about their backgrounds, crimes, crime scenes, and victims. Also used court transcripts, police reports and psychiatric and criminal records. These data formed the basis for the FBI profiling method. Widely attended by international police forces.

Offender profiling

Key component of FBI method is organised-disorganised offender dichotomy

organised	disorganised
Average to above average IQ	Below average IQ
Socially competent	Sexually inadequate
Sexually competent	Sexually incompetent
Skilled work preferred	Unskilled work
High birth order	Living with partner
Living with partner	Low birth order
Inconsistent childhood discipline	Harsh discipline as a child
Use of alcohol with crime	Minimal use of alcohol
Mobility with car in good condition	Lives/works near the crime scene
Controlled mood during crime	Anxious mood during crime

Washington Sniper case

Sniper's registration plates had been run through Police database 10 times because of various reports & suspicions, but disregarded because profile said sniper must be a white male

Offender profiling

Alternative methods: Six-fold typology
for serial homicides
Holmes & Holmes (1998)

Table 2
Crime Scene Activities Indicated by Holmes and Holmes (1998) Classification of Serial Killers

Victimary	Mission	Lust	Thrill	Power/control
3. Rape/robbery	41. Bloodstained	1. Multiple crime scenes	1. Multiple crime scenes	1. Multiple crime scenes
7. Disfigurement/scars	24. Female victim	4. Multiple sex acts	4. Restraints	4. Restraints
8. Clothing removed	23. Murder weapon missing	5. Torture	5. Torture	5. Torture
21. Bloodstained	35. Throat cut	10. Alive during sex acts	10. Alive during sex acts	10. Alive during sex acts
41. Weapon left in victim	32. Officer penetration	11. Vaginal rape	11. Vaginal rape	11. Vaginal rape
50. Weapons of opportunity	14. Genital mutilation	12. Object penetration	12. Object penetration	12. Object penetration
36. Trail of clothing leading to/from crime scene	15. Throat mutilation	13. Bite marks	13. Bite marks	13. Bite marks
	16. Abdominal mutilation	22. Manual strangulation	22. Manual strangulation	22. Manual strangulation
	17. Abdominal mutilation	21. Ligature strangulation	21. Ligature strangulation	21. Ligature strangulation
	18. Facial disfigurement	24. Murder weapon missing	24. Murder weapon missing	24. Murder weapon missing
	20. Beaten	38. Body covered post-mortem	38. Body covered post-mortem	38. Body covered post-mortem
	22. Manual strangulation	31. Tampered with evidence	31. Tampered with evidence	31. Tampered with evidence
	25. Murder weapon missing	33. Body concealed	33. Body concealed	33. Body concealed
	26. Body covered post-mortem	34. Burns on victim	34. Burns on victim	34. Burns on victim
	28. Body postured	29. Body parts missing	29. Body parts missing	29. Body parts missing
	29. Body parts missing	30. Disembowelment	30. Disembowelment	30. Disembowelment
	30. Disembowelment	32. Tampered evidence	32. Tampered evidence	32. Tampered evidence
	32. Tampered evidence	33. Body concealed	33. Body concealed	33. Body concealed
	33. Body concealed	34. Burns on victim	34. Burns on victim	34. Burns on victim
	34. Burns on victim	36. Violence at genitalia	36. Violence at genitalia	36. Violence at genitalia

Offender profiling

Alternative methods: Victim-Killer Interactions
Canter et al. (2004)



Offender profiling

Alternative methods: Instrumental-expressive
dichotomy for serial homicides
Salfati & Bateman (2005)

