

Postgraduate Diploma in IT Forensics

Week 10 of Module 5: Collecting Digital Evidence and Presentation in Court

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16 May 2019

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1 Prologue

1.1 Help

- Blue means I am a link; please click me.

1.2 Contact info

- Personal email
 - hayson.tse

1.3 Copyright

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1.4 Classroom Conduct

- HKU SPACE Handbook
 - Unauthorised reservation of seats is not permitted.
 - Eating or drinking is not allowed.
 - All mobile phones and pagers are to be turned off.
 - Smoking is prohibited at all HKU SPACE learning centres and the University campus.
 - No video / audio recording is allowed, except with the permission of the Programme Director / Manager, and is subject to any conditions stipulated when such permission is granted.

- Personal belongings should not be left unattended.

1.5 Important dates

- EXAMINATION: 6 June 2019 (7 pm to 9:10 pm)

1.6 Disclaimer

- All materials come from the public domain. No government or trade secrets.
- Newspaper clippings may or may not contain the complete sets of allegations in relation to a case.
- A person who has been reported by newspaper clippings as being arrested or charged is presumed innocent until he is convicted or even until his appeal against conviction is dismissed.

2 Affidavit evidence

2.1 Affidavit evidence

- [Practice Direction 10.1](#)
- [Order 41](#) of the Rules of the High Court

2.2 Practice direction 10.1

- Marking

1. At the top right hand corner of the first page of every affidavit, and also on the back-sheet, there must be written in clear permanent dark blue or black marking:

the party on whose behalf it is filed;
the name of the deponent;
the number of the affidavit in relation to the deponent; and
the date when sworn.

For example: 2nd Dft: WONG TK: 3rd: 8.8.88.

- Binding

2. Affidavits must not be bound so as to hamper filing.

- Exhibits: Markings generally

3. Where space allows, the directions under para.1 above apply to the first page of every

exhibit.

- Documents other than letters
4. Clearly legible photographic copies of original documents may be exhibited instead of the originals, provided the originals are made available for inspection by the other parties before the hearing and by the judge at the hearing.
- ...
- Paging of documentary exhibits
6. Any exhibit containing several pages must be paged consecutively at centre bottom.
- ...
- Exhibits bound up with affidavit
8. Exhibits must not be bound up with or otherwise attached to the affidavit itself (O.41 r. 11 (i)).
- ...

2.3 Form of affidavit

- Order 41 rule 1

“(1) Subject to paragraphs (2) and (3), every affidavit sworn in a cause or matter must be entitled in that cause or matter.”

“(2) Where a cause or matter is entitled in more than one matter, it shall be sufficient to state the first matter followed by the words “and other matters”, and where a cause or matter is entitled in a matter or matters and between parties, that part of the title which consists of the matter or matters may be omitted.”

“(3) Where there are more plaintiffs than one, it shall be sufficient to state the full name of the first followed by the words “and others”, and similarly with respect to defendants.”

“(4) Every affidavit must be expressed in the first person and, unless the Court otherwise directs, must state the place of residence of the deponent and his occupation or, if he has none, his description, and if he is, or is employed by, a party to the cause or matter in which the affidavit is sworn, the affidavit must state that fact. In the case of a deponent who is giving evidence in a professional, business

or other occupational capacity the affidavit may, instead of stating the deponent's place of residence, state the address at which he works, the position he holds and the name of his firm or employer, if any."

"(5) Whether or not both sides of the paper are used, the printed, written or typed sides of the paper of every affidavit must be numbered consecutively."

"(6) Every affidavit must be divided into paragraphs numbered consecutively, each paragraph being as far as possible confined to a distinct portion of the subject."

"(7) Dates, sums and other numbers must be expressed in an affidavit in figures and not in words."

"(8) Every affidavit must be signed by the deponent and the jurat must be completed and signed by the person before whom it is sworn."

"(9) Where any affidavit has been interpreted to the deponent before being sworn it shall contain a statement to that effect, state the name and address of the person who interpreted it, and be signed by him."

2.4 Document to be used in conjunction with affidavit to be exhibited to it

- Order 41 rule 11

"(1) Any document to be used in conjunction with an affidavit must be exhibited, and not annexed, to the affidavit."

"(2) Any exhibit to an affidavit must be identified by a certificate of the person before whom the affidavit is sworn. The certificate must be entitled in the same manner as the affidavit and rule 1(1), (2) and (3) shall apply accordingly."

3 Standards

3.1 Enhanced Competency Framework on Cybersecurity for banking practitioners

- Hong Kong Monetary Authority
- Launch of Cybersecurity Fortification Initiative by HKMA at Cyber Security Summit 2016 (dated 18 May 2016)
- HK Monetary Authority Enhanced Competency Framework on Cybersecurity dated 19 December 2016
- HK Monetary Authority Cybersecurity Fortification Initiative dated 21 December 2016

3.2 Enhanced Competency Framework on Cybersecurity (ECF-C) for banking practitioners

- CSX Fundamentals Certificate
- CSX Practitioner Certificate (CSX-P)
- GIAC Information Security Professional (GIAC GISP)

- GIAC Security Essentials (GSEC)
- ISC² Systems Security Certified Practitioner (SSCP)
- CSX Specialist Certificate (CSX-S)
- CSX Expert Certificate (CSX-E)
- ISACA Certified Information Systems Auditor (CISA)
- ISACA Certified Information Security Manager (CISM)
- ISACA Certified in Risk and Information Systems Control (CRISC)
- ISACA Certified in the Governance of Enterprise IT (CGEIT)
- ISC² Certified Information Systems Security Professional (CISSP)
- ISC² Certified Cloud Security Professional (CCSP)

3.3 Cyber Resilience Assessment Framework (C-RAF)

- Inherent Risk Assessment (End-September 2017)
- Maturity Assessment (End-September 2017)
- Intelligence-led Cyber Attack Simulation Testing (iCAST) (End-June 2018)

3.4 List of equivalent qualifications

- C-RAF Assessor
 - ISACA's Certified Information Systems Auditor (CISA);
 - (ISC)²'s Certified Information Systems Security Professional (CISSP);
 - ISACA's Certified Information Security Manager (CISM);
 - ISACA's Certified in Risk and Information Systems Control (CRISC);
 - ISACA's Cybersecurity Fundamentals Certificate (CSX-F) and Cybersecurity Nexus Practitioner certification (CSX-P); or
 - China Information Technology Security Evaluation Centre's Certified Information Security Professional - Hong Kong (CISP - HK).
- iCAST Manager
 - HKIB's CCASP – Certified Simulated Attack Manager;
 - CREST Certified Simulated Attack Manager;
 - GIAC Penetration Tester (GPEN) and GIAC Exploit Researcher and Advanced Penetration Tester (GXPN); or
 - Offensive Security Certified Expert (OSCE) and Offensive Security Exploitation Expert (OSCE).
- iCAST Specialist
 - HKIB's CCASP – Certified Simulated Attack Specialist;
 - CREST Certified Simulated Attack Specialist;
 - GIAC Penetration Tester (GPEN) and GIAC Exploit Researcher and Advanced Penetration Tester (GXPN); or
 - Offensive Security Certified Expert (OSCE) and Offensive Security Exploitation Expert (OSCE).
- iCAST Tester
 - for professional who performs IT infrastructure testing
 - * HKIB's CCASP – Certified Infrastructure Tester;

- * CREST Certified Infrastructure Tester;
- * GIAC Penetration Tester (GPEN); or
- * Offensive Security Certified Expert (OSCE).
- for professional who performs web application testing
 - * HKIB's CCASP – Certified Web Applications Tester;
 - * CREST Certified Web Applications Tester;
 - * GIAC Web Application Penetration Tester (GWAPT); or
 - * Offensive Security Web Expert (OSWE).

3.5 Recognised UK degrees

- Recognised bodies
 - The UK authorities recognise those institutions which have been granted degree-awarding powers by either a Royal Charter, Act of Parliament or the Privy Council. These are known as 'recognised bodies'. All UK universities and some higher education colleges are recognised bodies.
 - [Schedule](#) to The Education (Recognised Bodies) (England) (Order) 2013
- Listed bodies
 - Other institutions, which do not have the power to award their own degrees, may provide full courses which lead to a degree of a recognised body. These are known as 'listed bodies'
 - [Schedule](#) to The Education (Listed Bodies) (England) Order 2013

3.6 NCSC certified degrees

- United Kingdom National Cyber Security Centre (NCSC)
- UK is implementing the [EU directive on the security of Networks and Information Systems](#) (known as the NIS Directive). The [NIS Guidance Collection](#) now includes the Cyber Assessment Framework (CAF).
- The deadline for member states transposing the Directive into domestic legislation is 9 May 2018.
- [NCSC-certified degrees \(8 May 2018\)](#)
- Full certification
- Provisional certification

3.7 Full certification:

University	Degree
University of Birmingham	MSc in Cyber Security
Cranfield University	MSc in Digital Forensics
Edinburgh Napier University	MSc in Advanced Security and Digital Forensics (FT, PT, DL)
Lancaster University	MSc in Cyber Security
University of Oxford	MSc in Software and Systems Security

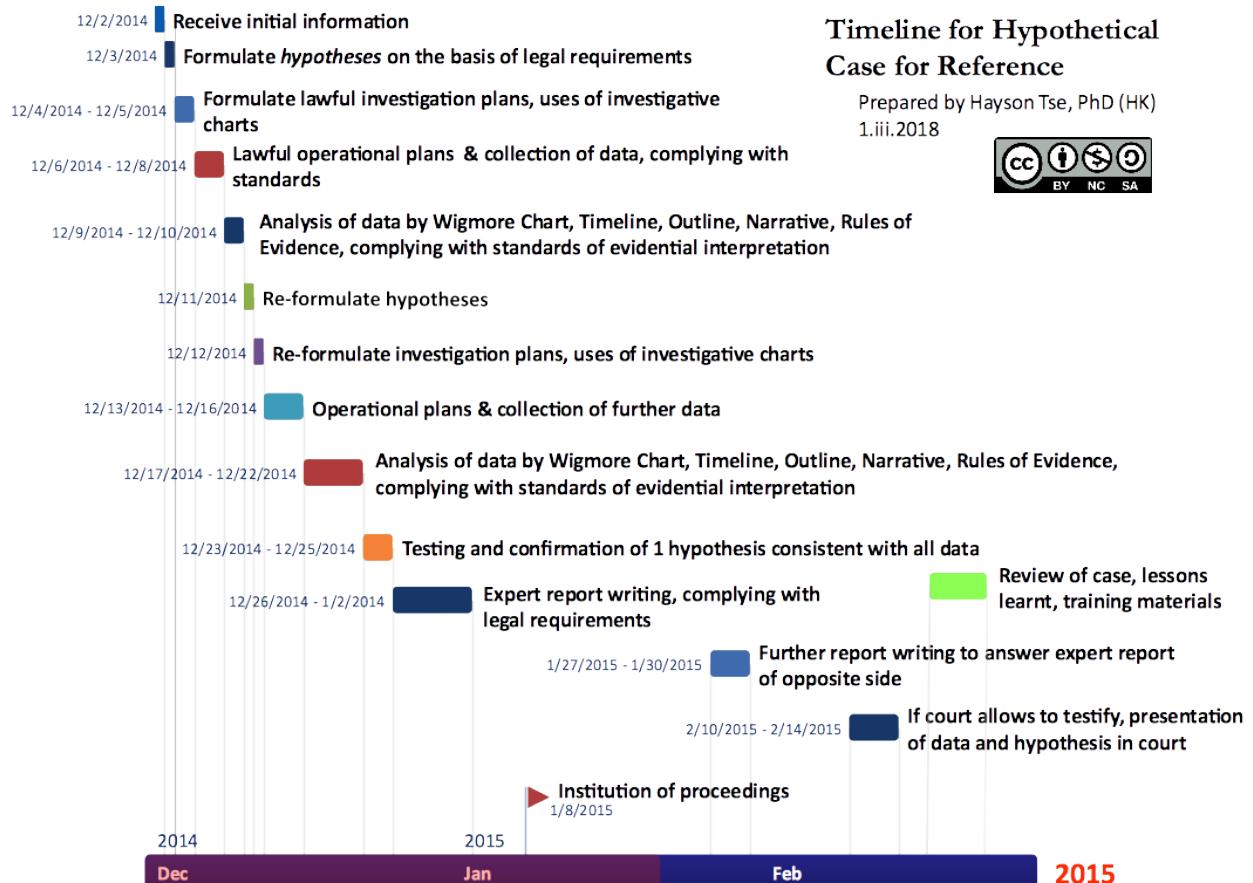
University	Degree
Royal Holloway, University of London	MSc in Information Security
Royal Holloway, University of London, and the University of London International Academy	MSc in Information Security (DL)
Queen's University Belfast	MSc Applied Cyber Security
University of Southampton	MSc in Cyber Security
University of South Wales	MSc in Computer Forensics
University of Surrey	MSc in Information Security
University College London	MSc in Information Security
University of Warwick	MSc in Cyber Security and Management
University of York	MSc in Cyber Security

3.8 Provisional certification:

University	Degree
Abertay University	MSc Ethical Hacking and Cyber Security
University of Bradford	MSc Cyber Security
Cranfield University	MSc in Cyber Defence and Information Assurance
De Montfort University	MSc Cyber Security
De Montfort University	MSc Cyber Technology
University of Kent	MSc in Cyber Security
University of Kent	MSc in Cyber Security with Industrial Placement
Kingston University	MSc in Network and Information Security (Cyber Pathway)
Oxford Brookes University	MSc Computer Science for Cyber Security
University of Warwick	MSc in Cyber Security Engineering
University of the West of England	MSc Cyber Security
Royal Holloway, University of London	Integrated Master's degree (MSci) in Computer Science (Information Security)
University of Southampton	Integrated Master's degree (MEng) in Computer Science with Cyber Security
Royal Holloway, University of London	BSc Computer Science (Information Security)
University of Warwick	BSc Cyber Security (from October 2018)

