GUILTY

Evaluation of Forensic Science Evidence Post R v T

Society of Forensic Podiatrists, Sheffield

24th April 2013

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Felstead Forensic Training

Issues Facing the Forensic Scientist

What is your role in The Forensic Process?

What issues can you address?

How are your scientific findings to be evaluated?

How do you demonstrate impartiality?

How do you encourage consistency?

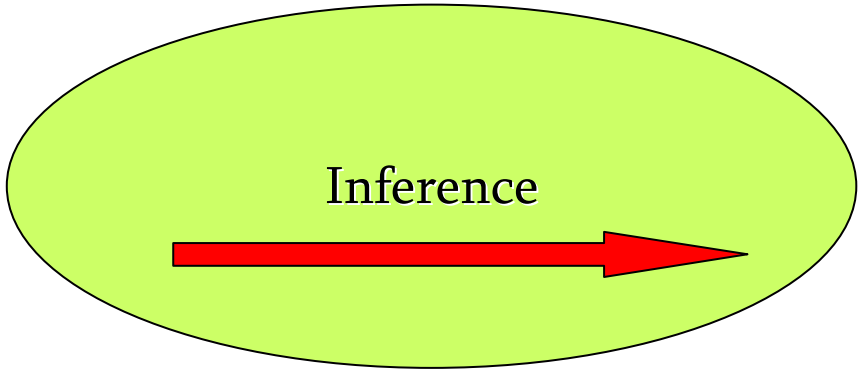
The duty of an expert is to assist the judicial process by applying their skills and knowledge in developing effective ways to present evidence to avoid misunderstanding

Getting the point across to the jury

Inference

Process by which we form opinions

Observations



Opinion

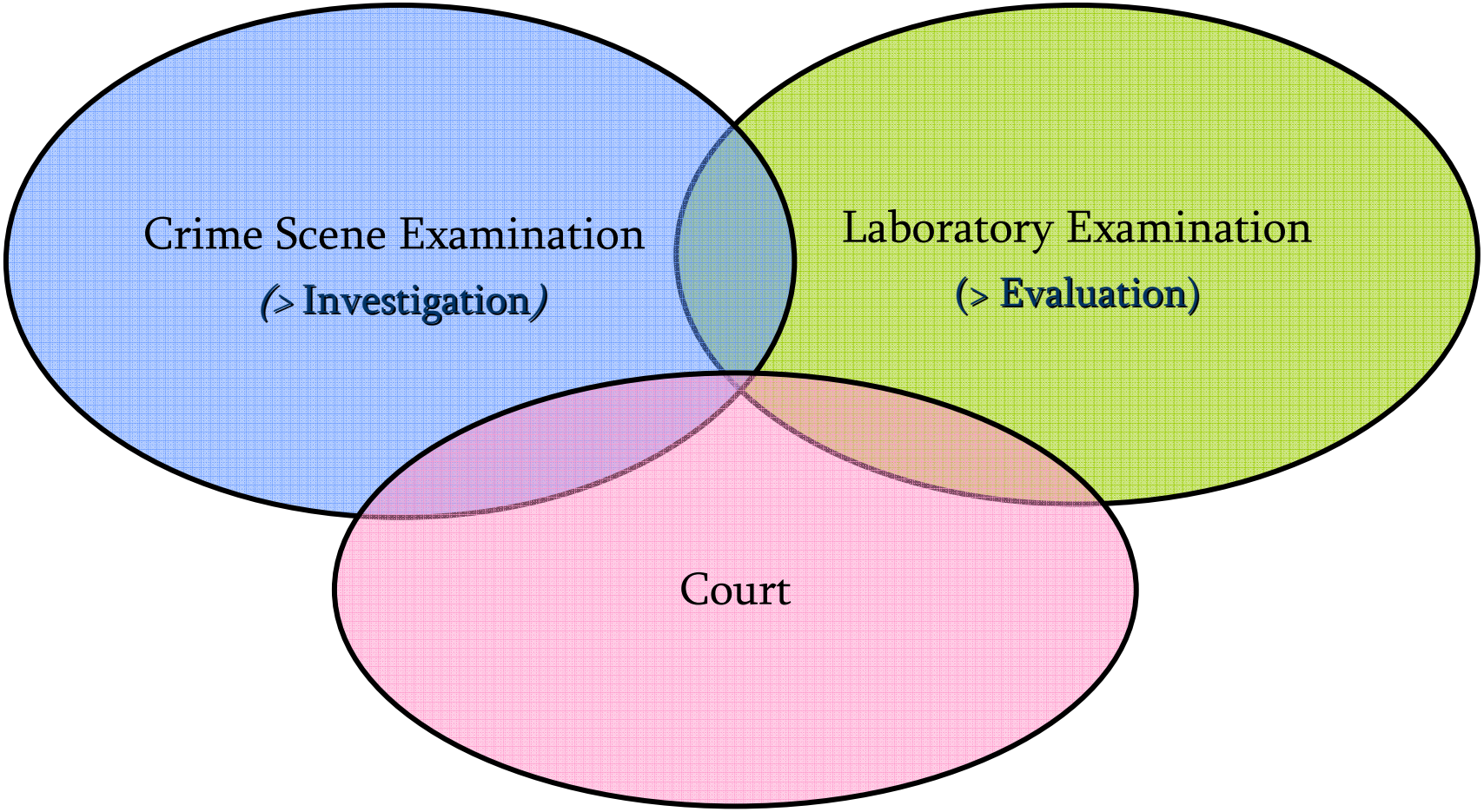
Intuition

or

Logical Reasoning

Reasoned Judgment/Informed Opinion

The Forensic Process



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Role of the Forensic Scientist - Investigator

Issues more crime-centered and open-ended with explanations being generated to account for your observations

Explanations can be generated without mutually exclusive alternatives and ranked using probability estimates based on:

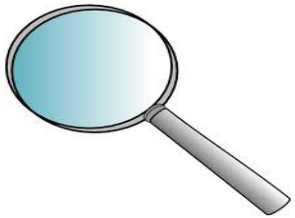
Personal knowledge/experience

Consideration of uncertainties around the observations and case circumstances

Advise on how your observations might impact on the conduct of a police investigation:

Speculate, give options, explanations, eliminate possibilities, risk of misleading

- The fire could have been started deliberately OR……
- The appearance and distribution of the blood spots suggest the assault could have started in the living room OR……



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Role of the Forensic Scientist - Evaluator

Issues more defendant-centered and structured around competing propositions

Offer opinion in the form of an evidential weighting addressing the competing propositions

Incorporates the case circumstances ("Conditioning information")

Assist the court by providing evaluative opinion

Based on the assistance your scientific observations might provide in addressing the issue the court is deliberating

- In my opinion, the overall appearance and distribution of the blood on the right training shoe is far more likely if Mr. Onions stamped on Mr. Pickles rather than if Mr. Onions did not stamp on Mr. Pickles but administered emergency first aid to Mr. Pickles who was positioned close to the floor