Table 2. Instrumental and expressive behaviours in serial homicide

Instrumental behaviours	Expressive behaviours
Sexual assault	Victim was male
Victim found partially dressed	Victim was 15 years of age or less
Body moved from discovery site	Weapon brought to scene by the offender
Victim found nude	Body hidden
Body recovery site was in or about victim's residence	Offender destroyed/attempted to destroy evidence
Victim was 35 years of age or older	Victim was bound
Body was staged or posed	Stabbing or cutting weapon used
Weapon used was ligature	Victim was between 15 and 25 years of age
Weapon used was offender's hands or feet	Victim was between 25 and 35 years of age
Weapon used was a bludgeon	Weapon used was firearm
Body displayed openly or to ensure discovery	Small personal items/trophies taken from victim
Victim was gagged	Victim was tortured
Unusual act, ritual or thing performed	

Jury Selection

voir dire

Purpose is to select an unbiased and representative panel

Prospective jurors are questioned by the attorneys and the judge to eliminate anyone that is biased, related to the case, or prejudiced

Prospective jurors excused for any of these reasons are excluded from service *for cause*

Attorneys also given a set number of *peremptory challenges*

Jury selection consultants aid attorneys in jury selection and preparation of witnesses

Consultants use surveys and focus groups to assess people's reactions to the case. Also conduct post-trial interviews with jurors (& people excused from service) to determine who should be eliminated from serving on subsequent cases

Jury Selection

Traditional approach (US/UK)

The *best* jurors:

A man of “good habits”, intelligent, representative, carrying responsibilities, family man (weight effect of verdict upon his own children), sense of obligation, reputation for honour & fairness, as regard in his practical life for religion (conscientious)

Bad jurors:

clergymen, school teachers, lawyers, wives of lawyers
(too opinionated)

cabinet makers (they want everything to fit neatly together)

Germans & Scandinavians (too exacting)

Jury Selection

Scientific approach

Psychologists used to identify sympathetic jurors

Obtain a representative sample of jury eligible people
give them the essentials of the case
assess their attitudes toward the defense and prosecution
assess demographics and psychographics & produce
profiles of least desirable jurors & most desirable jurors

Sex, age, gender, ethnicity, religion, income
show minimal predictive power
unless these aspects are specifically relevant to the case,
(e.g., sexual assault, domestic violence, racial crime,
minority group defendant)

Jury Selection

Gender & race of principal actors (judge, attorneys, defendant) play a larger role

Example: woman lawyer for rape defendant acquittal rate of 71% vs 49% for male lawyer
(Villemur & Shibley-Hyde, 1993)

Some research findings to support the claim that scientific jury selection works better than traditional methods for cases involving capital punishment

Study of 35 capital trials -- 17 cases in which no jury consultant was used
61.1% of juries recommended the death sentence
18 cases in which defense used jury consultant, 33.3% recommended death sentence
(Nietzel & Dillehay, 1986)

Authoritarianism & locus of control attributes can have an effect on severity of sentences

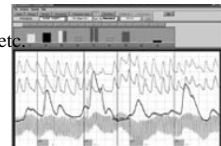
Detecting Deception

Polygraph = “many writings”
invented in 1915-1921
measures: galvanic skin response (GSR), heart rate, respiration, blood pressure



Three stages:

1. Pre-test interview to determine suitability for testing, medical history, etc.
2. Compare reactions to critical & neutral stimuli
3. Chart analysis & interpretation



Detecting Deception

Controversy over polygraph accuracy

Hovarth (1977) compared blind judgments of charts by 112 experienced professionals & compared to original assessments

Found only 63% agreement (50% is chance)
Suggested they were using more than charts

Field studies report high accuracy -- 98% (Ansley 1990)
(but no independent measure of truth)

More false positives than “misses”
(only 96% accurate with truthful statements)

Other indicators:
Body language, voice stress, EEG (P300 wave)

Conducting Interviews

interviewing children
interviewing people with learning difficulties

assessment of suggestibility

investigative hypnosis
(including “repressed / recovered” memories)

Documenting witness’ memories
(without contaminating them)

Conducting Interviews

Documenting witness' memories without contamination
(*prior to the effect of constructive processes*)

Cognitive Interview Technique

1. Mentally reinstate the context
2. Report every detail
3. Use different temporal orders
4. Use different perspectives

47% gain in information elicited in above order
(63% improvement with trained interviewer)