4 Week 1

4.1 Overview of your work cycle



- Receive initial data
- Formulate *hypotheses* on the basis of legal requirements
- Formulate lawful investigation plans (uses of investigative charts)
- Carry out lawful operational plans & collection of data, complying with standards
- Analyse data by Wigmorean Chart, Timeline, Outline, Narratives, Rules of Evidence, complying with standards of interpretation
- Re-formulate hypotheses
- Carry out lawful operational plans & collection of data, complying with standards
- Analyse data by Wigmorean Chart, Timeline, Outline, Narratives, Rules of Evidence, complying with standards of interpretation
- Testing of 1 *hypothesis consistent with all data*
- Expert report writing, complying with legal requirements
- Institution of proceedings

- Further report to answer expert report of opposing party
- Testifying in court, presentation of data and hypothesis in court
- Review of case, lessons learnt, training materials

4.2 Mission (im)possible

- Angel, the secretary of the Chairman of the board of directors summonsed you by telephone to go to the penthouse-office of the Four Seasons Resort Hualalai to meet the Chairman. You went there and met Angel. She told you the Chairman was having a meeting and could not see you. The Chairman told her to tell you that you were his best man. He want you to meet Dr No, the Chairman of the TRUSH Holdings Limited in Jamaica. Angel had already arranged your flights and hotel. She said the CEO told you to take good care of the wish of Dr No. She also told you to report to her once you have a preliminary view of the work to be done. She would prepare a Computer Forensic Service Agreement for TRUSH and the Chairman to sign.
- You went to Jamaica alone. At the appointed time (the first day upon arrival), you met Dr No and his secretary, Sarah.
- Dr No said nothing, whilst Sarah said:

“Good morning, Dr/Mr/Ms/Mrs/Miss Hunt. Your mission, should you choose to accept it, involves . . .”

- In summary, she told you:
 - Oliver Harrison was the Chief Executive Officer of TRUSH. Oliver would be your point of contact. He would call you.
 - The staff members in connection with your investigation were: Christina Hogan, Cody Stephenson and Kent Blair.
 - Christian received unsolicited love emails and WeChat messages repeatedly from Kent. She read those emails with her mobile phone.
 - Ten days ago, Christian had received an e-mail from Kent that redirected her to download a nude picture of the lower parts of a male.
 - Christian complained to Oliver verbally. Oliver then asked Dr No for permission to commission a consultant to investigate. Oliver did not wish to seek help from the IT Department. Dr No told Oliver to contact the Chairman of Apotequil.
 - Christian gave her mobile phone to Oliver. Sarah gave it to you.
- At the middle of the night on the second day, you went to the headquarters building of TRUSH. You brought along some digital tools. Oliver met you in a quiet place outside the building. He took you to walk past the security without checking. Oliver told you that all staff members had left the building except the security. He opened the locked office of Kent. You saw a Panasonic DMC-FX3 camera on Kent's desk. You “examined” the camera and “cloned” the contents of its storage device.
- Then Oliver opened the locked office of Cody. You “examined” Cody's office computer and “cloned” the contents of its storage device. When you finished cloning, it was almost 5 a.m. in the morning (the third day).

- On the third day, Oliver met you in a restaurant for lunch. You were surprised to find Cody with him. He told you to interview Cody. You interviewed Cody and he denied he had made the nude photograph.
- On the fourth day, you were waiting express delivery from Apotequil of certain digital tools. You decided that after you “investigated” the cloned copies with the new tools, you would report to Angel. So, meanwhile, you went to have a drink in a local bar. A stranger approached you and told you that he was working in TRUSH. He further told you that Christina, Cody and Kent had falsified company accounts to boost the Company’s profits to increase their commissions.
- On the fifth day, you called Oliver and told him your encounter with the stranger. Soon, Oliver called you back and told you that TRUSH had been publicly listed in Jamaica in 2000. He further told you that TRUSH had raised over US\$ 1 billion during its initial public offering, i.e. first sale of stock. Five years later, a third-party analyst evaluated the share value. The assessment jumped from a single-digit Price-Earning Ratio (P/E) to a double-digit P/E. TRUSH published a profit of US\$ 183 million in 2016 and US\$ 291 million in 2017. He also told you that after your interview with Cody, rumours of the internal investigation were circulating within the company.
- Oliver told you to take the opportunity to investigate any misconduct of Christina, Cody and Kent. Oliver said he would decide whether or not to report any crime to the Jamaica police after receiving your investigation report. He would decide whether or not to summarily dismiss Christian, Cody and Kent. He asked you to meet him at midnight outside the headquarters building of TRUSH again. He would take you to investigate the office computers of Christina, Cody and Kent. He would also take you to the server rooms of TRUSH. He told you all computers were connected to the server.

4.3 Purpose of investigation process

- Dr D. Kim Rossmo

“The criminal investigation process plays an important and special role in countries governed by the rule of law. Its function is to seek the truth, without fear or favour. That task, integral to both public safety and justice concerns, must be conducted in an unbiased and professional manner. If it is not, the result is unsolved crimes, unapprehended offenders, and wrongful convictions.”

4.4 Sally Clark

- 5 defence experts against 1 prosecution expert

“The speculation is that the jury did not understand the medical evidence and took soundbites, reaching a majority decision on the disbelief that “lightning could strike twice” - plus the ...statistics from Professor Meadow, a paediatrician not an epidermologist,” - [Oliver A J Norman](#)

4.5 Article 50 Criminal Procedures Law of the PRC (14 March 2012 amended)

- Article 43 renamed as Article 50

"Judges, procuratorial personnel and investigators shall adhere to statutory procedures when gathering and obtaining evidence that may prove whether criminal suspects or defendants are guilty or innocent, or whether cases involve serious criminal offences or not. They are strictly prohibited from extorting confessions by torture, collecting evidence through threats, enticement, deception or other unlawful means, or forcing anyone to provide evidence proving his/her own guilt. They shall ensure that all citizens who are involved in a case or who have information about the circumstances of a case can furnish all available evidence in an objective manner and, except under special circumstances, may ask such citizens to provide assistance in investigation."

4.6 Article 53 Criminal Procedures Law of the PRC (14 March 2012 amended)

- Article 46 renamed as Article 53 and amended.

"All cases shall be judged according to the principles that emphasis shall be laid on evidence, investigation and research, while credence shall not be readily given to oral statements. A defendant cannot be found guilty and sentenced to criminal punishments if there is no evidence other than his/her own statement. On the other hand, a defendant may be found guilty and sentenced to criminal punishments even without his/her own statements, as long as there is sufficient and concrete evidence."

"Evidence shall be deemed to be sufficient and concrete if the following conditions are satisfied:"

- “(1) There is evidence for each fact that serves as the basis for conviction and sentencing;”
- “(2) The authenticity of evidence used for deciding the case has all been confirmed in accordance with statutory procedures; and”
- “(3) Based on the comprehensive assessment of all evidence for the case, *the ascertained facts have been proved beyond reasonable doubt.*”

- Before amendment: the phrase “sufficient and reliable” is used.

4.7 Why prove beyond reasonable doubt in criminal trial?

- Richard A. Posner, "An Economic Approach to the Law of Evidence," 51 Stanford Law Review 1477 (1999)

"To see how accuracy in fact-finding relates to deterrence, notice that the expected cost of punishment ...is actually the difference between the expected cost of punishment if one commits a crime ...and the expected cost of punishment if one does not commit a crime ... The more accurate the process of determining guilt is, the less random punishment will be, and so the greater will be the law's deterrent effect. To put this point differently, greater accuracy in the determination of guilt increases the returns to being innocent. The point is not limited to criminal law. It applies to all areas of law in which deterrence of unlawful behavior is an important objective. It shows what a good investment, expenditures on evidence can be."

4.8 Wrongs in the profession

"Investigation delayed is justice denied." Casey, E., M. Ferraro, et al, Journal of Forensic Sciences 54(6): 1353 - 1364

"This click button expertise poses a challenge to legal rules governing the reliability of an expert's methodology and the underlying data." John J. Barbara, Handbook of Digital and Multimedia Forensic Evidence, Springer, page 129, line 14.

4.9 Postulation of hypotheses

- Some hypotheses are checked and are immediately rejected by cursory observations
- Some hypotheses will stand until completion of laboratory observations
- The ideal is to eliminate all but one conceivable sequence of events as being consistent with all the material evidence, observations and evidence from witnesses: Chisum and Turvey, Crime Reconstruction, 7th edition, pages 216 & 217.

4.10 Criminal Investigation

- UK School of Policing

"rigorous search for material to bring an offender to justice."

"An investigation conducted by police officers with a view to it being ascertained whether a person should be charged with an offence, or whether a person charged with an offence is guilty of it." Code of Practice to the Criminal Procedure and Investigations Act 1996 (CPIA)

4.11 Power and extent of seizure

- United Kingdom judicial review case of *R v. Chesterfield Justices and Chief Constable of Derbyshire ex parte Bramley* [2000] QB 576 that led to the Criminal Justice and Police Act 2001.
- The *Bramley* case made clear that the Police and Criminal Evidence Act 1984 does not entitle the United Kingdom police to seize material for the purposes of sifting it elsewhere or to seize the remaining part of the larger collection.

4.12 Ethics

“the goodwill and cooperation of victims, witnesses and the community”
“investigations should be conducted with integrity, common sense and sound judgement”
“heavy-handed, discriminatory or disproportionate actions risk losing cooperation and any future criminal proceedings”
“effective investigators maintain a balance that recognises the concerns of all the parties involved”
“understanding the response to crime assists investigators to build this relationship”
“a professional approach to investigations benefits the victim, the public and the police”

4.13 Investigative skills

“the planning required to conduct an investigation and the investigative process”
“decision making and how it can be improved by applying the investigative mindset”
“investigative and evidential evaluation (which can assist the investigator to determine the value of material gathered during the investigation)”
“creative thinking”
“challenging experts”
“victim and witness care”

4.14 Admissibility and sufficient of data

“It is the duty of prosecutors to make sure that the right person is prosecuted for the right offence, and to bring offenders to justice. Casework decisions made fairly, impartially and with integrity help to deliver justice for victims, witnesses, defendants and the public.”

“Prosecutors must be satisfied that there is sufficient evidence to provide a realistic prospect of conviction against each suspect on each charge. They must consider what the defence case may be, and how it is likely to affect the prospects of conviction. A case which does not pass the evidential stage must not proceed, no matter

how serious or sensitive it may be."

4.15 PEACE

- High profile wrongful conviction cases in the United Kingdom (e.g., the Guildford Four, the Birmingham Six)
- Snook, Et al. Reforming Investigative Interviewing in Canada. *Canadian Journal of Criminology and Criminal Justice*, Volume 52, Issue 2, 2010, pages 215 - 229.
- In 1984 Britain introduced the Police and Criminal Evidence Act of 1984 (PACE) and the Codes of Practice for police officers which eventually resulted in a set of national guidelines on interviewing both witnesses and suspects, composed of five distinct parts (corresponding to the acronym "PEACE"):
 - P-E-A-C-E
 - Preparation and Planning: Interviewers are taught to properly prepare and plan for the interview and formulate aims and objectives.

"Interviewers consider how information obtained from an interview will contribute to an ongoing investigation; they learn as much as possible about the interviewee; they create a list of investigative objectives; and they take the time to make all practical arrangements associated with conducting the interview. Officers also develop a timeline of events, prepare the opening question and subsequent questions based on an analysis of existing evidence, create an outline of how they will proceed (a "route map"), and plan for all eventualities (such as a no-comment interview)." (Snook, Et al.)

- Engage and Explain: Rapport is established with the subject, and officers engage the person in conversation.

". . . First, the interviewer engages the interviewee in conversation and, second, the interviewer explains what will happen during the interview. An interviewer engages the interviewee by personalizing the interview and continuously acting in a professional and considerate manner. . . . The interviewers ensures that the interviewee understands the purpose of the interview, delivers the required police cautions in a manner that ensures the interviewee understands his or her legal rights, and identifies exhibits that will be addressed later in the interview. They also explain the route map, outline the various practical routines that will be followed, and establish expectations and ground rules." (Snook, Et al.)

- Account: Officers are taught two methods of eliciting an account from the interviewee:
 - Cognitive Interview: used with cooperative suspects and witnesses.
 - Conversation Management: recommended when cooperation is insufficient for the cognitive interview techniques to work.

“. . . This framework involves asking an initial open-ended question that elicits a free narrative of the event in question. . .” (Snook, Et al.)

“The initial open-ended question is designed to elicit as much reliable and accurate information as possible by providing the interviewee with an opportunity to give an uninterrupted, personal account of the event or events being investigated. . .” (Snook, Et al.)

“. . . After the interviewee completes the free narrative, the interviewer identifies topics from the narrative and probes the account. . .” (Snook, Et al.)