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Investigative v Evaluative

Investigative opinion

The overall appearance and distribution of the blood on the right training shoe suggests Mr. Onions was standing in the close proximity of and facing a source of wet blood that was being forcibly displaced

Evaluative opinion

The overall appearance and distribution of the blood on the right training is far more likely if Mr. Onions stamped on Mr. Pickles rather than if Mr. Onions did not stamp on Mr. Pickles Y but administered emergency first aid to Mr. Pickles who was positioned close to the floor

Asking different questions

Investigative		Evaluative
Has an offence been committed?	Level 3 Offence	The defendant is the offender
How was the blood stain pattern produced?	Level 2 Activity	The defendant stamped on the victim
Is that blood on the training shoe?	Level 1 Source	The blood on the training shoe came from the victim

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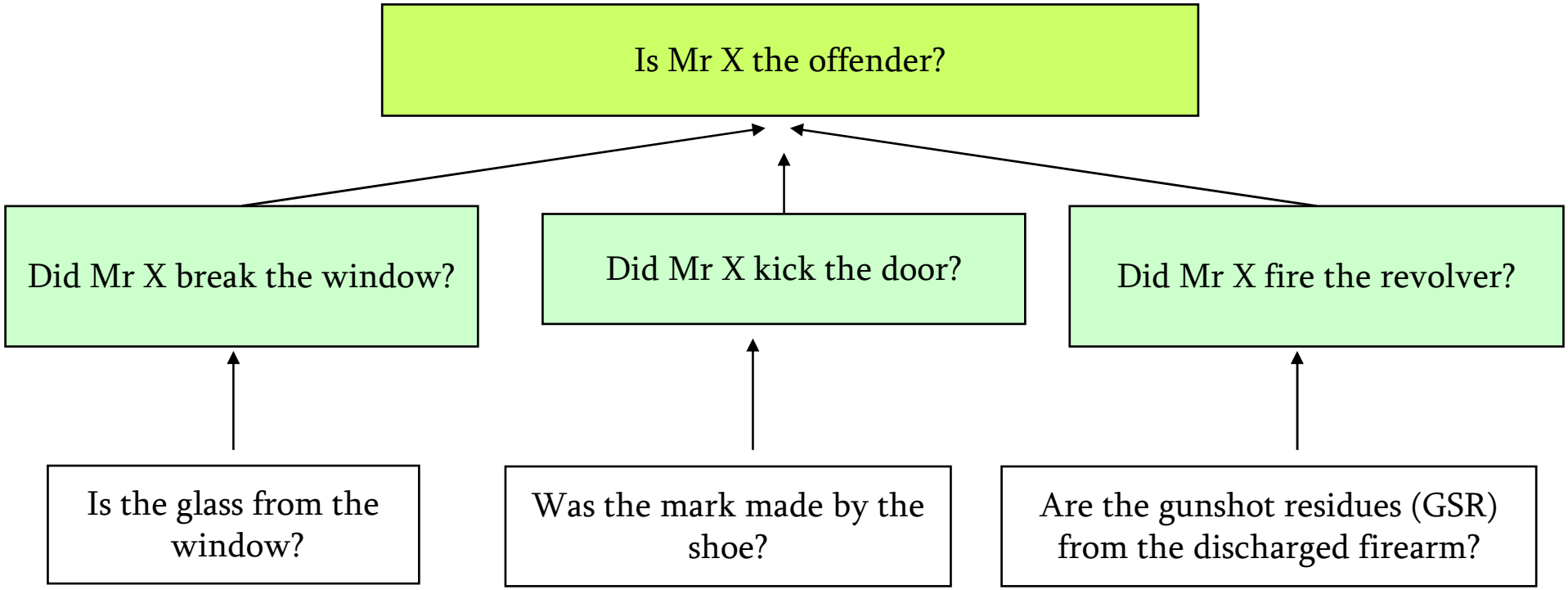
Hierarchy of Propositions



If the **Source** of the trace evidence is not contested, the issue for the court is more one of how and when the trace evidence was deposited - **Activity**

JILL DANDO NIGHTMARE

Family's anguish as 'killer' is given new trial

Barry George stays in jail despite appeal victory

Barry George: conviction judged unsafe

PAUL CHESTON
Courts Correspondent

THE family of Jill Dando were thrown into turmoil today after the man found guilty of her murder had his conviction overturned.

Three Appeal Court judges ruled that the jury's verdict on Barry George was "unsafe and unsatisfactory" and there must be a retrial after doubts were cast on forensic evidence. But he must stay in prison pending the new hearing.

Consultant gynaecologist Alan Farthing, Ms Dando's fiancé at the time of the killing, said the decision meant the family would have to deal again with every detail of the tragedy.

The 37-year-old BBC presenter was shot dead at point-blank range on the doorstep of her Fulham home in April 1999.

Mr Farthing added: "I am disappointed, particularly for those of us who have suffered the tragedy of losing a loved one prematurely. We have had to move on with our lives.

"Therefore, I have great sympathy for those who will now have to take emotional steps back in time to recall again, in detail, their involvement in this tragic case."

George, 47, looked pleased at the ruling and

CONTINUED ON PAGE 2

Jill Dando: the TV presenter was shot dead on her Fulham doorstep in

Murder of Jill Dando

At 11.30am on 26th April 1999, Jill Dando (a well-known TV Personality) was shot dead on the doorstep of her home in London

No witnesses
Single shot to the back of the head
No firearm found
Cartridge case recovered from scene
Bullet recovered

Barry George was interviewed on 11th April 2000 (approx 1 year after incident)
Amongst various exhibits taken from his flat for examination was a coat

"a single particle of gunshot residue (GSR) was found inside one of the pockets of the coat"
"the composition of the GSR particle was indistinguishable from GSR particles at the crime scene"

Judicial Guidance

There are 2 important questions you have to ask yourselves

Firstly, **are you sure** this is a particle of GSR?

If you are sure it is a particle of GSR, **are you sure** the particle was not deposited on the coat as a result of adventitious contamination?

Secondly, you have to decide whether the prosecution has made you sure this particle was deposited on the coat other than adventitiously

If you are sure you can exclude innocent contamination, then you can take this matter into account
If you are not sure the prosecution has proved its case on this issue, then discard this evidence altogether; it will not help you at all. In that event, you may think this removes an important part of the Crown's case

What were the difficulties for the jury?