Witnesses who make a public statement of what they recall are less likely to change their recollection

Conducting Interviews

Repressed & Recovered memories
(*via spontaneous recovery, hypnosis, or therapy*)

Memory that is so traumatic or painful that it is *actively forgotten*

Expert panel convened by BPA
3 criteria required for evidence

1. Whether the event actually occurred
2. Whether the event was actually unavailable from the time it happened until much later
3. Whether forgetting was result of repression or some other process

Concluded: So far no evidence that meets all 3 criteria
repression may occur (but very rare)
certainly over-diagnosed

Conducting Interviews

Repressed & Recovered memories

Expert panel convened by APA

3 clinicians & 3 memory researchers

After 2 years of work, unable to reach an overall consensus

Agreed:

most people abused as children remember what happened
it is possible to forget for a long time, then remember
it is possible to construct pseudomemories

Disagreement over:

"rules of evidence" for testing hypotheses
accuracy of memory over time
the frequency of pseudomemories
ease of distinguishing real memories from pseudomemories

"two different world views"

Conducting Interviews

US Dept of Justice (1999)

Guide for the collection and preservation of
eyewitness evidence

Establish rapport

Let witness volunteer w/o prompting

Use open-ended questions not leading questions

Caution against guessing

One suspect per line-up

Select line-up fillers that match

Pre-lineup instructions

Avoid post-identification suggestions

Sequential lineup is superior to simultaneous

Experimental Forensic Role:

Example Research Topics

Eyewitness Testimony

Eyewitness Identifications

Jury Behaviour

Jury Decision-making

Eyewitness Testimony

Early history of research & publications

1900-1907 Stern published German journal on testimony

1905 Binet's paper on testimony

1908 Munsterberg publishes *On the Witness Stand*

1903-1917 Psych Bulletin publishes annual review of

psychology research on testimony

Interest declined until late 1960's

Witness credibility – children & elderly are seen by
juries as more honest but as having faulty memories

Eyewitness Testimony

Accuracy of testimony influenced by events during:

Acquisition – time spent witnessing the event,
emotional tone of the event

Retention – delay between event & recall,
talking with other witnesses

Retrieval – style of questioning, misleading questions

Acquisition factors

Stress effects – Yerkes-Dodson law, inverted U-shaped function
poor recall of events with too little or too much stress

Violence effects – violent events can produce time dilation and
retroactive interference for 2 minutes prior

Weapon focus – attention dedicated to weapon and
little else is encoded

Eyewitness Testimony

Retention factors

Recency effects – more time between event and
retrieval the poorer the accuracy (and greater
susceptibility to misleading suggestions)

Plausibility effects – the more unusual the event (departs
from schema or script) the more memorable it will be,
but details (especially implausible ones) are forgotten
Recollection of what probably happened

Source monitoring effects – did you see it or just hear about it?
Confusion with post-event discussions, identifications, etc.

Eyewitness Testimony

Retrieval factors

Constructive processes – effects of subsequent
information, misleading questions & suggestions

Young children's memories are no less accurate than adults,
but they may recall fewer details, better at remembering events
than identities, young children are more susceptible to leading
questions and suggestions, more questions = more errors
Very young are poor at source monitoring

Elderly are also more suggestible (poor at source monitoring),
less complete, and less accurate

Architects, artists, & salespeople most easily misled
college students least suggestible

Eyewitness Testimony

Physical evidence is often dismissed as
“only circumstantial”

Evidence with the greatest influence on a jury is
eyewitness testimony

How good are eyewitness identifications?

Case of the Gunman of Liverpool

Several witnesses to crime
“face imprinted on my brain”

Laszlo Virag was
arrested & convicted

Georges Payen later confesses



Eyewitness Identifications

How accurate are eyewitness identifications?