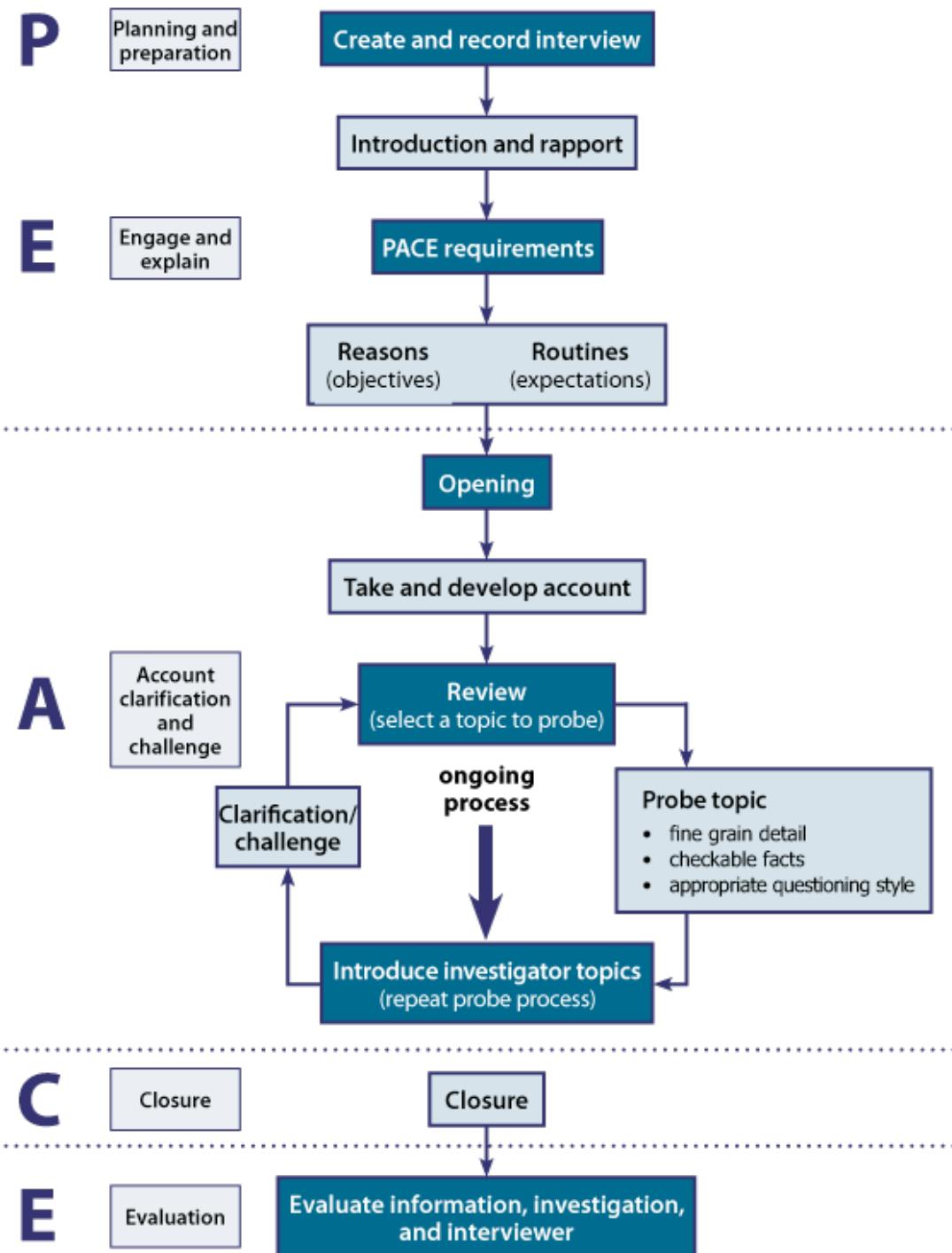
“To identify topics, the interviewer listens carefully to the interviewee’s account and notes points of interest (e.g., persons, locations, actions, and times) that can be pursued later in the interview. Once a seemingly complete account has been provided, the interviewer explores each of the identified topics through the systematic process of “opening, probing, and summarizing.” The interviewer opens up a topic through the use of an open-ended question – that is, a question starting with a word like tell, explain, or describe – and then probes the account with questions starting with who, what, where, when, and how. After all the necessary probing has been done, the interviewer summarizes all the information obtained about that particular topic. This opening, probing, and summarizing is repeated until the interviewer is satisfied that all the topics identified from the interviewee’s free narrative have been explored sufficiently. Using the same systematic process, the interviewer then asks questions about topics that did not arise from the interviewee’s account but that were prepared beforehand.” (Snook, Et al.)

- Closure: The officer summarizes the main points from the interview and provides the suspect with the opportunity to correct or add information.

“Interviewers following PEACE recognize when to end an interview, maintain a courteous and professional manner, and ensure they ask all of their questions. They check that the interview objectives have been achieved, summarize the main points of interviewees’ statements, provide the interviewee with the opportunity to correct or add any information, and explain what will happen in the future. . . .” (Snook, Et al.)

- Evaluate: Once the interview is finished, the information gathered must be evaluated in the context of its impact on the investigation.

“. . . Interviewers also consider the effect of new information on the investigation and how the information is consistent with all of the available investigative evidence. Interviewers are encouraged to conduct self-evaluations of their performances, and supervisors are taught to provide constructive feedback as part of routine or interviewer-requested performance evaluations.” (Snook, Et al.)



- UK College of Policing explaining PEACE Model and witness interview
- Witness interview strategy

"This should be developed at an early stage in the investigation. An interview adviser can assist in developing a witness interview strategy . . ."

"Setting objectives - these should be meaningful and realistic, particularly in the case of vulnerable, intimidated and significant witnesses."

"Selecting interviewers (you) - staff selected should be competent to the appropriate tier." (brackets added)

"Briefing interviewers (you) - they should be informed of their roles as soon as possible and given time to plan and prepare." (brackets added)

"Investigators must be properly prepared. Any notes that are made must be retained, as the prosecution (plaintiff) may need to disclose any unused material." (brackets added)

"The interviewer should ensure that the witness statement accurately reflects what the witness has said."

"Debriefing the interviews – if required, they should be debriefed to establish the information obtained, how the account fits in with other available material, whether any action needs to be taken and what further enquiries are necessary."

"Supplementary interviews – these should only take place when they are essential for the purpose of eliciting additional information or clarifying contradictory information of significance to the investigation. Consideration should be given to whether holding such an interview would be in the witness's best interest. . . . The reason for conducting supplementary interviews should be recorded."

4.16 The golden question

"Recognize and delineate assumptions, inference chains, and points of uncertainty; always ask, "How do we know what we think we know?"'" Dr D. Kim Rossmo

5 Week 2

5.1 Computer Forensic Examination and Analysis Model and Flow Diagram

- The Digital Forensic Examination Key Laboratory of the Hubei University of Police created a Computer Forensic Examination and Analysis Model and Flow Diagram

Working environment (工作环境)	Legal Bases (法律依据)	Supervision of Chain of Exhibits (证据链的监督)
	Forensic Examination Requirements (鉴定要求)	
	Collection of examination Targets and Cloning (检材接收与克隆)	
	Formulate Forensic Examination Plan (制定鉴定方案)	
	Time Analysis, Space Analysis, Structure Analysis, Module Analysis (时间分析,空间分析,结构分析,粒度分析)	
	Function Analysis, Relation Analysis, Data Analysis, Codes Analysis (功能分析,相关分析,数据分析,代码分析)	
	Forensic Examination Conclusion (鉴定结论)	
	Court Appearance (出庭)	
	Legal Qualifications of Personnel and Institution (人员和机构的法律资质)	

Computer Forensic Examination and Analysis Model and Flow Diagram
(计算机取证与分析鉴定的模型和流程)

Digital Evidence Examination Key Laboratory, Hubei University of Police
(湖北警官学院电子取证重点实验室)

5.2 Elements of Hubei Model and Flow Diagram

- Legal bases
- Forensic examination requirements
- Collection of examination targets and cloning
- Formulate forensic examination plan
- Time analysis, space analysis, structure analysis, module analysis
- Function analysis, relation analysis, data analysis, codes analysis
- Forensic examination conclusion
- Court appearance
- Legal qualifications of personnel and institution
- Working environment
- Supervision of chain of exhibits

5.3 Chapter 2 Ethical standards and professionalism

- Common elements within a code of ethics are:
 - Work in accordance to any local, state, provincial, or government laws
 - Work within company policies, if this applies
 - Be honest and impartial
 - Remain objective

- Maintain the highest standard of morals and ethics
- Have and maintain integrity
- Provide truthful and accurate reports
- Respect the inherent dignity of all people
- Be diligent
- Be ethical in soliciting business
- Never disclose confidential information
- Never knowingly cause harm
- Accept no illegal or improper remuneration for services rendered
- Refrain from representing competing or conflicting interests or the perception of conflicting interests
- Support the purposes and objectives of the profession
- Refrain from negative comment about other interviewers
- Why are ethical standard so critical for investigative interviewers?
 - Values define who you are
 - Ethics come into play when external pressures push someone to act in a manner that is not consistent with his or her values
 - A code of ethics provides a commonly held set of guidelines that will provide a consistent, value-driven basis for judging what is right or wrong in any given situation and establishes the outer limits of acceptable behavior.

5.4 Examples of code of conduct

- [Code of Ethical Conduct](#) for the Security Professionals Australasia

5.5 Conflict of interest

- Questions to ask to avoid a conflict of interest
 - Do you have a personal relationship with the person you will be interviewing or another person who has an interest in the case?
 - Do you have any financial relationship with the person you will be interviewing?
 - Is this case somehow related to another organization you are working with?
 - Do you have a professional relationship to another person or organization that is associated in any way to the case you are working on?
 - Do you have any personal or professional bias that would make others question your ability to handle this case fairly and ethically?
 - Would you personally benefit in any way from conducting interviews for this case?
 - Have you had any direct knowledge of policies or practices that would affect the interviews you are about to do?
 - Have you already formed an opinion on this case?

5.6 Meaning of “forensic”

- Forensic Science
 - What is science? See Richard Feynman's explanation.

- The National Academy of Sciences (2008)

“The use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process.”

- Stephen Jay Gould (1997)

“The net of science covers the empirical universe: what is it made of (fact) and why does it work this way (theory).”

- The US Supreme Court (1993) in *Daubert v. Merrell* 509 U.S. 579 (1993)

“Science is not an encyclopedic body of knowledge about the universe. Instead, it represents a process for proposing and refining theoretical explanations about the world that are subject to further testing and refinement. But, in order to qualify as ‘scientific knowledge,’ an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation — i.e., ‘good grounds,’ based on what is known. In short, the requirement that an expert’s testimony pertain to ‘scientific knowledge’ establishes a standard of evidentiary reliability.”

5.7 Reasoning with evidence

- Reasoning is interaction of:
 - Law of evidence
 - Reasoning with rules of law
 - Science of proof
 - Common sense reasoning about the facts of the case

5.8 Law of evidence

- Rules that determine what evidence may be used (relevancy)
- Admissibility
 - Hearsay is not admissible

5.9 Science of proof

- Sources of evidence
- Common sense reasoning about the facts using sources of evidence and common sense rules. (Generalizations on how the world usually works. A witness sometimes speaks the truth.)

5.10 Types of sources

- Witness testimony
- Documents
- Generalizations on how the world usually works

5.11 John Henry Wigmore (1863 - 1943) & thereafter

- Mass of evidence v. fact to be proved (determine the effect of a mass of evidence on a probandum, a fact that is to be proved)
- Structure and visualise (a way to structure and visualize this mass of evidence and the corresponding inferences)
 - Determine the effect of a mass of evidence on a probandum, a fact that is to be proved
- A way to structure and visualize this mass of evidence and the corresponding inferences
- Chart Method: Inference charts from evidence to probanda
- Compared with Narrative Method: Stories about the facts
- After Wigmore
 - Science of Proof was neglected
 - Science of proof becomes Evidence Theory
 - Revival of the Science of Proof in about 1980's
 - New Evidence Theorists: Anderson, Schum, Tillers, Twining

5.12 The Wigmorean chart method

"The Wigmorean chart method is a form of flowchart, mapping the issues, evidence and inferences, using numbered symbols and connecting lines, with a separate key explaining the issue, evidence or inference represented by each symbol. Its logic is binary, with every proposition tending support or undermine the ultimate issue."

"There are a number of tasks in drafting a chart. Some should be completed before starting the chart, others while drafting it. It is a fluid process."

"The primary task is to identify the issues. Normally there will be an ultimate issue one or more necessary sub-issues."

"Then the evidence must be organised and considered for its probative value towards the ultimate issue, via the sub-issue(s). This is achieved by analysing each supposed piece of evidence "into all its subordinate inferences"."

"The chart distinguishes facts as alleged from facts as believed." "The method is to make necessary and reasonable inferences from each fact." "The chart can illustrate the issues, pieces of evidence, inferences, weakening and strengthening inferences, and supposed general truths being used in support of a particular inference."

5.13 Methods of Science of Proof

- Modified Wigmorean Analysis
- Simpler charts
- Combine charts with outlines, narratives, lists
- Use computer sense-making systems to order, structure and visualize evidence and inference
- Use other techniques to determine effect of mass of evidence on probandum
- Bayesian Probability Calculations
- A combination of the above

5.14 Murphy on Evidence

- Ricard Glover. Murphy on Evidence, 14th Edition. Oxford University Press. Chapter 1. Introduction to the Law of Evidence.