Judicial Guidance

In relation to the question of contamination, all the experts agree there is a possibility contamination could have occurred adventitiously

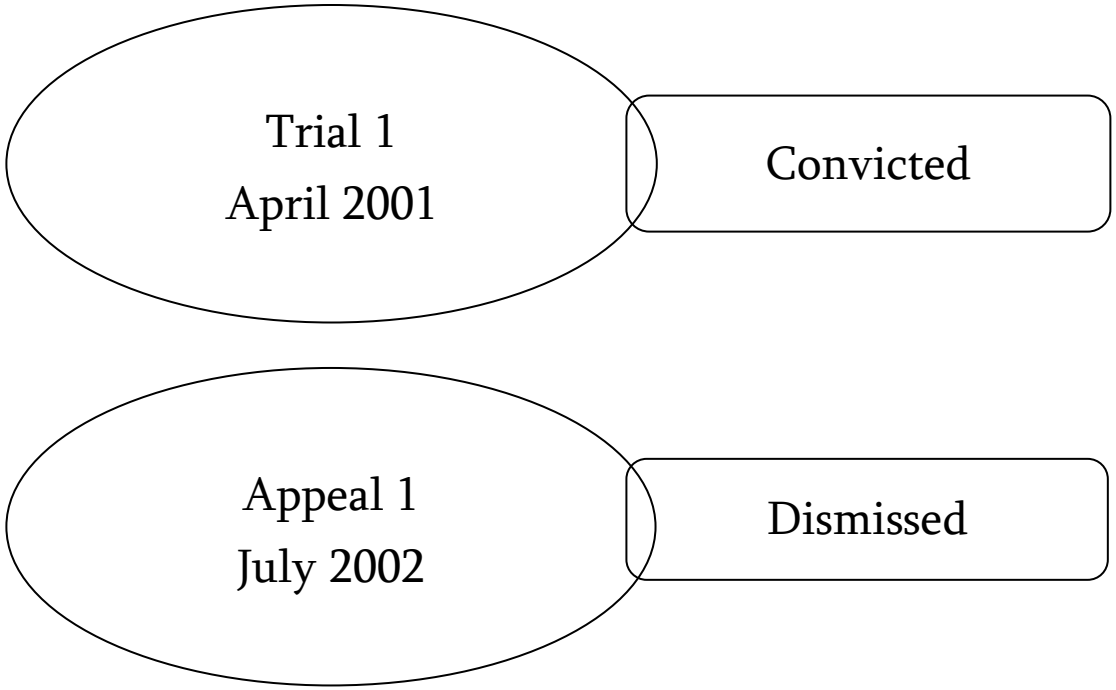
As to whether the risk of that having occurred was real, theoretical or low risk, the experts vary in their individual assessments..... **you must decide** whose evidence you accept

The Crown say the particle, together with all the other pieces of evidence, overwhelmingly supports the Crown's case

The defence say, it is incredible, that after one year, this is incriminating evidence. Such particles are shed rapidly and could not survive on the coat that long

What were the difficulties for the jury?

Murder of Jill Dando



We will come back to this case

Intuition v Logical Reasoning

The scientist and the judge were passing evaluation of the GSR evidence to the jury in the face of complexity and uncertainty asking then to apply their Intuition (Immediate mental apprehension without reasoning) - in a subject in which they had little or no knowledge

Is that fair….. and reasonable?

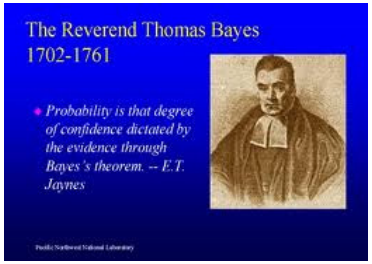
Experts are required to assist the jury by expressing opinions based on Logical Reasoning using knowledge and skills the court are unlikely to possess

How is this best achieved?

Applying the Fundamental Principles of Evaluation

Fundamental Principles of Evaluation

Founded on Bayes' Theorem



- Evaluation must be carried out within a framework of circumstances - I
  Conditioning Information

- The scientist must consider their observations in light of prosecution Hp and defence Hd propositions

- The scientist must consider the probability of their findings E if the prosecution proposition were true and if the defence proposition were true
  The magnitude of these two probabilities - The Likelihood Ratio (LR) - determines the assistance provided by their findings in weighing the two propositions against each other

Bayes Theorem

$$\frac{\Pr(Hp \mid E, I)}{\Pr(Hd \mid E, I)} = \frac{\Pr(E \mid Hp, I)}{\Pr(E \mid Hd, I)} \cdot \frac{\Pr(Hp \mid I)}{\Pr(Hd \mid I)}$$

Posterior Odds
[Court]

Likelihood Ratio (LR)
[Scientist]

Prior Odds
[Court]

Probability of the evidence

Competing propositions

Conditioning information

Court is concerned with the probability of guilt (Hp/Hd) given the evidence (E)

Scientist is concerned with the probability of the evidence (E) given the competing propositions (Hp/Hd) and offers an evidential weighting (LR) for the jury to decide whether to update their Prior Odds

Prosecutors Fallacy

Transposing The Conditional

In my opinion, the overall appearance and distribution of the blood on the right training shoe is more likely to occur if Mr. Onions stamped on Mr. Pickles Rather than if Mr. Onions did not stamp on Mr. Pickles but administered emergency first aid to Mr. Pickles who was positioned close to the floor

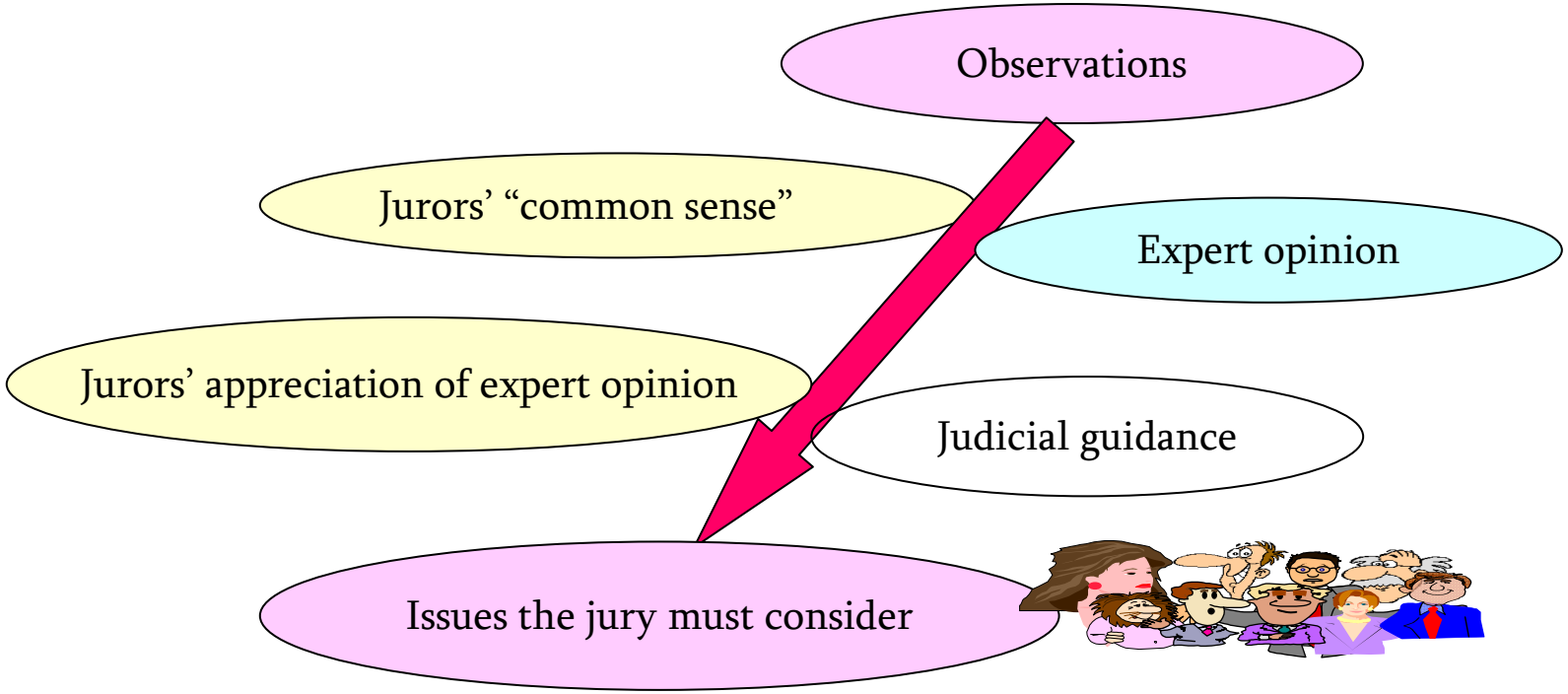
Probability of the evidence (E) given the competing propositions (Hp/Hd)