It depends on how they are obtained

Recognition memory for faces, voices, & names
is good, but a high rate of false positives

Eyewitnesses are better at identifying people their
own age and own race

Most police investigations use
simultaneous line-up or photo parade

Eyewitnesses must use a relative judgment strategy

Sequential Line-up Procedure

Lindsay (1991)

Make yes-no judgement one line-up member at
a time

Eyewitnesses are less likely
to use relative judgement strategy

Results show very high accuracy,
few false positives

Yet to be widely implemented, most police & prosecutors
are not convinced a problem exists

Memory for People

Memory for faces; we recognise people,
not their faces

Little Red Riding Hood Effect
*even a wolf looks like Grandma when its
wearing her clothes*

Also Mode effect – photo vs moving image

Memory for People

Recall for faces is even worse than recognition
(little or no practice)

Four techniques to help:

Artist sketches – Photofit – Identikit– E-fit
Photofits made minutes after viewing face on left



Jury Behaviour

Three methods of study

Post trial interviews of juries

Not allowed in NZ or Canada but common in the U.S.

Problems of retrospective accounts

Jurors may not appreciate or recognize factors that affected
their verdict (LaFree, Reskin, & Visher, 1985)

Archival Analyses

High in external validity but no control of data collection,
correlational (can't infer causation) (Avio, 1988)

Jury simulations & mock jurors

Good control, less complex, but verdicts are hypothetical
& participants usually students (Douglas, Lyon, & Ogloff, 1997)

Jury Behaviour

Jury simulations & mock jurors

Lesser sentences for attractive defendants

Lesser sentences for women

Lesser sentences for higher socio-economic status

Lesser sentences for Anglo-americans

DeSantis & Kayson (1997)

Jurors are positively influenced by positive, confident
testimony & body language: quick delivery, no pausing,
good eye contact, head nodding

Hans & Vidmar, 1986

Jurors are required to come to unanimous verdict
In practice, initial majority verdict usually determines final
group verdict

Jury Behaviour

Law students as mock jurors

read detailed criminal case divided into sections

Rated defendant's guilt on 9-point scale after each section

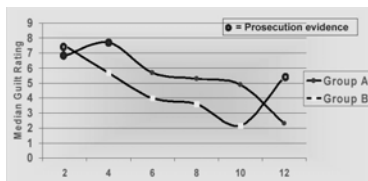
Ratings of guilt increased after each prosecution presentation,
decreased after each defense presentation Weld & Roff, 1938

Also manipulated order of presentation,

Group A: Prosecution first defense second (used by most courts)

Group B: Prosecution starts and finishes

Found:



Jury Decision-making

Two historical models

Rational-Mathematical model

Jurors use mental calculations weighing the strength of
each piece of information and compare it to a criterion
for guilt

Story model

Jurors organise and interpret trial evidence to fit
narrative or story schema and then try to find best fit of
story to verdict categories provided

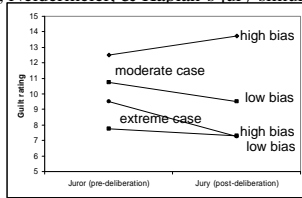
Research favours the Story model

Evidence presented witness by witness or chronologically (event-
based). Chronological sequence more likely to produce verdicts
consistent with the story schema

Jury Behaviour

Are jurors more or less biased by irrelevant information than juries?

Kerr, Neidermeier, & Kaplan's jury simulations



Found that jurors are more biased for extreme cases (very strong or very weak evidence)

But juries are more biased than individual jurors for moderate cases

Judicial Instructions

Judicial instructions to disregard evidence is rarely successful (can't un-ring the bell)

More evidence for the Story model

Prior record of offending can be used to assess credibility
Doesn't affect jurors' opinions of credibility, does affect their perceptions of guilt

Found improvements in juror comprehension of judicial instructions by simplifying the Judge's language (in accordance with psycholinguistic theory)

Alfini & Sales, 1982

Canadian court system has attempted to simplify language used in judicial instructions to juries