5.15 What is evidence

“Most lawyers and students think of evidence as a collection of rules governing what facts may be proved in court, what materials may be placed before the court to prove those facts, and the form in which those materials should be placed before the court. What they have in mind is the law of evidence, but not evidence itself. One of the curiosities of the common law is the emergence of rules of evidence whose purpose is not to enable a party to bring before the court evidence which might help his case, but to prohibit a party from bringing some kinds of evidence if his opponent objects, or even if the court itself refuses to permit it.” (Murphy)

“...there is a whole field of inquiry which relates to evidence itself, rather than the law of evidence. The field is a fascinating mixture of logic, epistemology, sociology, psychology, and the forensic sciences, and is, therefore, wide enough to encompass a vast library of its own. Its concern is the use of evidence as material in the reconstruction of past events.” (Murphy)

“...John Henry Wigmore, the dean of American evidence writers, required his students to master the science of evidence before turning to law (a luxury now foreclosed by the tyranny of practice-based syllabi and examinations) and developed a thorough, though cumbersome system for the methodical analysis of evidence to be presented in court.” (Murphy)

“Evidence may be defined in general terms as any material which has potential to change the state of a fact-finder’s belief with respect to any factual proposition which is to be decided and which is in dispute. In more formal terms, Achinstein defines evidence as follows: evidence E is potential evidence on hypothesis H if and only if (1) E is true; (2) E does not make H necessary; (3) the probability of H on E is substantial; and (4) the probability of an explanatory connection between H and E is substantial.” (Murphy)

5.16 Principal characteristics of judicial trials

- 5 characteristics of a judicial trial, which distinguish that process from historical and other inquiries
 - Issues defined narrowly
 - Time limit
 - Adversarial contests
 - Evaluations of standards and burdens of proof
 - Jury

5.17 Issues defined narrowly

“(a) The parties define for the court what the issues to be inquired into are. Legal proceedings are commenced by a party. The court has no power to bring matters before itself, and must wait to be seised of a case by a party. The parties then further define the issues which the court is to resolve, and once the issues are defined, both the court and the parties must confine their investigation to them. Procedurally, the issues are reflected in the statements of case or indictment. They are narrow and precisely defined, and may exclude much material which a historian would feel bound to consider in exploring the entire history of an event.” (Murphy)

5.18 Time limits

“(b) Legal disputes must be resolved within a reasonable time and at reasonable expense. The outcome of a judicial trial determines the rights and obligations of the parties, and may result in loss of life or liberty, loss of financial resources, of parental rights over children, or of reputation. There is no possibility of a detached, academic inquiry. Time limits are an integral part of the trial process, and the parties’ preparation of the case must be accomplished within the time limits established.” (Murphy)

5.19 Not objective

“(c) Trials are not objective inquiries into past events, but adversarial contests, in which parties, who have a vital interest in the outcome, not only decide what evidence they wish to present and prevent from being presented, but also present the evidence in as persuasive a manner as possible, a manner calculated to win them the sympathy and support of the court. Each party also seeks to persuade the court, by means of partisan, persuasive argument, to interpret the evidence in a light favourable to his case.” (Murphy)

5.20 Evaluations of standards and burdens of proof

“(d) A judicial trial is not a search to ascertain the truth of the past events inquired into, but to establish that a version of what occurred has an acceptable probabil-

ity of being correct. It is in the nature of human experience that it is impossible to ascertain the truth of past events with absolute certainty. Nonetheless, a historian or a journalist is entitled to set his own standard of probability, which may correspond to truth as closely as he wishes. A court accepts predetermined standards of probability, which depend not on the facts of the individual case, but on the type of case under consideration. The highest standard of proof demanded by a common law court in any circumstances is proof beyond reasonable doubt. This is a high standard but falls well short of absolute certainty. This standard is demanded only of the prosecution on the issue of guilt in a criminal case; in all other cases, the standard is that of the balance of probability, i.e. that the event is more likely than not to have occurred as alleged. In relation to many secondary issues, an even lower standard is employed, that there is some evidence capable of supporting the proponent's version of the event (a *prima facie* case)." (Murphy)

5.21 Jury

"(e) To the extent that juries are employed as triers of fact, the above considerations are compounded. Juries consist of laymen and women who have no training in the evaluation of evidence, and who are more likely to be swayed by partisan persuasive argument than those with professional experience of evidence." (Murphy)

5.22 Phipson on Evidence

- Phipson on Evidence 18th edition (December 2013)

5.23 Classification of evidence

- No wholly satisfactory classification of the various forms of evidence (Phipson, paragraphs 1-10 to 1-18)
 - Direct evidence: "testimony of a witness as to any matter that he perceived by way of any of his own senses (excluding opinion)".
 - Circumstantial evidence: "facts from which another fact or series of facts relevant to the case might be inferred or deduced".
 - Real evidence: "evidence produced in court upon which the court is asked to reach conclusion on basis of its own perception and not that of witnesses directly or indirectly reported to it. They include material objects, tests and examinations of material objects, views of a locality outside the court which is relevant to the proceedings, the appearance of persons and the demeanour of witnesses."
- * Physical things and objects are dealt with under the heading of real evidence.

5.24 Facts in issue

"Facts in issue, which are sometimes called "principal" facts, are those necessary by law to establish the claim, liability or defence, forming the subject matter of the proceedings; and which are in dispute between the parties. In civil cases,

the court may give directions about the issues on which it requires evidence.” (Phipson, paragraph 7-02)

5.25 Facts relevant to the issue

“Facts relevant to the issue, which are sometimes called “evidentiary” facts, are facts which *tend, either directly or indirectly, to prove or disprove a fact in issue.*” (Phipson, paragraph 7-03)

5.26 Relevant and admissibility

“In deciding whether evidence is admissible, to ask first whether the evidence is relevant and, thereafter, whether there are any rules or discretions, based on convenience or policy, which nonetheless make this relevant evidence inadmissible.” (Phipson, paragraph 7-05)

5.27 Relevance: tests and scope

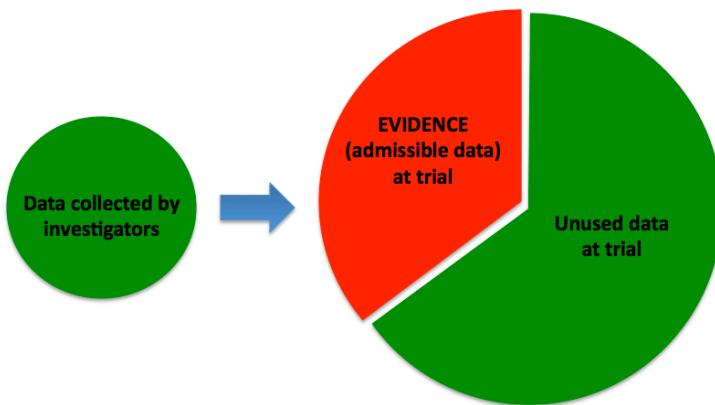
“The evidence that is relevant in a proceeding is evidence that, if it were accepted, could rationally affect (directly or indirectly) the assessment of the probability of the existence of a fact in issue in the proceeding.” - section 55(1) of the Evidence Act 1995 (Commonwealth) (Phipson, paragraph 7-09)

5.28 Weight of evidence

“For weighing evidence and drawing inferences from it, there can be no canon. Each case presents its own peculiarities and in each common sense and shrewdness must be brought to bear upon the facts elicited.”

“The weight of evidence depends on rules of common sense.” (Phipson, paragraph 7-17)

5.29 Admissibility



"Rules governing what facts or information may be placed before a court to prove a fact in issue, the manner in which that fact in issue may be proved and the degree of cogency that the evidence must have in order that the court may determine that fact has been proved."

- *Evidence is admissible if a court may properly receive and consider it for the purpose of determining a fact in issue.*

5.30 Relevancy and probability

"A judge ...had to decide whether the evidence is capable of increasing or diminishing the probability of the existence of a fact in issue. The question of relevancy is typically a matter of degree to be determined ...by common sense and experience. Forensic science is science used for the purpose of law. It includes basic research to applied technology." - Science and Technology Committee 7th Report of Session - 2005, Forensic Science on Trial, paragraph 4.

5.31 Tests of admissibility

- Is it relevant?
- Are there any other rules of evidence which may exclude the evidence?
- Discretion to exclude evidence?
- Determination of issues of admissibility of evidence

"The issue of admissibility of evidence is a matter of law and is for the trial judge to determine. The issue normally arises when one of the parties to the proceedings objects to the admissibility of the evidence. But, even if there is no objection to the admissibility of the evidence from the parties, where a judge considers that an

item of evidence is clearly inadmissible, he should raise the issue with the parties and, if necessary, rule the evidence inadmissible." (Phipson, paragraph 7-05)

5.32 Discretion to exclude evidence

- Objective: ensure that a fair trial of the accused took place
- The prejudicial effect of the evidence outweighs its probative value
- The evidence has been obtained in breach of constitutional protections;
- The evidence has been obtained by a trick.

5.33 Challenges to evidence

- Evidence must be authentic, accurate, and complete for it to pass any standard of weight:
- Weight is a measure of the validity and importance.
- Admissible
- Authentic: Does the material come from where it purports?
- Accurate and reliable
- Complete: Is the story that the material purports to tell complete? Are there other stories that the material also tells that might have a bearing on the legal dispute or hearing?
- Convincing to Juries (Believable): Can the substance of the story and the material tells be believed and is consistent?
- In conformity with common law and legislative rules (admissible)

6 Week 3

6.1 Types of questions

- Closed questions
 - "Closed, or closed-ended, questions are specific, offering a limited number of possible responses. Yes-or-no questions and multiple-choice questions are types of closed questions."
 - ""Narrow questions can inhibit the development of rapport"
- Open questions
 - "Open, or open-ended, questions start with who, where, what, when, how, or why."

6.2 An example of questioning techniques

Sennewald and Tsukayama. The Process of Investigation: Concepts and Strategies for Investigators in the Private Sector, 4th Edition. Elsevier. Chapter 9

- An example of building on the initial admission of merchandise theft by a warehouse employee, for instance, would probably unfold as follows:

Employee: OK. You've got me anyhow. I put the carton of computer tablets in my trunk just before I locked up for the night.

Interrogator: What prompted you to do that?

Employee: I just needed the money.

Interrogator: How much did you get for the carton?

Employee: A thousand dollars cash.

Interrogator: Who gave the thousand dollars?

Employee: A guy named Willie. Don't ask me his last name 'cause I don't know.

Interrogator: Did you know Willie was willing to buy before you took the carton, or did you take the carton and then look for a buyer?

Employee: Willie and me already had talked about it. In fact, it was his idea for me to get the tablets because he said they're easy to sell.

Interrogator: When did you turn the carton over to him?

Employee: That same evening, over behind Lucciani's delicatessen. I gave him the box and he gave me the money.

Interrogator: What did he do with the carton, once he had it?

Employee: Well, he took all the individual boxes out and put them on his shelf. He has shelves in his van, kind of like a store.

Interrogator: A van, like a store?

Employee: Yeah, He's got a step-in van, you know, kind of like a converted parcel delivery truck.

Interrogator: Does he actually use it to sell from?

Employee: Oh, sure. In fact, later that evening, several customers in Lucciani's came out the back door, and two of them bought a tablet. He's got all kinds of things, like Levi's, sweaters. One time, he had lugs of tomatoes. Never has the same stuff twice. Lots of people know Willie.

Interrogator: What does he look like?

Employee: (describes Willie)

Interrogator: What does the van look like?

Employee: (describes the van)

Interrogator: Would you be willing to work with us, and deliver more merchandise to Willie?

Employee: Are you kidding? He'd kill me even if he knew I was just telling you about him. No way, man. No way!

Interrogator: He won't find out from us you're talking to us.

Employee: God, I hope not. I'm sure your guys or the police will get him, but keep me out of it. Fact is, I'm surprised he gets away with what he does. Everyone knows Willie.

Interrogator: How did you ever make this arrangement anyhow, the arrangement to deliver a carton of tablets to him?

Employee: He asked me where I worked. Then one thing led to another, and you know the rest.

Interrogator: How did you come to meet him?

Employee: I bought a leather jacket from him, from his van.

Interrogator: When was that?

Employee: Just after last Christmas.

Interrogator: Where was the van then?

Employee: Sitting behind Mullin's gas station. He's there a lot.

Interrogator: If I saw his van there tomorrow afternoon, could I buy something?

Employee: Not in the afternoon. He only works at night. Besides, he'd be suspicious of you 'cause he doesn't know you.

Interrogator: How does one get to know Willie?

6.3 Hearsay Definition

"Evidence of a statement made to a witness by a person who is not himself called as a witness may or may not be hearsay. It is hearsay and inadmissible when the object is to establish the truth of what is contained in the statement. It is not hearsay and is admissible when it is proposed to establish by the evidence, not the truth of the statement, but the fact that it was made. The fact that a statement was made, quite apart from its truth, is frequently relevant in considering the mental state and conduct thereafter of the witness or of some other person in whose presence the statement was made."

- Hearsay means a statement that:
 - was made by a person (the declarant) other than a witness;
 - is offered in evidence at the proceeding to prove the truth of its content; *and*
 - is a written, non-written or oral communication which was intended to be an assertion of the matter communicated.
- Witnesses should testify as to their own perceptions: e.g. can testify that X spoke (if that fact is relevant), but cannot testify as to the content of what X said (even if that's relevant)
- Rationale: reliability and fairness

6.4 Read and understand the 2 examples in the Supplementary Notes dated 13 April 2019.

6.5 Section 22A of the Evidence Ordinance (Chapter 8)

- section 22A(1)
- section 22A(11)
- section 22A(2)(c)(i) & (ii)
- section 22A(3)(d)
- section 22A(12)
- section 22A(5)
- section 22A(6)

6.6 Section 22A(1) & (11) of the Evidence Ordinance (Chapter 8)

“(1) Subject to this section and section 22B, a statement contained in a document produced by a *computer* shall be admitted in any criminal proceedings as *prima facie* evidence of any fact stated therein if-”

“(a) direct oral evidence of that fact would be admissible in those proceedings; and”

“(b) it is shown that the conditions in subsection (2) are satisfied in relation to the statement and computer in question.”