So what you are saying is

It is more likely Mr. Onions stamped on Mr. Pickles

Probability of guilt (Hp/Hd) given the evidence (E) - Transposing The Conditional

Principles of Expert Opinion



Experts are expected to be objective **(Logical)** unbiased **(Balanced)**, give opinion on matters within their expertise **(Robust)** and only on the issue being deliberated by the court **(Transparent)**

How is this supported by the Likelihood Ratio (LR)?

Logic and Balance

$$\frac{\Pr(E \mid Hp, I)}{\Pr(E \mid Hd, I)}$$

Logic

Address probability of the evidence E given the proposition H and conditioning information I

NOT the probability of the proposition H given the evidence E (Transposing The Conditional)

Balance

Address at least one pair of propositions one based on the prosecution proposition Hp and one based on the defence proposition Hd

If a reasonable alternative cannot be identified the expert may address only the one proposition making it clear they cannot offer an evidential weighting to the evidence

Robustness and Transparency

Robustness

Provide opinion based on sound knowledge of evidence types and the use wherever possible of verified databases

Be satisfied the results of the tests and examinations upon which opinion is based are reliable

Capable to scrutiny under cross-examination and by other experts

Transparency

Demonstrate how they came to their conclusion, setting out in their report the basis of their opinion:

- Conditioning information used
- Propositions addressed
- Examination results
- Provide details of data used and its origin

“Could be” …..”Consistent with”

Ineffective and misleading terms

“In my opinion, the presence of DNA from Mr Smith on Mr Jones’s trouser pocket is consistent with him having contact with this area of the trousers and could be the result of him tearing the pocket. I would not exclude the possibility that the DNA could also have ended up on the trousers when a leather glove that had previously been worn by Mr Smith was worn by the true offender”

These are two **explanations** for finding DNA from Mr Smith on Mr Jones’s trouser pocket. No attempt has been made to comment on which of the **two competing propositions** is the more likely (if either) to account for Mr Smith’s DNA on Mr Jones’s trouser pocket

How does this help the court?

Murder of Jill Dando

Let's try a logical view → Propositions

Hp: Barry George shot Miss Dando

Hd: Barry George did not shoot Miss Dando and had nothing to do with the incident

E: One particle if gunshot residue in the pocket…….

What is the Pr (E) if Barry George shot Miss Dando (Hp) given (I)?

What is the Pr (E) if Barry George did not shoot Miss Dando and had nothing to do with the incident (Hd) given (I)

Murder of Jill Dando

Hp: Barry George shot Miss Dando

Hd: Barry George did not shoot Miss Dando and had nothing to do with the incident

E: One particle of GSR……

Pr(E |Hp,I) Very small

Pr(E |Hd,I) Very small

Expert's view

LR > 1

Murder of Jill Dando

The probability of finding a single particle of gunshot residue on Mr George's coat appears to be much the same, whether he shot Ms Dando or if he did not shoot Miss Dando and had nothing to do with the incident

How do we express this in a way the jury might understand?