“(11) Nothing in this section affects the admissibility of a document produced by a computer where the document is tendered otherwise than for the purpose of proving a fact stated in it.”

6.7 Section 22A(3) of the Evidence Ordinance (Chapter 8)

- (One type of persons)

“(3) Notwithstanding subsection (1), a statement contained in a *document* produced by a computer used over any period to store, process or retrieve information for the purposes of any activities (the relevant activities) carried on over that period shall be admitted in any criminal proceedings as *prima facie* evidence of any fact stated therein if-”

“(a) direct oral evidence of that fact would be admissible in those proceedings;”

“(b) it is shown that no person (other than a person charged with an offence to which such statement relates) who occupied a responsible position during that period in relation to the operation of the computer or the management of the relevant activities-”

“(i) can be found; or”

“(ii) if such a person is found, is willing and able to give evidence relating to the operation of the computer during that period;”

“(c) the document was so produced under the direction of a person having practical knowledge of and experience in the use of computers as a means of storing, processing or retrieving information; and”

“(d) at the time that the document was so produced the computer was operating properly or, if not, any respect in which it was not operating properly or was out of operation was not such as to affect the production of the document or the accuracy of its contents;”

“but a statement contained in any such document which is tendered in evidence in criminal proceedings by or on behalf of any person charged with an offence to which such statement relates shall not be admissible under this subsection if that person occupied a responsible position during that period in relation to the operation of the computer or the management of the relevant activities.”

- (Another type of persons)

“(2) The conditions referred to in subsection (1)(b) are-”

“(a) that the computer was used to store, process or retrieve information for the purposes of any activities carried on by any body or individual;”

“(b) that the information contained in the statement reproduces or is derived from *information supplied* to the computer in the course of those activities; and”

“(c) that while the computer was so used in the course of those activities-”

“(i) appropriate measures were in force for preventing unauthorized interference with the computer; and”

“(ii) the computer was operating properly or, if not, that any respect in which it was not operating properly or was out of operation was not such as to affect the production of the document or the accuracy of its contents.”

6.8 Section 22A(4) of the Evidence Ordinance (Chapter 8)

- (One computer)
- “(4) Where over a period the function of storing, processing or retrieving information for the purposes of any activities carried on over that period was performed by computer, whether-”
- “(a) by a combination of computers operating over that period; or”
- “(b) by different computers operating in succession over that period; or”
- “(c) by different combinations of computers operating in succession over that period; or”
- “(d) in any other manner involving the successive operation over that period, in whatever order, of one or more computers and one or more combinations of computers,”
- “all the computers used for that purpose whether by one or more persons or bodies during that period shall be treated for the purposes of this section as constituting a single computer.”

6.9 Section 22A(5) of the Evidence Ordinance (Chapter 8)

- (Computer certificate)
- “(5) Subject to subsection (6), in any criminal proceedings where it is desired to give a statement in evidence by virtue of this section, a certificate-”
- “(a) identifying the document containing the statement and describing the manner in which it was produced, and explaining, so far as may be relevant in the proceedings, the nature and contents of the document;”
- “(b) giving such particulars of any device involved in the production of that document as may be appropriate for the purpose of showing that the document was produced by a computer;”
- “(c) dealing with any of the matters to which the conditions mentioned in subsection (2) relate,”

"and purporting to be *signed* by a person occupying a responsible position in relation to the operation of the relevant device or the management of the relevant activities (whichever is appropriate) shall, on its production without further proof, be admitted in those proceedings as *prima facie* evidence of any matter stated in the certificate; and for the purposes of this subsection it shall be sufficient for a *matter to be stated to the best of the knowledge and belief* of the person stating it."

6.10 Section 22A(6) of the Evidence Ordinance (Chapter 8)

- (14 days notice)

"(6) Unless the court otherwise orders, a certificate shall not be admitted in evidence under subsection (5) unless 14 days' notice in writing of the intention to tender such certificate in evidence, together with a copy thereof and of the statement to which it relates, has been served—"

"(a) where the certificate is tendered by the prosecution, on the defendant (or, if more than one, on each defendant) or his solicitor;"

"(b) where the certificate is tendered by a defendant, on the Secretary for Justice," "but nothing in this subsection shall affect the admissibility of a certificate in respect of which notice has not been served in accordance with the requirements of this subsection if no person entitled to be so served objects to its being so admitted."

6.11 Section 22A(7) of the Evidence Ordinance (Chapter 8)

- (May still be required to testify)

"(7) Notwithstanding subsection (5), a court may (except where subsection (3) applies) require oral evidence to be given of any of the matters mentioned in subsection (5)."

6.12 Section 22A(8) of the Evidence Ordinance (Chapter 8)

- (Offence)

"(8) Any person who in a certificate tendered in evidence under subsection (5) makes a statement which he knows to be false or does not believe to be true shall be guilty of an offence and shall be liable on conviction to a fine of \$50,000 and to imprisonment for 2 years."

6.13 Section 22A(12) of the Evidence Ordinance (Chapter 8)

- (computer for the purpose of section 22A only)

“(12) Subject to subsection (4), In this section “computer” means any device for storing, processing or retrieving information, and any reference to information being derived from other information is a reference to its being derived therefrom by calculation, comparison or any other process. (Subsection (4) provides the conditions under which a combination of computers shall be treated as a single computer.) (brackets added)”

6.14 The Interpretation and General Clauses Ordinance (Chapter 1)

- Section 2: Application

“(1) Save where the contrary intention appears either from this Ordinance or from the context of any other Ordinance or instrument, the provisions of this Ordinance shall apply to this Ordinance and to any other Ordinance in force, whether such other Ordinance came or comes into operation before or after the commencement of this Ordinance, and to any instrument made or issued under or by virtue of any such Ordinance.”

“(1A) The inclusion of the substance of a provision of this Ordinance in another Ordinance does not imply the exclusion of the application of any other provision of this Ordinance to the other Ordinance.”

- Section 3: Interpretation of words and expressions

““document” means any publication and any matter written, expressed or described upon any substance by means of letters, characters, figures or marks, or by more than one of these means;”

6.15 Section 22B of the Evidence Ordinance (Chapter 8)

- Provisions supplementary to sections 22 and 22A

“(4) In sections 22 and 22A and this section document, copy and statement have the same meaning as in Part IV.”

6.16 Section 46 of the Evidence Ordinance (Chapter 8)

- Interpretation

“(1) In this Part (Part IV: sections 46 to 55B), unless the context otherwise requires—(brackets added)”

““copy”, in relation to a document, means anything onto which information recorded in the document has been copied, by whatever means and whether directly or indirectly;”

““document” means anything in which information of any description is recorded;”

““statement” means any representation of fact or opinion, however made.”

6.17 Section 22B of the Evidence Ordinance (Chapter 8)

- Provisions supplementary to sections 22 and 22A

“(1) Where in any criminal proceedings a statement contained in a document is admissible in evidence by virtue of section 22 or 22A, it may be proved by the production of that document or (whether or not that document is still in existence) by the production of a copy of that document or of the material part thereof.”

- Draw inference from the document

“(2) Where in any criminal proceedings a statement contained in a document is admitted in evidence by virtue of section 22 or 22A, the court may draw any reasonable inference from the circumstances in which the statement was made or otherwise came into being or from any other circumstances, including the form and contents of the document in which the statement is contained.”

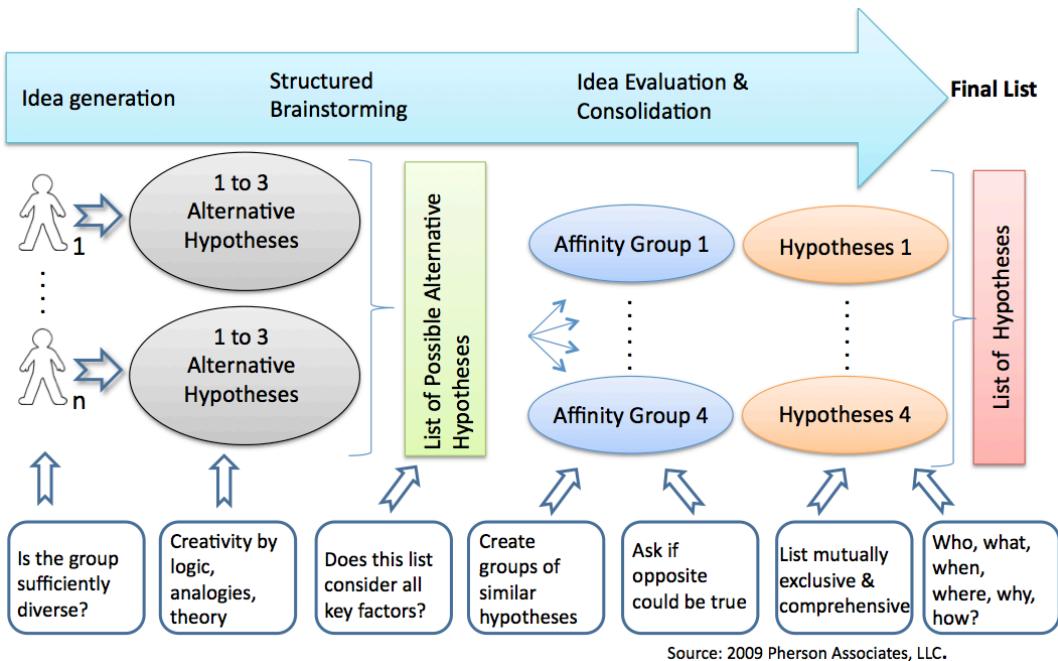
“(3) In estimating the weight, if any, to be attached to a statement admitted in evidence by virtue of section 22 or 22A, regard shall be had to all the circumstances from which any inference can reasonably be drawn as to the accuracy or otherwise of the statement and, in particular—

“(a) ...”

“(b) in the case of a statement falling within section 22A, to the question whether or not the information which the information contained in the statement reproduces or is derived from was supplied to the relevant computer, or recorded for the purpose of being supplied to it, contemporaneously with the occurrence or existence of the facts dealt with in that information, and to the question whether or not any person concerned with the supply of information to that computer, or with the operation of that computer or any equipment by means of which the document containing the statement was produced by it, had any incentive to conceal or misrepresent the facts.”

6.18 Generate Hypotheses for Analysis

- Simple Hypotheses Generation



6.19 Analysis of Competing Hypotheses (ACH)

		H1	H2	H3	H4
		Suicide	Accident	Killed by rival in love	Killed by rival in business
	Weighted inconsistency score	-6	3	-4	2
E1	Repeated trip	C	CC	II	C
E2	Missing money	II	CC	NA	CC
E3	Left cell phone	I	N	I	C

II Highly Inconsistent	I Inconsistent	N Neutral	NA Not applicable	C Consistent	CC Highly Consistent
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		H1	H2	H4	H4
		Suicide	Accident	Killed by rival in love	Killed by rival in business
	Weighted inconsistency score				
E1	Repeated trip				
E2	Missing money				
E3	Left cell phone				

Agreement Consensus Mild Medium Strong Disagreement

6.20 Probability Table

Chance	Frequency	Belief (subjective)	Strength of Support (objective)	Marks
1.0	100%	I know	Beyond peradventure	A+
0.9	90%	I am positive	Overwhelming	A
0.8	80%	I am sure	Cogent	A-
0.7	70%	I am confident	Strong	B+
0.6	60%	I think	More likely than not	B
0.5	50%	I wonder whether	Evenly balanced	B-
0.4	40%	I suspect	Not very likely	C+
0.3	30%	I surmise	Unlikely	C
0.2	20%	I doubt that	Weak	C-
0.1	10%	I very much doubt that	Minimal	D+
0	0%	I disbelieve	Nil	D/F

7 Week 4

7.1 Function of an expert

- *R v. Chan Kam Tak* [1988] 2 HKLR 11, (CACC 204 of 1987)

“13. . . The function of an expert is to give his opinion upon an issue in the case based on inferences which he draws from perceived facts as a result of his knowledge and experience; , to give evidence of fact which his training has equipped

him to perceive but which would not be observed by a layman. :"to furnish the judge or jury with the necessary scientific criteria for testing the accuracy of his conclusions, so as to enable the judge or jury to form their own judgment by the application of these criteria to the facts proved in evidence."'" (underlines added; applying *Davie v. Edinburgh Magistrates* [1953] SC 34 at 40).

7.2 A bird eye view

- 5-rule (A condition precedent to admissibility is "relevancy".)
- The Common knowledge rule (*R v. Turner* [1975] QB 834)
- The area of Expertise rule (A recognised area of expertise rule) (*R v. Turner*)
- The Expertise rule (qualifications) (*R v. Turner*)
- The Basis rule (factual basis of opinion) (*R v. Abadom (Steven)* [1983] 1 WLR 126)
- The Ultimate issue rule (*HKSAR v. Mo Sze Lung Thomson and another* CACC 152/2001)
- See [Report of Law Reform Committee on Opinion Evidence, Singapore Academy of Law](#); J.J. Doyle Q.C. [Admissibility of Opinion Evidence](#).

7.3 The common knowledge rule

" . . . furnish the court with scientific information which is likely to be outside the experience or knowledge of a judge or jury." *R v. Turner* [1975] 1 QB 834, at 841.