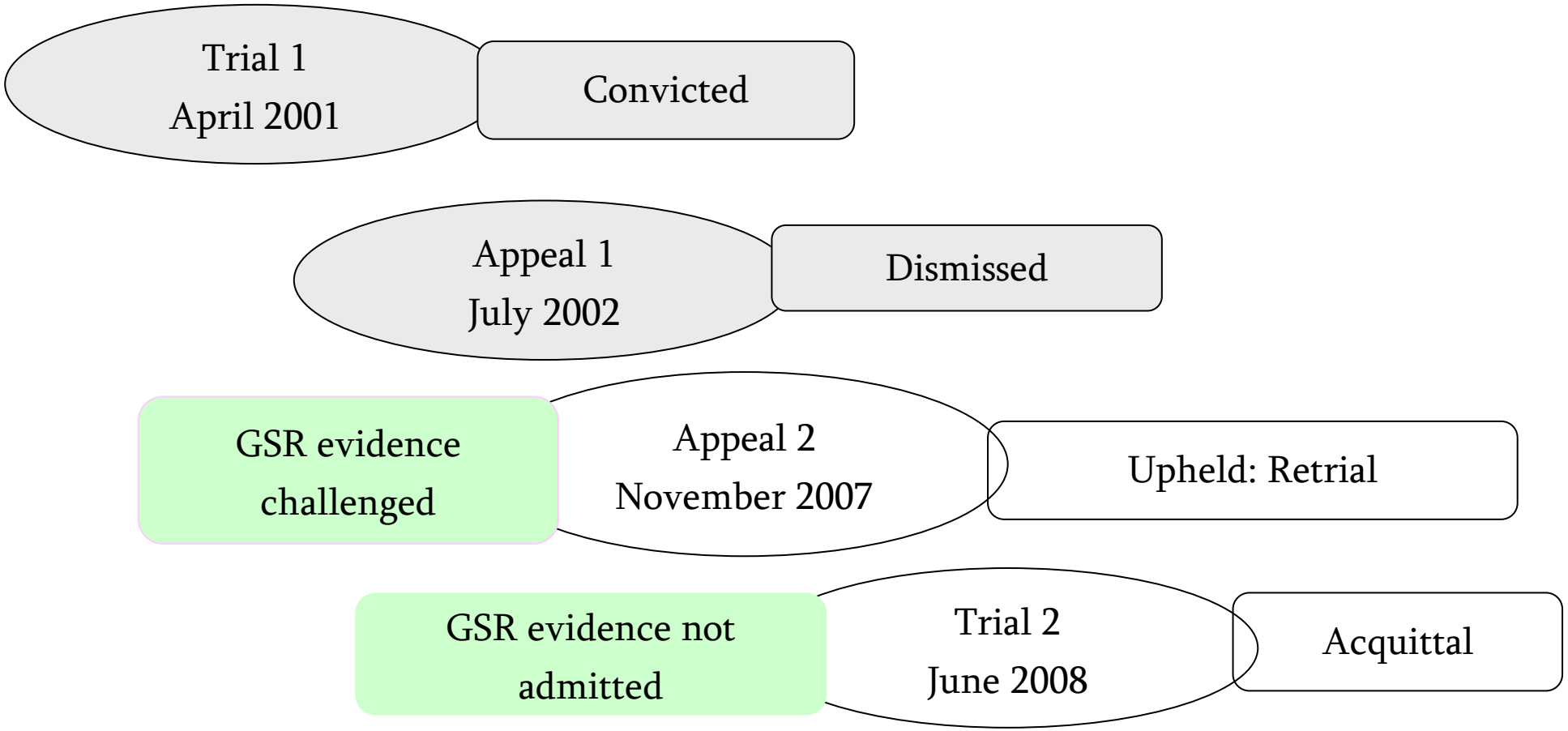
Possibilities

In relation to the two propositions, the GSR evidence is neutral

The weight of the GSR evidence is zero

In my opinion, the GSR evidence does not assist in addressing the issue of whether Mr George shot Ms Dando

Murder of Jill Dando



Probabilities

To assign a probability to an event occurring one needs "Conditioning information"

Differences in opinion can be due to the opinion being based upon consideration of different conditioning information

Probabilities are personal even when informed by data

Informed by applying experience to the issue with any uncertainty reflected in the assigned probability

Individuals have different personal experience and it is likely they will arrive at different probabilities when provided with the same conditioning information

Objective Probability

Based on repeated experiments and observations

Tossing a coin: You might want to know the physical nature of the coin and how it is tossed but most would accept the probability of a head is 0.5

Independent of any personal view about the outcome (Human judgement)

Derived solely from the randomness of the prevailing conditions and dependent on chance

Difficult to provide this approach to issues in forensic science

Not in the position to replicate the exact circumstances of a crime or repeat with any degree of reliability

Subjective Probabilities

Gamblers make informed decisions on the probability a horse will win a race based on:

Odds given by the bookmakers

Consideration of the horse's previous form

State of the ground

How the horse has been training

Form of the other horses in the race

Gives a degree of belief of how the horse will run with any uncertainty derived from limitations of knowledge

Forensic scientists ascribe probabilities to one-off occurrences using personal experience, knowledge and case circumstances to inform our view

Does this apply to the jury?

UKCJS relies on the subjective probabilities of the jury by them establishing their Prior Odds and Posterior Odds

Forming an opinion

Data Collections
Scientific Literature

Case Circumstances
(Conditioning Information)

Observations

Personal Knowledge
Casework Experience

Work colleagues

Generic Issues

I need "Hard data" to evaluate a Likelihood Ratio

Probabilities should be informed by data, knowledge and experience

Surveys & databases ("Hard" knowledge)

Casework experience ("Soft" knowledge)

"Generic" data sets are not appropriate to my case

Unlikely to have "ideal" data sets for any specific case circumstance

Need to use what we have in a reasoned way

The outcome of R v T was not only one of disclosure but also the reliability of the knowledge sets (databases) used and how the data was applied in the evaluation of the scientific findings

R v Weller - Trial

Case of alleged digital penetration of the vagina

DNA on the fingernail clippings of the defendant came from the victim

Crown expert

"… provided strong support for the view that the source of the DNA was contact with the vagina"

Defence expert

" …the fingers of the left hand were inserted in the vagina is a ready explanation for the evidence we observe so I think that is the more likely scenario. The evidence is more likely to be seen given that scenario than the other scenarios. When we come to consider the other scenarios, well I have in mind what strong means in terms of the scale, and I think that's setting it too high"

Both experts were convinced it was possible to given an evaluative opinion which differed only in the emphasis (evidential weighting)

R v Weller - Issue at Appeal

Case of alleged digital penetration of the vagina

No reliable scientific basis on which a scientist could have evaluated these probabilities

The defence expert was an academic basing his opinion solely on available scientific papers

The expert for the Crown was a man of practical experience in DNA whose knowledge was derived from not solely published papers but also from extensive experience as an operational forensic practitioner

Contested - Evidential weighting could not be assigned to matters that were not published

Accepted - Scientific research could be used for considering whether in the case circumstances inferences could be drawn as to the method of transfer

R v Weller - Appeal Court Ruling

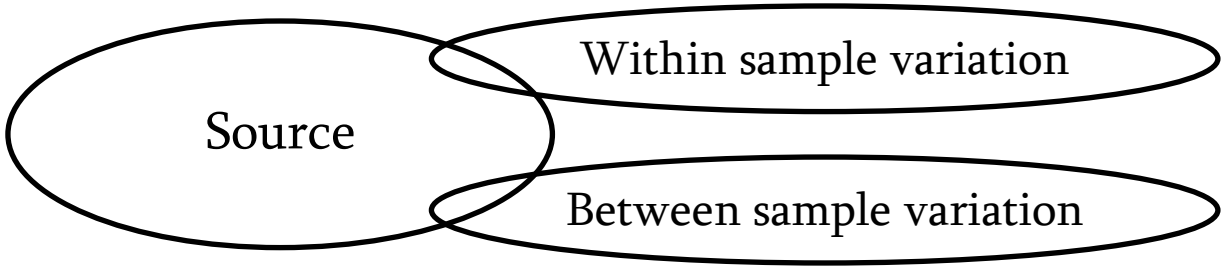
Case of alleged digital penetration of the vagina

"It is unrealistic to examine a field of science of this kind only by reference to published papers. A court in determining whether there is a sufficiently reliable scientific basis for expert evidence to be given ……will be entitled to take into account the experience of experts"

"*If one tries to question science purely by reference to published papers and without the practical day-to-day experience upon which others have reached their judgement, the attack is likely to fail"*

This ruling is important in it provides clarity about what information an expert can utilize i.e. it does not necessarily have to be in a published and peer reviewed journal. It rightly places strong emphasis on practical competence over academic scholarship

Source Level Propositions



$$\frac{\Pr(E \mid Hp, I)}{\Pr(E \mid Hd, I)}$$

Hp: The paint came from the suspect's green car

Hd: The paint did not come from the suspect's green car but came from some other car

Let us say the paint matches in colour/composition so E is the matching colour/composition of the control and transferred paints

For Hp - interested in the variation in the analyses of paint from the suspects green car (Within sample variation)

For Hd - interested in the variation of paint from green cars (Between sample variation)

Source Level Propositions

Hp: The paint came from the suspect's green car

If Hp is true what is the probability the paint samples would 'match'?

If the paint truly came from the suspect car then I would expect to find the <u>same match (Pr1)</u> every time - based on the basis there are no processing errors giving rise to a sample switch and a different result

BUT

When might you see variation from a Pr > 1?

$$\Pr(E \mid Hp, I) = 1$$

Source Level Propositions

Hd: The paint did not come from the green car but came from some other car

If Hd is true what is the probability the paint samples would 'match'?