"The area for consideration is one that the tribunal requires the assistance of an expert."

" . . . if the subject-matter is one on which the average man is capable of forming an opinion unaided by expert evidence, then the expert evidence is inadmissible." J.J. Doyle Q.C.

"An expert's opinion is admissible to furnish the court with scientific information which is likely to be outside the experience and knowledge of a judge or jury. If on the proven facts a judge or jury can form their own conclusions without help, then the opinion of an expert is unnecessary. In such a case if it is given dressed up in scientific jargon it may make judgment more difficult." [*R v. Turner*]; applied in *HKSAR v. Nancy Kissel* CACC 414/2005; *HKSAR v. Cheung Yui Kong* [2007] 4 HKLRD 413, CACC 362/2005; this principles was laid down by Lord Mansfield in *Folkes v. Chad* (1782) 3 Doug.K.B. 157

7.4 Field of knowledge

" . . . whether the subject matter of the opinion forms part of a body of knowledge or experience which is sufficiently organised or recognised to be accepted as a reliable body of knowledge or experience, a special acquaintance with which by the witness would render his opinion of assistance to the court." *The Queen v. Bonython* [1984] 38 SASR 45 at 47; applied in *HKSAR v. Yip Kim-po and five others* CACC 353/2010 at paragraph 38. See also *Kennedy v. Cordia (Services) LLP* [2016] 1 WLR 597 (SC), at 610 paragraph 43, applying *The Queen v. Bonython*.

7.5 The expertise rule

“. . . whether the witness has acquired by study or experience sufficient knowledge of the subject to render his opinion of value in resolving the issues before the court . . .” *The Queen v. Bonython* [1984] 38 SASR 45 at 47; applied in *HKSAR v. Yip Kim-po and five others* CACC 353/2010 at paragraph 38. See also *Kennedy v. Cordia (Services) LLP* [2016] 1 WLR 597 (SC), at 610 paragraph 43, applying *The Queen v Bonython*.

7.6 The basis rule

“Before a court can assess the value of an opinion it must know the facts upon which it is based. If the expert has been misinformed about the facts or has taken irrelevant facts into consideration or has omitted to consider relevant ones, the opinion is likely to be valueless. In our judgment, counsel calling an expert should in examination in chief ask his witness to state the facts upon which his opinion is based.” *R v. Turner* [1975] QB 834, at 840;

- In *HKSAR v Tang Yuet Ming and Tang Yuet Luen* HCCC 237/2003, the judge refused to admit in evidence the report of the Government Treasury Accountant because the accountant passively relied upon on the material provided to him by the investigation officer. See [here](#).

“The fact which is basis to the question on which he is asked to express his opinion must be proved by admissible evidence. Where the existence or non-existence of some fact is in issue, a report made by an expert who is not called as a witness is not admissible as evidence of that fact merely by the production of the report, even though it was made by an expert. But once the primary facts on which their opinion is based have been proved by admissible evidence, they are entitled to draw on the works of others as part of the process of arriving at their conclusions. They should refer to the material in their evidence so that the cogency and the probative value of their conclusion can be tested and evaluated by reference to it.” *R v Abadom (Steven)* [1983] 1 WLR 126 CA.

7.7 The ultimate issue rule

“24. . . there is no longer a bar to the admission of expert evidence on what has been called the ultimate issue. . . .”

“25. . . Whatever sea change there may have been in recent years to the admission of expert evidence on the ultimate question, that change does not amount to a proposition, which we rather think was the tenor of the submissions made to us, that expert evidence is always admissible on the ultimate question. Whether or not it is depends on the facts of the case; upon the expertise, whether that expertise is relevant to the ultimate question; whether the expert’s opinion on ‘the ultimate

question' is a conclusion which depends upon his expertise or is proffered in some other capacity; and whether the court requires the assistance of an expert upon the ultimate question." *HKSAR v. Mo Sze Lung Thomson and another* CACC 152/2001

7.8 Admissibility of expert evidence

- Connection of methods used by witness with the area of expertise rule and the expertise rule

"An investigation of the methods used by the witness in arriving at his opinion may be pertinent, in certain circumstances, to the answers to both the above questions (Area of expertise rule and expertise rule). An investigation of the methods used by the witness in arriving at his opinion may be pertinent, in certain circumstances, to the answers to both the above questions. If the witness has made use of new or unfamiliar techniques or technology, the court may require to be satisfied that such techniques or technology have a sufficient scientific basis to render results arrived at by that means part of a field of knowledge which is a proper subject of expert evidence. . . ." (brackets added) *The Queen v. Bonython* [1984] 38 SASR 45 at 47; applied in *HKSAR v. Yip Kim-po and five others* CACC 353/2010 at paragraph 38.

7.9 *Wang Din Shin v. Nina Kung*

- Requirements for acceptance of a specific scientific theory, novel or not (see *Wang Din Shin v. Nina Kung*, HCAP 8A/1999)
- Chinese translation

"The person propounding the scientific theory must have the necessary qualifications, expertise, experience and integrity to ensure that the Court can have confidence that his testimony is worthy of consideration."

"The theory must have a sound scientific basis, comprehensible to the Court."

- Requirements for acceptance of a specific scientific theory, novel or not (see *Wang Din Shin v. Nina Kung*, HCAP 8A/1999)

"The theory should have gained widespread support amongst that sector of the scientific community which would be likely to utilise it or its results."

"The methods used to carry out the scientific test should be safe and reliable, and follow an established protocol, i.e. one that has been published, disseminated and acknowledged to be reproducible."

8 Week 5

8.1 Method of analysis?

- Relational (who, what, where) Determining where an object or person was in relation to other objects or people
- Functional (how) what conditions were necessary for certain aspects of the crime to be possible. the purpose of functional reconstruction is to consider all possible explanations for a given set of circumstances.
- Temporal (when) temporal : chronological list of events can help an investigator gain insight into what happened and the people involved in a crime.

8.2 Covert operations on the Internet

- Shipley and Bowker. Investigating Internet Crimes: An Introduction to Solving Crimes in Cyberspace. 2014. Elsevier.
- Basic undercover procedures

“. . . . many companies and agencies have not developed separate policies regarding conducting online investigations, and even fewer have developed specific guidance for working undercover on the Internet. . . . The following items are things that the investigator should consider when developing their procedures for conducting undercover Internet operations:”

- (1) Type of investigation
 - a. The level of undercover preparation would reflect the level of the investigation that the case requires. General intelligence gathering is different than conducting an investigation. Proactive investigations are also different than reactive investigations.
- (2) Prepare undercover profiles for a range of suspects, based upon the scope of your agency's mission. Here is a non-exhaustive list of possibilities:
 - Pedophile
 - Teen girl
 - Teen boy
 - Warez or carder
 - Intellectual property thief
 - Fence/theft
 - Gang member
 - Terrorists

- (3) Document your profiles.
 - Traditional methods of profile documentation are to use a form designed to prepare/document the persona. The form is then used by the investigator to refer to while undercover. Other options include automated tools like those in Vere software WebCase. WebCase has dedicated modules for streamlining the process for the investigators to record and provide access to the investigator's undercover identity.
- (4) Learn online terminology from targeted offenses as well as commonly used vernacular used by the intended profile.
- (5) Set up undercover accounts for each persona (as required):
 - Mailboxes
 - Email accounts
 - Gamer tags
 - Cell phones.

8.3 Basic undercover procedures

- Ethics during undercover operations
- Developing your undercover persona

Other things to consider when building the persona are how deep of an identity do you need to create? For instance, general intelligence gathering personas only need to be further developed if they will be used to actively interact with targets. Especially with online undercover identities, designing personal family information can aid in your ability to quickly and effectively communicate and make your identity believable. Information on the identities of direct family members, friends, school, and/or work can be developed ahead of time allowing the investigator to better think on his feet and respond in online conversations. The depth of the persona can include email addresses and contacts, phone numbers, building undercover banking or credit card accounts, and online fund transfer methods, such as Paypal or Bitcoin

- The undercover role
- Online undercover accounts
- Finishing touches to your persona
- Countermeasures

Diligence in protecting your online persona can mean the difference between fail-

ing to solve the crime investigated and a successful apprehension of a criminal. Steps can include being cautious of your mail drop when picking up items. Criminals often apply the same techniques law enforcement and civil investigators do. Surveillance works both ways. . . . When connecting to your ISP, make sure you are in the correct geographical location for your operation. If you state that you are in Austin, you do not want your IP Address resolving back to Los Angeles. When using the cell phones to contact the suspect, be aware of caller ID and call return capabilities. There are services like Google phone numbers that can be applied to assist in hiding the investigator's identity, but they are employed by the targets too.

- Use of images for profiles
- Undercover cell phones and credit cards
- Social networking site undercover challenges
- Computer equipment for undercover operations

8.4 Basic Internet Investigative Steps

- (1) Review the initial reports of the incident or crime.
 - Review details in the initial report.
 - Rechecking known facts.
 - Review fact to identify if they meet the elements of the crime classification.
- (2) Contact the reporting party/victim and determine if reported information is correct and additional information is not documented in initial reports.
 - Investigator contacts victim and validates reported information and ascertains if new information is available.
 - Identify if additional information/ evidence not originally identified or collected is available
- (3) Validate that a crime involving the Internet actually occurred.
 - Review the reported facts and identify that an Internet crime actually occurred.
- (4) Prepare an investigative plan.
 - Create a predication laying out the basic allegation, the source, and date the allegation was made.
 - Delineate all elements to establish a law violation occurred.
 - Identify investigative steps need to legally prove law violation.

- (5) Identify initial investigative information.
 - Identify the basic facts from the reports, the “who, what, where, when, why, and how” based on the available information.
 - With an Internet case this will depend on the Internet service used to commit the offence.
- (6) Document Internet evidence.
 - The investigator needs to document the available evidence on the Internet as determined by the initial report if not initially collected.
- (7) Subpoena ISP or other online services to ID IP address usage by suspects.
 - Identify information to subpoena, such as IP and email addresses, website, or blog information.
 - (See *Cinepoly Records Company Limited and 9 others v. Hong Kong Broadband Network Limited, Hutchison Global Communications Limited, i-Cable Webserve Limited and PCCW IMS Limited* HCMP 943/2006.)
- (8) Assess additional cases of similar comparison
 - Review additional cases locally, through adjacent agencies or nationally through the ICCC for similar suspects or crime type.
- (9) Review collected data and determine sufficiency of evidence
 - After collecting the evidence, determine if there is sufficient information and evidence to proceed with a prosecution.
- (10) Submit evidence to counsel/ prosecutor for potential prosecution
 - Prepare case and submit to counsel

9 Week 6

9.1 U.S. v Shane Ragland

- Another ground of appeal was that Special Agent Kathleen Lundy of the FBI Crime Laboratory, an expert in comparative bullet-lead analysis, had made a false statement.

- Lundy testified that the murder-scene bullet fragments were “analytically indistinguishable” from the bullets in the box seized in the search of Ragland’s residence.

9.2 The 2 scientific assumptions of the opinion

- Every batch of lead is perfectly consistent in its chemical composition (Comparative bullet-lead analysis (CBLA) experts use the term “homogenous” in this context)
- Every manufacturer’s batch of lead has a unique chemical composition, different from all other batches.

9.3 Testimony of Kathleen Lundy

“Under oath in court, she knowingly gave false testimony that the Winchester company had melted its own bullet lead until 1996, when in reality Winchester had stopped the practice in 1986. She did so to bolster her conclusion that two bullets had come from the same batch of manufacturing lead and could therefore be linked to the same person.”

- Why did she give false testimony? (see question 1 of assignment)

“This is consistent with the specimens within each group originating from the same source of bullet lead at the Winchester Ammunition manufacturing plant. . . . These results are typical of what is expected among bullets originating from the same box of cartridges or other boxes of the same manufacturer, caliber and type packaged on or about the same date.” (quoting from her report)

“[W]e have seen that bullets that come from the same source of lead will have the same composition, and bullets from different sources of lead have different composition. . . . And we have studied the production processes within the plants and seen that you will have bullets of the same composition in a given box or other boxes of that same product that are packaged at the same time . . .”

“[Y]ou expect to find bullets of the same composition in a given box or other boxes, but, you know, it’s the same type of ammunition that’s produced at the same time. That’s the – that’s where you expect to find compositional similarities. . . . Well, again, that means that from analyzing many boxes of ammunition over the years in many cases in research projects and in many of the cases I’ve worked there have been multiple boxes with the same packing code, which means they were produced at the same time. And I’ve seen that you do expect to find the same compositions in these different boxes.”

9.4 Why she lied?

“I cannot explain why I made the original error . . . nor why, knowing that the testimony was false, I failed to correct it at the time,” Lundy wrote in a May 28 internal FBI memo. “I was stressed out by this case and work in general. I had

been under a great deal of professional pressure for over a year and had considered resigning. This pressure was increased by new and repeated challenges to the validity of the science associated with bullet-lead comparison analysis. These challenges affected me a great deal, perhaps more than they should have. I also felt that there was ineffective support from the FBI to meet the challenges."

"Lundy claimed that she gave the false testimony under pressure coming from the many recent challenges to her area of expertise – she feared that her testimony might be disallowed and that her field might lose credibility with the courts."