If it is accepted the green paint has been transferred to it as a result of the accident, we need to know what proportion of cars whose paint is the same colour and has the same chemical composition - 'f'

How would you approach this task?

$$\Pr(E \mid Hd, I) = f$$

Source Level Propositions

$$LR = \frac{\Pr(E \mid Hp, I)}{\Pr(E \mid Hd, I)} = \frac{1}{f}$$

LR >1 supports for the prosecution proposition

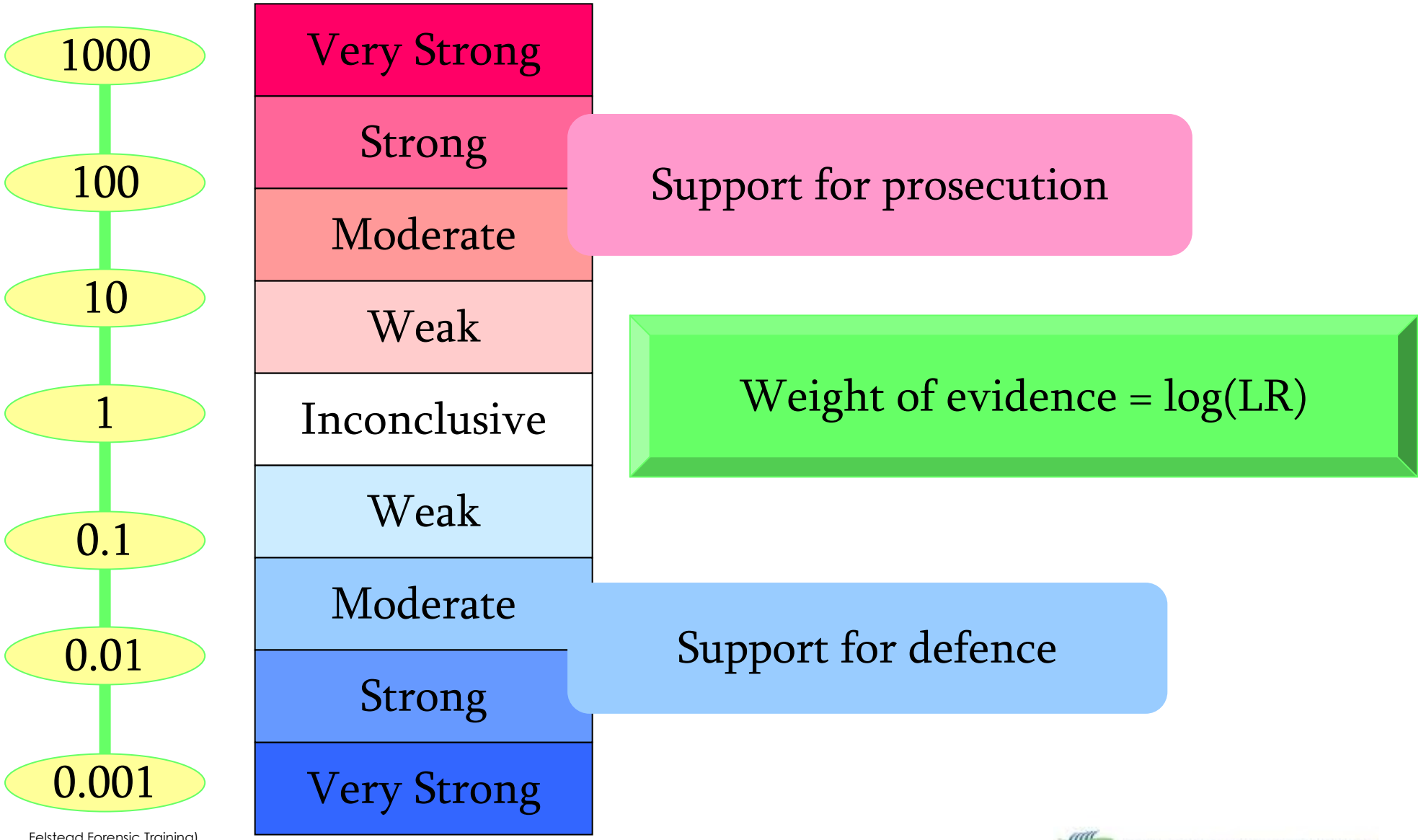
LR <1 supports for the defence proposition

What does an LR of 1 mean?

If, for example, 'f' were 0.05 the LR would be 20

On this basis, the scientific findings are 20 times more likely to occur if Hp were true rather than if Hd were true and we would say the scientific findings support Hp

Can we assign any weighting to this support for Hp to assist the jury?



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Activity Level Propositions

Need to consider the probability of:

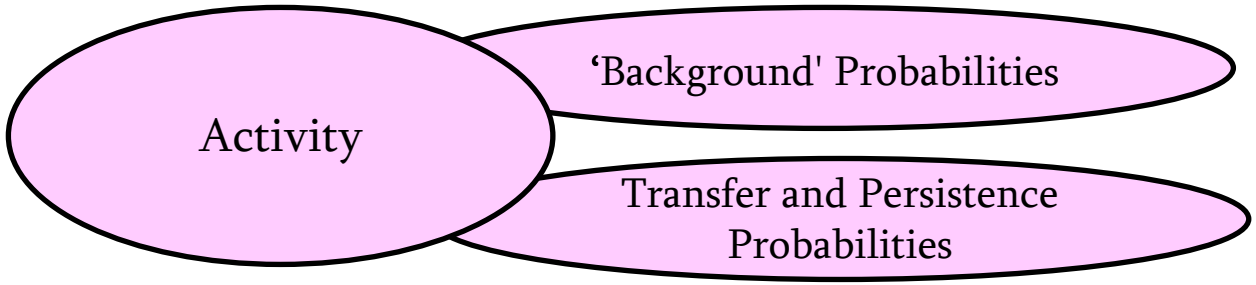
Transfer (t)

Persistence (p)

Detection (d)

$$LR = \frac{t \times p \times d \times analytical \,|\, Hp, I}{t \times p \times d \times analytical \,|\, Hd, I}$$

Activity Level Propositions



$$\frac{\Pr(E \mid Hp, I)}{\Pr(E \mid Hd, I)}$$

Hp: The suspect broke the shop window

Hd: The suspect did not break the shop window but struggled with a youth running from the shop

Interested not only in the source of any matching glass fragments but also:

Number of fragments

Morphology of fragments

Distribution of fragments

R v T Court of Appeal Ruling (26.10.10)

Identify the issues raised by the judgement

Debate their potential impact on the UKCJS

Provide suitable advice to practitioners

R v T Court of Appeal Ruling - The Issues

Issues around the use of Bayesian Inference and FSS Footwear Database in the evaluation of forensic science evidence, specifically footwear mark comparisons

"It is clear that likelihood ratios have been used in other areas of expertise by forensic experts when expressing their conclusions. We are solely concerned in this appeal with the use in relation to footwear mark evidence"

BUT

Other statements were more general in nature and appear to offer guidance beyond footwear mark evidence and might be used as persuasive authority in cases involving other evidence types

R v T Court of Appeal Ruling- Other statements

"We do not agree with the observations of the Regulator, that a similar approach is justified in all areas of forensic expertise. Each area requires a separate analysis because of the differences that there are in the nature of the underlying data "

"An approach based on mathematical calculations is only as good as the reliability of the data used. The acceptance of a mathematical approach to the calculation of a match probability in DNA cases is based on the reliability of the statistical database, though an element of judgement is required"

*"It is quite clear therefore that outside the field of DNA (*and possibly other areas where there is a firm statistical base*), this court has made it clear that Bayes' Theorem and likelihood ratios should not be used…*

"In our judgement, an expert footwear mark examiner can therefore in appropriate cases use his experience to express a more definite evaluative opinion where the conclusion is that the mark 'could have been made' by the footwear" (R v T Court of Appeal Ruling)

R v T - Background

The appellant was tried for murder with the forensic discipline under scrutiny being footwear mark identification

Comparison of footwear marks recovered from a murder scene with a pair of Nike training shoes found at the appellants house some considerable time after arrest

In accordance with FWM Best Practice the comparison was based on four criteria:

Sole pattern

Size

Degree of wear

Presence or otherwise of any of damage

R v T - Footwear Mark Comparison

- Sole pattern/Size of the training shoes were a match to the marks at the scene (5 &10)
  Sole pattern was one of the most frequently encountered on Nike training shoes

- The training shoes were more worn than those that made the marks (1)
  Might be explained by use in the period between deposition of the mark and recovery of the training shoes (an unknown)

- Marks from the scene indicated possible damage to the training shoes not found on those from the appellants house (<1)
  Caused by artefact on the floor? Area of damage worn away by subsequent use?
  Caused by a stone lodged in tread pattern but subsequently lost?

"Unlikely the correspondence between the marks and the training shoes was attributable to coincidence"……."Moderate scientific evidence to suggest the appellants training shoes had made the marks found at the scene"

In cross-examination "it was a possible another pair of shoes "could have" left the marks"

R v T - Grounds for Appeal

A review of the scientist's case papers revealed the use of Likelihood Ratios to form their evaluative opinion

The scientist had made no reference to this application in their report (Non-disclosure)

Concern was also raised the figures used in the LR calculation were unreliable on the basis the FSS Footwear Reference Collection did not reflect a perfectly representative sample of the total shoe dataset

The defendant's appeal was allowed

R v T - FSS Footwear Reference Collection

Recommendations from FSP FWM Principal Scientist

- Do not use figures for pattern frequency/number encountered over a stated period
- Use verbal expression of commonality of pattern explaining it is based on personal experience ("Informed Opinion") and/or reference to the Footwear Reference Collection "In my experience, and by reference to the Footwear Reference Collection, the pattern on these shoes is commonly encountered in …"

<u>Unaffected by the judgement</u>

Identifying the tread pattern of a crime mark and possible uppers relating to the footwear

Statement/Report would most likely contain details of its use

Assisting with the assessment of size, mould and wear variations

Disclosing the reference collection has been used for this purpose using The Expert's Index of Unused Material

The Issue of Disclosure

Introductory paragraph in interpretation section of an evidential statement where LR calculations have been used or exist in a case file

"The evaluation of the evidence has included assigning numerical probabilities to the findings given that the prosecution proposition is true and given that the defence proposition is true. The ratio of these two probabilities has been considered in determining which proposition, if any, the findings support and to what extent. The values of these probabilities have been assigned using my personal judgement. This judgement is based on experience, expertise and, where available, relevant data. These values, and the source of any data used in assigning them, are available for inspection on the case file"

R v T - Expert's Index of Unused Material

The Expert's Index of Unused Material should include a section entitled Likelihood Ratio calculations

EXPERT'S USE			CPS/RCPO USE	
No	Description of material	Location	Insert C, I or CND	Comment
9	LIKELIHOOD RATIO CALCULATIONS, Probability estimates, Sources of data	Case file		

In cases where the value of the LR has been considered in words alone, it is expected the interpretation section of the statement should already reflect this approach and further disclosure is not necessary. The reference to LR calculations should therefore be omitted from the Expert's Index of Unused Material

R v T - Wider Implications

Advice offered by eminent legal counsel employed by the FSS was forensic practitioners should not change what they consider to be Best Practice

BUT

Be transparent in statements making it clear where numerical values have been used, where those numbers have come from and any limitations of any database used

If the court the chooses to exclude this information (and the evidence) then so be it

Pre-trial hearings should be used to explore the basis of expert opinions, resolve any differences and openly expose potential issues aligned with the ruling

Expert Opinion - Key Standards

Establish the key issue in the case

Consider the available information

Request additional information where necessary

Agree with the customer on the key issue to be addressed

Identify relevant propositions

Pre-assessment

Identify potential outcomes

Assign estimated probabilities

Estimate Likelihood Ratios

Commissions examinations to best progress the issue

Expert Opinion - Key Standards

Documentation (On the case file)

The key issue/propositions addressed

Potential outcomes

Sources of data used in assigning probabilities

Examination strategies

Discussions with customers/other experts

Reports

Conditioning information

Propositions addressed

Items received and examined

Significant findings and conclusions

Strength of evidence expressed as LR or verbal scale related to LR

Disclosure paragraph

My personal views

Evaluation of forensic science evidence invokes reasoning in the face of uncertainty

Probability theory (LR) providing the only coherent and logical foundation for assisting the court in establishing the weight that should be assigned to the observations

Offer an "Informed Opinion"

BUT

Re-evaluate in light of new information

AND

Recognise the importance of concession

AND

Be open and honest

People will always disagree because they have their own opinion

It is for the jury to decide and our role is to assist them in that decision-making

Has someone been assaulted?

What injuries, if any, might the wearer have sustained?

How many people, if any, might be involved?


Has someone been assaulted?
What injuries, if any, might the wearer have sustained?
How many people, if any, might have been involved?