9.5 Degree of certainty

- Table of Degree of Certainty:-

Certainty Level	Description/Indicators	Commensurate Qualification
C0	Evidence contradicts known facts	Erroneous/incorrect
C1	Evidence is highly questionable	Highly uncertain
C2	Only one source of evidence that is not protected against tampering	Somewhat uncertain
C3	The source(s) of evidence are more difficult to tamper with but there is not enough evidence to support a firm conclusion or there are unexplained inconsistencies in the available evidence	Possible
C4	(a) Evidence is protected against tampering or (b) evidence is not protected against tampering but multiple, independent sources of evidence agree	Probable
C5	Agreement of evidence from multiple, independent sources that are protected against tampering. However, small uncertainties exist (e.g., temporal error and data loss)	Almost certain
C6	The evidence is tamper proof or has a high statistical confidence	Certain

9.6 Contents

- Academic and professional qualifications
- A statement of the source of instructions and the purpose of the advice or report
- A chronology of the relevant events

"A statement of the methodology used, in particular what laboratory or other tests (if any) were employed, by whom and under whose supervision"

- Details of the documents or any other evidence upon which any aspects of the advice or report is based;

“A statement setting out the substance of all instructions (whether written or oral). The statement should summarize the facts and instructions given to the expert which are material to the opinions expressed in the report or upon which those opinions are based.”

“Should not express a view in favour of one or other competing sets of facts, unless, because of their particular learning and experience, they perceive one set of facts as being improbable or less probable, in which case they may express that view, and should give reasons;”

- Should express separate opinions on every set of facts in issue (what are facts in issue)
- Begin with name, office address, qualification and experience of the expert
- A statement as to the issues to which the report relates and identify the problem
- Specify the investigations that has been carried out
- Set out details as to the test that has been carried out and any test which appear relevant were not carried out and explain the reason
- Set out the facts as that were established
- Assessment of the facts with explanatory reasons
- State the conclusions on the issues set out in the beginning of the report
- Sign and date the report
- May contain footnote and appendices and any supporting documentation, e.g. plans, photographs, diagrams

9.7 Code of Practice

- The Code of Practice for Expert Witnesses Engaged by the Prosecuting Authority
- October 2004
- [Statement by the Director of Public Prosecutions](#)

9.8 Application of the Code

- Any expert engaged by prosecution who:-
 - provides a report and/or witness statement as to opinion for use as evidence (testimony)
 - gives opinion evidence (testimony)
 - is the Court appointed expert
- Does not apply:-
 - to a civil servant, a public servant or an employee of a public body

9.9 General obligation to court

- primary duty is to the Court and not to the person retaining the expert.

- not an advocate for a party.
- overriding duty to assist the Court impartially

9.10 Form of expert report

- qualifications and experience
- purpose of the report
- facts, matters, observations and assumptions on which the opinions in the report is based
- the facts and matters assumed or observed by the expert
- differentiate assumed facts, observed facts, facts asserted upon the basis of experience, facts as the product of the exercise of expert reasoning
- reasons for opinion
- question or issue falls outside expertise
- literature or other materials utilised in support of the opinion
- any Hong Kong, Australian, British, American or European Union , relied upon examinations, tests or other investigations relied upon
- details of the person(s) who carried out those examinations, tests or other investigations
- the expert's reasoning, disclosed in a manner sufficient to enable the tribunal of fact to understand and evaluate his or her conclusions.
- any qualified opinions and such qualifications
- any not concluded opinion and the reasons
- any change of opinion (by supplementary report)

9.11 Where the expert is unable to comply with the Code

- Where an expert to whom the Code applies is unable to comply with any of the provisions of the Code, he or she should state that fact in his or her report and provide details of the reason or reasons for non-compliance.

9.12 Duty to disclose relevant personal information

- any criminal convictions
- any criminal investigation of which the expert is aware, relating to the expert, which has commenced but has not yet concluded
- any adverse finding relating to the expert, made by any statutory, disciplinary or professional body or tribunal
- any investigation of which the expert is aware, relating to the expert, by any statutory, disciplinary or professional body or tribunal, which has commenced but has not yet concluded

9.13 If no relevant personal information

"I have never been convicted of any criminal offence; nor have I been the subject of an adverse finding by any statutory, disciplinary or professional body or tribunal,

nor, so far as I am aware, am I the subject of any investigation by any statutory, disciplinary or professional body or tribunal.”

9.14 Disclosure Manual

- [Crown Prosecution Service Disclosure Manual 26 February 2018](#)
- Chapter 36: Expert Witnesses – Prosecution Disclosure Obligations

“36.2 There is no definitive legal definition of an expert. It is a matter for the court to rule upon in each case. However for the purposes of this guidance, an expert is defined as:”a person whose evidence is intended to be tendered before a court and who has relevant skill or knowledge achieved through research, experience or professional application within a specific field sufficient to entitle them to give evidence of their opinion and upon which the court may require independent, impartial assistance”.”

“36.3 The difference between an expert and other witnesses is that experts are the only witnesses allowed to give opinion evidence. For that reason, an expert witnesses’ competence in their field of expertise may be in issue as well as their credibility. If an expert’s credibility and/or competence is the subject of concern, that information should be considered for disclosure.”

9.15 Guidance Booklet for Experts Disclosure

- [Guidance Booklet for Experts Disclosure: Experts’ Evidence, Case Management and Unused Material May 2010](#)

9.16 Aims of disclosure

“The regime for disclosure is set out in the [Criminal Procedure and Investigations Act] and the Code issued under it. This is designed to ensure that there is a fair system for the disclosure of unused material which assists the defence in the timely preparation of its case, does not overburden the parties and enables the court to focus on all the important issues in the trial.”

9.17 The meaning of unused material

“During the course of any investigation material is generated. Some of it is used as evidence and other material is not used. The material that is not used as evidence is known as unused material, to which the disclosure regime applies.”

“Unused material is material that is relevant to the investigation but which does not actually form part of the case for the prosecution against the accused. Even though the material may not be used as evidence, it is important that for the purposes of disclosure this material is retained. It is not for you to determine whether the material generated in the course of an investigation is relevant to the investigation.”

9.18 Discharging obligations

“There are three key obligations arising for you, as an expert, as the investigation progresses. Your understanding of these obligations and your delivery of them is the key to you adequately fulfilling your disclosure obligations. The relevant steps are to retain, to record, and to reveal.”

9.19 What to retain

“You should retain everything, including physical, written and electronically captured material, until otherwise instructed and the investigator has indicated the appropriate action to take.”

9.20 How long to retain

“The period of time for which materials are required to be retained will vary from case to case and will depend on a number of factors. Examples include the nature of the offence; the stage and status of any legal proceedings; whether the case is of special interest. It must also be remembered that the retention requirement may alter as a result of a change of circumstances during the course of the investigation.”

9.21 When to record

“The requirement for you to commence making records begins at the time you receive instructions and continues for the whole of the time you are involved.”

9.22 What to record

“You should keep records of all the work you have carried out and any findings you make in relation to the investigation. The guidance provided . . . as a minimum . . . :”

“your notes, and those of any assistant, should be signed, dated, attributable to the individual and produced contemporaneously, whenever practicable;”

“the notes should be sufficiently detailed and expressed in such a manner that another expert in your field can follow the nature of the work undertaken, any assumptions made and the inferences you have drawn from the work.”

“verbal and other communications:”

“you should keep your own notes of all meetings you attend;”

“you should keep your own notes of telephone conversations and it is important that points of agreement, or disagreement and agreed actions are recorded;”

“you should ensure that a record of all emails and other electronic transmissions (such as images), sent or received, is kept;”

“you should keep clear notes of any witness accounts or explanations that you have been provided with, or any other information received.”

9.23 Report should contain

"details of your qualifications, experience or accreditation relevant to the work performed;"
"the range and extent of your expertise;"
"details of any information upon which you have relied in arriving at your opinion;"
"details of any statements of fact upon which you have relied in reaching your opinion;"
"clarification of which of the facts are within your own knowledge;"
"information relating to who has carried out measurements, examinations, tests etc and if under your supervision"
"your opinion(s) and a justification for these"
"where you have provided qualified opinions details of these qualifications"
"a summary of all your conclusions"

9.24 Failure to comply disclosure

- prosecution halted or delayed
- appellate courts finding that a conviction is unsafe
- trial court makes adverse comment about you
- professional embarrassment (action by professional body)
- credibility

9.25 Voir dire

- Trial within a trial

9.26 Process

- Specific issues (preliminary questions)
- General issues
- See [HK Law Reform Commission: Report on the Procedure Governing the Admissibility of Confession Statements](#)
- Section 189 of the Evidence Act 1995 (New South Wales)

(1) If the determination of a question whether:

- (a) evidence should be admitted (whether in the exercise of a discretion or not),
or
- (b) evidence can be used against a person, or
- (c) a witness is competent or compellable,
depends on the court finding that a particular fact exists, the question whether that fact exists is, for the purposes of this section, a preliminary question

- Specific issue (preliminary questions)
- Prosecution Case
- Defence Case
- Judge's ruling on specific issue

9.27 Specific issue - Prosecution case

- Witnesses for the specific issue
- Examination-in-chief
- Cross-examination
- Re-examination

9.28 Specific issue - Defence case

- Witnesses for the specific issue
- Examination-in-chief
- Cross-examination
- Re-examination

9.29 Expert evidence evaluation by court

- *Scott v. Bloomsbury Health Authority* [1990] 1 Med LR 214
- *Loveday v. Renton* [1990] 1 Med LR 117
- Factors of evaluation
 - Inappropriate & outdated expertise.
 - Reasons given for his opinions.
 - Extent of reasons supported by evidence.
 - Campaigning approach.
 - Extent to which a witness has conceived an opinion
 - Extent to which a witness is reluctant to re-examine his opinion in the light of new evidence.
 - Internal consistency and logic of his evidence.
 - Precision & accuracy of thought as demonstrated by his answers.
 - Care with which he has considered the subject & presented his evidence.
 - How he responds to searching & informed cross-examination.
 - How he faces up to & accepts the logic of a proposition put in cross-examination.
 - How he is prepared to concede remarks that are correct.
 - Where criticisms have been made on grounds of bias or lack of independence, the witness's demeanor is a factor.
 - Lack of familiarity with notes & literature.
 - Exaggerated inferences from notes.

10 Week 7

10.1 Rules of the High Court (Chapter 4A)

- [available here](#)
- Summary re experts:-
 - Overriding duty to Court and declaration of duty to Court
 - Statement of truth
 - Code of conduct (Appendix D)
 - Form of expert report

10.2 Rule 35A Expert witness's overriding duty to court

- O.38, r.35A
- (comparable to sections, subsections)

“(1) It is the duty of an expert witness to help the Court on the matters within his expertise.”

“(2) The duty under paragraph (1) overrides any obligation to the person from whom the expert witness has received instructions or by whom he is paid.”

- O.38, r.37A
- An expert report disclosed under these rules must be verified by a statement of truth in accordance with Order 41A.

10.3 Rule 37B Duty to provide expert witness with copy of *code of conduct*

- O.38, r.37B

“(1) A party who instructs an expert witness shall as soon as practicable provide the expert witness with a copy of the *code of conduct* set out in Appendix D.”

“(2) Where the Court has under rule 4A(1) ordered that 2 or more parties shall appoint a single joint expert witness, paragraph (1) applies to each of the parties.”

“(3) If the instruction is in writing, it must be accompanied by a copy of the *code of conduct* set out in Appendix D.”

10.4 Rule 37C Expert witness's declaration of duty to Court

- O.38, r.37C

“(1) An expert *report* disclosed under these rules is *not admissible* in evidence *unless* the report contains a declaration by the expert witness that—”

“(a) he has read the code of conduct set out in Appendix D and agrees to be bound by it;”
“(b) he understands his duty to the Court; and”
“(c) he has complied with and will continue to comply with that duty.”
“(2) *Oral expert evidence is not admissible unless* the expert witness has declared, whether orally or in writing or otherwise, that-”
“(a) he has read the code of conduct set out in Appendix D and agrees to be bound by it;”
“(b) he understands his duty to the Court; and”
“(c) he has complied with and will continue to comply with that duty.”
“(3) Paragraph (1) does not apply to a report that was disclosed under rule 37 before the commencement of this rule.”

10.5 Rule 5 Form of statement of truth of duty to Court

- O.41A, r.5

“(1) The form of the statement of truth verifying a document *other than* a witness statement or expert report is as follows-”
“[I believe] [the (plaintiff or as may be) believes] that the facts stated in this [name document being verified] are true..”
“(2) The form of the statement of truth verifying a witness statement or is as follows -”
“I believe that the facts stated in this [name document being verified] are true and (if applicable) the opinion expressed in it is honestly held.”.

10.6 App D Code of conduct for expert witnesses

- Application of the code

“1. This code of conduct applies to an expert who has been instructed to give or prepare evidence for the purpose of proceedings in the Court.”

- General duty to Court

“2. An expert witness has an overriding duty to help the Court impartially and independently on matters relevant to the expert’s area of expertise.”

“3. An expert witness’s paramount duty is to the Court and not to the person from whom the expert has received instructions or by whom he is paid.”

“4. An expert witness is not an advocate for a party.”

- *Declaration of duty to Court*

“5. A report by an expert witness is *not admissible* in evidence unless the report contains a declaration by the expert witness that-”

“(a) he has read this code of conduct and agrees to be bound by it;”

“(b) he understands his duty to the Court; and”

“(c) he has complied with and will continue to comply with that duty.”

“6. Oral expert evidence is *not admissible* unless an expert witness has declared in writing, whether in a report or otherwise in relation to the proceedings, that-”

“(a) he has read this code of conduct and agrees to be bound by it;”

“(b) he understands his duty to the Court; and”

“(c) he has complied with and will continue to comply with that duty.”

- *Expert report to be verified*

“7. A report by an expert witness must be *verified by a statement of truth* in accordance with Order 41A of the Rules of the High Court (Cap 4 sub. leg. A).”