T-Shirt - Found on canal towpath

Observations - Inference - Opinion
Bleeding injuries to head/neck (> the left side)
Spattered blood > upper front Possible blows to the head/Cast off
Possible blood mixed with mucus Possible exhaled blood
No obvious downward drips on lower front Possibly not upright when bleeding

Observations - Inference - Opinion
(Adidas) In dirt Sole compression (Stamping/Walking/Running)on Front/Back
(Reebok) - In dirt Sole compression (Stamping/Walking/Running) on Back
(Nike) - In blood Sole compression (Stamping/Walking/Running)

Investigative Report

Additional Information

Naked body, now identified as Mr. Pickles, recovered from scrubland approximately 300 yards from where T-shirt was found

Preliminary PM

- Victim died from blunt force trauma to the head, face and upper body
- Extensive lacerations to the facial area and bruising on the front and back of the body
- Bruising on the face and body appears to take the form of footwear marks

Enquiries uncovered witnesses who stated they saw a number of men stamping on Mr. Pickles outside a night club close to the canal

Mr. Onions has been arrested and items of clothing and footwear recovered from his home address has been submitted for laboratory examination

Mr. Onions admits being at the scene of the assault on Mr. Pickles but denies stamping on the Mr. Pickles

Shoe from 'Nike' man (Evidential Statement)

Hp 0.99
LR 1 (<>Hp/Hd)
Hd 0.99

Hp 0.01
LR 1 (<>Hp/Hd)
Hd 0.01

Blood

No Blood

Hp 0.8
LR 80 (>Hp)
Hd 0.01

Hp 0.2
LR 1/5 (>Hd)
Hd 0.99

Contact staining - Sole/Uppers
Forced into arch/tread pattern on sole

Contact staining - Sole/Uppers
Not forced into arch/tread pattern on sole

Hp 0.99
LR 2 (<>Hp/Hd)
Hd 0.5

Hp 0.01
LR 1/50 (>Hd)
Hd 0.5

Spattered staining - Sole/Uppers

No spattered staining - Sole and uppers

Hp

Mr. Onions stamped on Mr. Pickles

Hd

Mr. Onions did not stamp on Mr. Pickles but admits being at the scene of the assault

LR 160

LR 1.6

0.02

Evidential Statement

Felstead Forensic Training

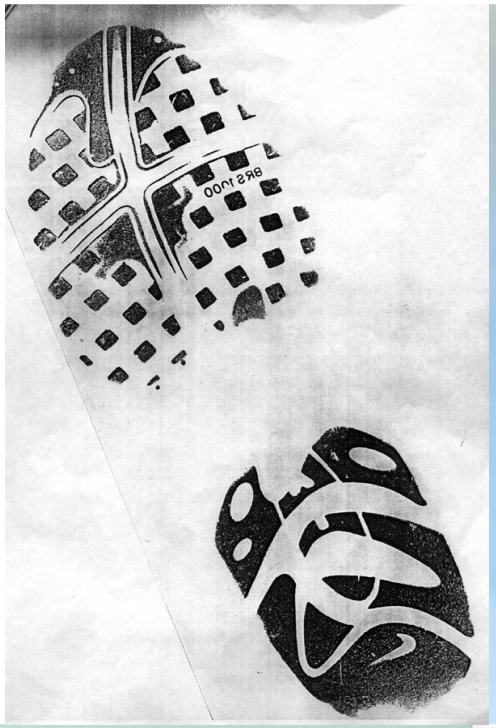
‘Nike’ man’

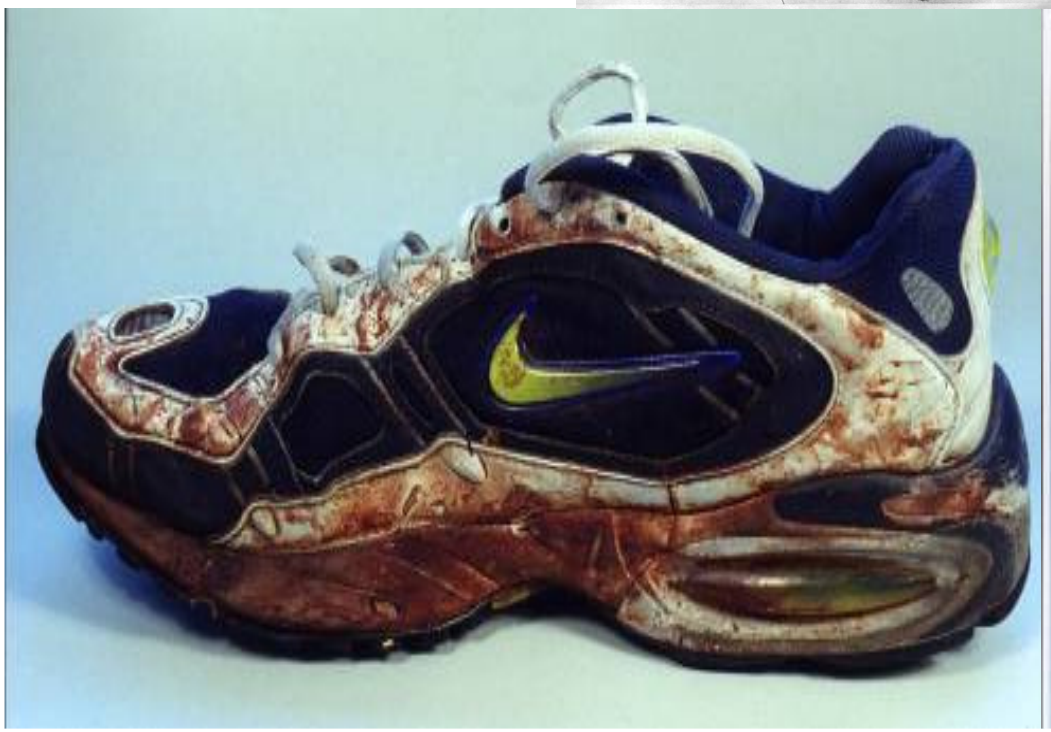
Hp

Mr. Onions stamped on Mr. Pickles

Hd

Mr. Onions did not stamp on Mr. Pickles but admits being at the scene of the assault





Glass Case Study - Background Information

Male is seen to break a shop window and remove jewellery from the display

Man fitting the description was arrested two streets away 20 minutes after the incident

Jumper seized and packaged 90 minutes after the incident

Customer Request
Examine the suspect's jumper for glass and if any found compare with the glass from the pane

Any questions?

Additional information
Witness states window was broken by man hitting it several times who then reached through, grabbed items and ran off

Window was laminated. The with the damage comprised of a hole about 8 inches across

Suspect states he did not break the window but struggled with a youth running from the scene

The suspect has been charged with theft

Glass Case Study - The Issue

Is the suspect the man who stole the watches?

Can the forensic scientist help in addressing this issue?

Activity level

Did the suspect break the shop window?

Would this be of more value to the UKCJS?

Source level

Does any glass found on the suspects jumper originate from the broken pane?

Would this meet the UKCJS requirement?

Glass Case Study - Activity Level

Hp: The suspect broke the shop window
Hd: The suspect did not break the shop window but struggled with a youth running from the scene

Assess (broadly) the **expected LR** given Hp and Hd and searching the outside surface of the suspect's jumper using the following outcomes:

- ❑No matching glass
- ❑Some matching glass (0-5 fragments)
- ❑Lots of matching glass (>5 fragments)

But what else might you need to consider before examining the jumper?

- ❑Physical characteristics of any glass fragments recovered
- ❑Distribution on the clothing of any glass fragments recovered

Case study - Glass (Expectations)

Hp: The suspect broke the shop window
Hd: The suspect did not break the shop window but struggled with a youth running from the scene

Outside surface of the suspect's jumper