- *Form of expert reports*

“8. A report by an expert witness must (in the body of the report or in an annexure) specify-”

“(a) the person’s qualifications as an expert;”

“(b) the facts, matters and assumptions on which the opinions in the report are based (a letter of instructions may be annexed);”

“(c) the reasons for each opinion expressed;”

“(d) if applicable, that a particular question or issue falls outside his field of expertise;”

“(e) any literature or other materials utilized in support of the opinions; and”

“8. (f) any examinations, tests or other investigations on which he has relied, and the identity and details of the qualifications of the person who carried them out.”

“9. If an expert witness who prepares a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.”

“10. If an expert witness considers that his opinion is not a concluded opinion because of insufficient research or insufficient data or for any other reason, this must be stated when the opinion is expressed.”

“11. An expert witness who, after communicating an opinion to the party instructing him (or that party’s legal representative), changes his opinion on a material matter shall forthwith provide the party (or that party’s legal representative) with a supplementary report to that effect which must contain such of the information referred to in section 8(b), (c), (d), (e) and (f) as is appropriate.”

11 Week 8

11.1 FBI: Functions of an investigation plan

- [FBI Law Enforcement Bulletin, 68\(6\), 22 - 25](#)
- Focus the investigative process to ensure that all litigation elements are addressed;
- Limit unnecessary procedures and step duplication;
- Coordinate the activities of numerous personnel on large cases;
- Provide stability to the investigation if staff changes occur
- Enhance communication with legal authorities:
 - by providing an outline of the investigation;
 - identifying strengths and weaknesses in the case;
- Provide a framework for the final report;
- Become a training aid for inexperienced staff members.

11.2 Forensic Laboratory Terms of Reference

- stakeholders
 - owning organisation of the Forensic Laboratory
 - the team
- basis of the relationship
- Terms of Reference (ToR)
- Created during the earliest stages of the project for the establishment of the Forensic Laboratory
- purpose and structure of the Forensic Laboratory
- define and verify the scope of the Forensic Laboratory
- measure success of the Forensic Laboratory
- basis for future decision
- common understanding of the scope among the stakeholders
- what needs to be achieved, by whom and when
- identifies the set of deliverables that satisfy the requirements and the scope
- identify the success factors, risks, and boundaries
- written in some detail and should include:
 - vision;
 - scope and objectives;
 - deliverables;
 - boundaries, risks, and limitations;
 - roles, responsibilities, authority, accountability, and reporting requirements;
 - stakeholders;
 - the regulatory framework;
 - resources available;
 - work breakdown structure and schedule;
 - success factors;
 - intervention strategies.

11.3 China national standards 國家標準

- Can read most standards at this [portal](#)
- GB/T 29360-2012 電子物證數據恢復檢驗規程 Technical specification for data recovery of electronic forensic
- GB/T 29361-2012 電子物證文件一致性檢驗規程 Technical specification for file identification of electronic forensic
- GB/T 29362-2012 電子物證數據搜索檢驗規程 Technical specification for data search of electronic forensic
- GB/T 31500-2015 信息安全技術存儲介質數據恢復服務要求 Information security technology — Requirement of data recovery service for storage media

11.4 China public safety industrial standards 公共安全行業標準

- GA/T 754-2008 電子數據存儲介質複製工具要求及檢測方法
- GA/T 755-2008 電子數據存儲介質寫保護設備檢測方法
- GA/T 756-2008 數字化設備證據數據發現提取固定方法
- GA/T 757-2008 程序功能檢驗方法
- GA/T 825-2009 電子物證數據搜索檢驗技術規範（已作廢）
- GA/T 826-2009 電子物證數據恢復檢驗技術規範（已作廢）
- GA/T 827-2009 電子物證文件一致性檢驗技術規範（已作廢）
- GA/T 828-2009 電子物證軟件功能檢驗技術規範
- GA/T 829-2009 電子物證軟件一致性檢驗技術規範
- GA/T 976-2012 電子數據法庭科學鑑定通用方法
- GA/T 977-2012 取證與鑑定文書電子簽名
- GA/T 978-2012 網絡遊戲私服檢驗技術方法
- GA/T 1069-2013 法庭科學電子物證手機檢驗技術規範
- GA/T 1070-2013 法庭科學計算機開關機時間檢驗技術規範
- GA/T 1071-2013 法庭科學電子物證 Windows 操作系統日誌檢驗技術規範
- GA/T 1170-2014 移動終端取證檢驗方法
- GA/T 1171-2014 芯片相似性比對檢驗方法
- GA/T 1172-2014 電子郵件檢驗技術方法
- GA/T 1173-2014 即時通訊記錄檢驗技術方法
- GA/T 1174-2014 電子證據數據現場獲取通用方法
- GA/T 1175-2014 軟件相似性檢驗技術方法
- GA/T 1176-2014 網頁瀏覽器歷史數據檢驗技術方法
- GA/T 1772-2014 電子郵件檢驗技術方法
- GA/T 1773-2014 即時通訊記錄檢驗技術方法
- GA/T 1774-2014 電子證據數據現場獲取通用方法
- GA/T 1474-2018 法庭科學計算機系統用戶操作行為檢驗技術規範
- GA/T 1475-2018 法庭科學電子物證監控錄像機檢驗技術規範
- GA/T 1476-2018 法庭科學遠程主機數據獲取技術規範
- GA/T 1477-2018 法庭科學計算機系統接入外部設備使用痕跡檢驗技術規範
- GA/T 1478-2018 法庭科學網站數據獲取技術規範
- GA/T 1479-2018 法庭科學電子物證偽基站電子數據檢驗技術規範

- GA/T 1480-2018 法庭科學計算機操作系統仿真檢驗技術規範

11.5 司法部頒司法鑑定技術規範

- can download [here](#)
- SF/Z JD0400001-2014 電子數據司法鑑定通用實施規範
- SF/Z JD0401001-2014 電子數據複製設備鑑定實施規範
- SF/Z JD0403001-2014 軟件相似性檢驗實施規範
- SF/Z JD04020001-2014 電子郵件鑑定實施規範
- SF/Z JD0400002-2015 電子數據證據現場獲取通用規範
- SF/Z JD0402003-2015 即時通訊記錄檢驗操作規範
- SF/Z JD0403003-2015 計算機系統用戶操作行為檢驗規範
- SF/Z JD0403002-2015 破壞性程序檢驗操作規範
- SF/Z JD0401002-2015 手機電子數據提取操作規範
- SF/Z JD0402002-2015 數據庫數據真實性鑑定規範
- SF/Z JD0300002-2018 數字聲像資料提取與固定技術規範
- SF/Z JD0302003-2018 數字圖像修復技術規範
- SF/Z JD0303001-2018 照相設備鑑定技術規範
- SF/Z JD0304002-2018 錄像設備鑑定技術規範
- SF/Z JD0402004-2018 電子文檔真實性鑑定技術規範
- SF/Z JD0403004-2018 軟件功能鑑定技術規範
- SF/Z JD0404001-2018 偽基站檢驗操作規範

11.6 中國法律法規

- 《司法鑑定執業分類規定（試行）》2000年11月29日
- 《司法鑑定機構登記管理辦法》2000年8月14日（已廢止）
- 《司法鑑定人登記管理辦法》2000年8月14日（已廢止）
- 《司法鑑定機構登記管理辦法》2005年9月30日
- 《司法鑑定人登記管理辦法》2005年9月30日
- 《司法鑑定程序通則》2007年10月1日（2015年12月24日修訂，2016年5月1日起施行）
- 《司法鑑定許可證和司法鑑定人執業證管理辦法》的通知 2010年4月12日
- 關於換發新版《司法鑑定許可證》和《司法鑑定人執業證》的通知

11.7 認證認可行業標準和規範

- RB/T 214-2017 檢驗檢測機構資質認定能力評價檢驗檢測機構通用要求
- RB/T 219-2017 檢驗檢測機構資質認定能力評價司法鑑定機構要求
- CNAS-CL08：2018 司法鑑定/法庭科學機構能力認可準則
- CNAS-CL08-A001：2018 司法鑑定/法庭科學機構能力認可準則在電子數據鑑定領域的應用說明

11.8 ISO

- ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories
- ISO/IEC 17043:2010 Conformity assessment – General requirements for proficiency testing
- ISO/IEC 27037:2016 Guidelines for identification, collection, acquisition and preservation of digital evidence
- ISO/IEC 27041:2016 Guidance on assuring suitability and adequacy of incident investigative method
- ISO/IEC 27042:2016 Guidelines for the analysis and interpretation of digital evidence (30 June 2015)
- ISO/IEC 27043:2016 Incident investigation principles and processes (31 March 2015)
- ISO/IEC 27050-1:2016 Electronic discovery - Part 1: Overview and concepts
- ISO/IEC 27050-2:2018 Electronic discovery - Part 2: Guidance for governance and management of electronic discovery
- ISO/IEC 27050-3:2017 Electronic discovery - Part 3: Code of practice for electronic discovery

12 Week 9

12.1 Practitioner guides from RSS

- Royal Statistical Society. [Guide 1 – ‘Fundamentals of probability and statistical evidence in criminal proceedings’, November 2010](#)
- Royal Statistical Society. [Guide 2 – ‘Assessing the probative value of DNA evidence’, March 2012](#)
- Royal Statistical Society. [Guide 3 – ‘The logic of forensic proof: inferential reasoning in criminal evidence and forensic science’, May 2014](#)
- Royal Statistical Society. [Guide 4 – ‘Case assessment and interpretation of expert evidence’, January 2015](#)

12.2 Investigative advice and evaluative opinion

- Royal Statistical Society practitioner Guide entitled “Case assessment and interpretation of expert evidence, January 2015”
- Differences between investigative advice and evaluative opinion given by an expert:

In investigative mode or investigative advice, experts utilise abductive reasoning to offer explanations.

The expert may also offer posterior probabilities for those explanations.

When a case proceeds to trial, expert reports should be focussed on disputed facts in issue.

The expert should incorporate a likelihood ratio, expressed in words or numbers

or both, representing the expert's considered evaluation of the evidence.

12.3 Functions of Case Assessment and Interpretation

- clarifies the roles of forensic expertise in criminal investigations
- highlighting difference between investigative advice and evaluative opinions;
- identifies the difference in reasoning for investigative and evaluative modes;
- classifying scientific findings reports, ranging from hard scientific facts to evaluative expert opinions;
- rigorously evaluating the results of forensic examinations probabilistically;
- mapping evaluative opinion onto a 'hierarchy of issues', such that the probative value of the evidence may change according to the issue addressed;
- individual evaluations of particular scientific inquiries
- amalgamated individual evaluations into a single evaluative opinion, addressed to issues at activity level

12.4 Some Interview Questions (Network Information)

- how are the different computers networked?
- do you use wireless connectivity?
- who set this up?
- how is security configured?
- what is the password and user ID for setting up the router?
- how is the router configured?
- how is remote access configured?
- who set it up?
- IP addresses in use?
- how are the different computers networked?
- do you use wireless connectivity?
- who set this up?
- how is security configured?
- what is the password and user ID for setting up the router?
- how is the router configured?
- how is remote access configured?
- who set it up?
- IP addresses in use?

12.5 Some Interview Questions (Internet access)

- do you have Internet access?
- who is your supplier (ISP)?
- how do you pay for it?
- what services do you receive?
- how do you connect to the Internet?
- what do you use the Internet for?

- how often do you use it?
- what user IDs and passwords do you use for Internet access?
- what software do you use for Internet access and Web browsing?
- what search engines do you use?
- do you create favorites?
- how are favorites organized?
- where do you store favorites?
- do you use any add-ons for Internet access?
- have you created any Web sites?
- if so - details including hosters, user accounts, and passwords?
- where do you save files you download from the Internet?
- have you paid to download files from the Internet?
- if so - details?
- have you accessed and downloaded files from password-protected Web sites or those that require you to register?
- if so - details?
- do you use newsgroups?
- if so, details?
- what do you use them for?
- how do you access them?
- do you use any file sharing or Peer to Peer (P2P) software?
- if so - what?
- what for?
- where do you store these files?
- what have you uploaded for sharing?
- what social network sites do you use (FaceBook, Twitter, MySpace, etc.)?
- what for?
- details of all accounts and known passwords?

13 Epilogue

13.1 Writing

- George D. Gopen. [RAC, REA, where we are now, and where we should be going in the teaching of legal writing](#). Journal of the Legal Writing Institute, 17 (2011), xvii - xxxv.
- George D. Gopen and Judith A. Swan. [The Science of Scientific Writing](#). America Scientist 78 (1990), 550 - 8.
- Stephen M. Griffies and William A. Perrie. [Elements of Style for Writing Scientific Journal Articles](#). December 2013. Elsevier.
- Wilhelmiina Hamalainen. [Grammar and Style Notes for Scientific Writing](#).
- [Using Tenses in Scientific Writing](#). The University of Melbourne.
- Tony Lynch and Kenneth Anderson. [Grammar for Academic Writing](#). 2013. University of Edinburgh.
- [Elsevier researcher academy \(free\)](#)

13.2 Summary

- Five issues regarding probabilistic nature of evidence
 - Evidence is always incomplete
 - Evidence is commonly inconclusive
 - Evidence is often ambiguous
 - Evidence is often dissonant
 - Evidence comes from sources that have varying levels of credibility
- Who guards the guards?
- Epictetus (50 - 135):

“If you search for the truth, you would not try to win by every method possible; and when you have discovered the truth, you do not need to worry about losing.”