Detecting Deception

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Detecting Deception in Forensic Psychology

- Criminal investigations
  - Suspects
  - Accusers
  - Witnesses
- Psych evaluations
  - Pre-employment
  - Fitness for duty
  - Insanity pleas
  - Competence to stand trial
  - Threat assessment

- Employment
  - Interviews
  - Reference checking
  - Internal affairs
- Courtroom testimony
- Hostage negotiation
- Conflict management
- Political survival

Reading People
The "Big Picture"

- Who they normally are
- Who they are now
- Who they want us to believe they are
- Who they think they are

Reading People

- Emotion
- Personality
- Character
- Motivation
- Deception

Communication Modes

- Words
- Paralanguage
- Non-verbal cues
- Artifacts
- Use of time
- Use of space
- Physiological responses

Warning Signs

- Impression management attempts
- Attempts to hide information
- Attempts to delay
- Attempts to distract
- "Unusual" behavioral cues
- Statements that don't make sense
- Attempts to "sell"
- Motivations to lie
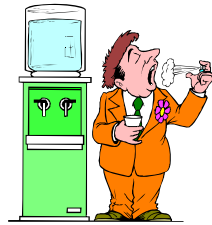
Impression Management Attempts

- Ingratiation
- Self-promotion
- Intimidation
- Exemplification (martyr)
- Supplication (weakness)
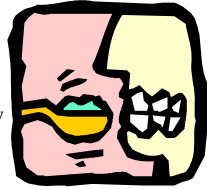
Historical Methods of Detecting Deception

- India- Trial by Sacred Ass
- Arabs - Hot iron to tongue
- Chinese - Swallow rice flour
- Hindus - Chew rice and spit
- Inquisition - Chew and swallow a slice of bread and cheese
- Judicial torture in Europe
- King Solomon

Modern Methods for Detecting Deception

- Electronic Methods
  - Polygraph
  - Voice stress analyzer
- Neurological Methods
  - Brain fingerprinting
  - Brain mapping
- Extreme Methods
  - Chemicals
  - Torture
- Communication
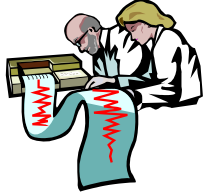 - Actual words used
  - Paralanguage
  - Body language

Electronic Methods

Voice Stress Analyzer and the Polygraph

The Polygraph

- History of Measures
  - 1915 William Marston   Systolic blood pressure

  - 1921 John Larson   Systolic blood pressure
                              Respiration

  - 1938 Leonarde Keeler   Systolic blood pressure
                              Respiration
                              Galvanic skin reflex

- Question Types
  - Relevant/Irrelevant
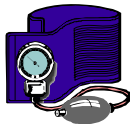 - Control Question
  - Guilty-Knowledge Test

The Polygraph

Question Types
  - Relevant/Irrelevant (John Larson)
    - Relevant (did you kill your wife)
    - Irrelevant (is your watch blue)
  - Control Question (Fred Inbau and John Reid)
    - Neutral
    - Control
    - Relevant
  - Guilty-Knowledge Test (David Lykken)

The Polygraph

Accuracy of the Control Question Method

	innocent	guilty	Meta-analysis
44 lab studies	65.4%	74.0%	
22 field studies	71.6%	86.9%	
14 mock trials	66.0%	74.0%	Kircher et al. (2005)

– Countermeasures (e.g., biting tongue, foot tensing, counting sheep) seem to reduce the accuracy

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The Polygraph

Accuracy of the Guilty Knowledge Test

Meta-Analysis	K	Innocent	Guilty
MacLaren (2001)	22	82%	83%
Elaad (1998)	15	81%	96%
Lykken (1998)	8	88%	97%
Raskin (1997)	5	86%	99%

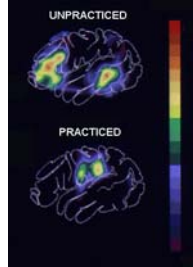---
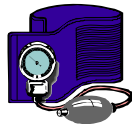
Neurological Methods
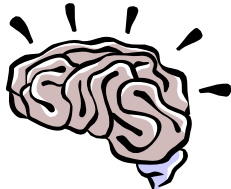
Brain mapping and
brain fingerprinting

Brain Mapping

- Glucose activity increases in brain areas being used
- Activity is detected by a PET scan
  - Red & yellow = very active
  - Blue = less active
- Different tasks such as creating and memory produce different brain activity

UNPRACTICED

PRACTICED

Accuracy of Brain Mapping

- Kozel et al (2005)
  - Used MRI
  - 61 subjects
  - Accuracy was 91.8%

Brain Fingerprinting

- Theory
  - Developed by Lawrence Farwell
  - Difference between innocent and guilty is the memory of the crime stored in the brain
  - A brain wave called the Memory and Encoding Related Multifaceted Electroencephalographic Response (MERMER) shows the memory
  - Most psychologists call this wave the P300

Brain Fingerprinting

- Technique
  - Collection of crime scene photos
  - Collection of brainwaves when viewing photos or words
    - Target pictures/words
    - Irrelevant pictures/words
    - Probe pictures/words
- Research
  - Research on 120 subjects in 4 studies had 100% accuracy

Brain Fingerprinting

- Forensic Examples
  - Terry Harrington
    - Life sentence in Iowa for murder
    - Brain fingerprinting indicated innocence
    - Judge allows evidence admissible
  - James Grinder
    - Accused of rape
    - Brain fingerprinting indicated guilt

Actual Words Used

Potential Deception
The Actual Words Used

- Show signs of rehearsal
- Contain few details
- Don't make sense
- Imply a desire to "get the person"
- Suggest coaching

Signs of Rehearsal
True Statements Have

- Unstructured production

- Spontaneous corrections

- Unexpected problems or interruptions

Details

- False statements have
  - Few details
  - An unusually large number of details
- True statements have
  - Many details
  - Unusual details related to the event
    - The attacker had a strange odor
    - She burped real loud before she hit me
  - Superfluous details unrelated to the event
    - I had been watching Regis that morning so I was in a good mood
    - I had been to Burger King that morning and they forgot to give me a straw.

Details

- True statements also have
  - Contextual embedding
  - Descriptions of interactions
  - Reproduction of conversation
  - Related external associations
  - Accounts of subjective mental state
  - Attribution of perpetrator's mental state

Details:Contextual Imbedding

- Events are placed in time and location
- Actions are connected with other daily activities
- Examples
  - I was passing the Kroger when I heard the gunshot
  - I was watching Family Feud, which I always do at 4:00 p.m., when I heard a loud scream
  - The phone call caused me to be late for a lunch with my friend Sally

Details: Descriptions of Interactions

- Action of A ⟹ Reaction of B ⟹ Reaction of A
- Examples
  - I moved toward the door, he stepped in front of me, I ran the other way
  - He glared at me, I glared back, he started to smile
  - I left him a message, he didn't call back, I called him again
- Deceptive statements are often general
  - We stared at each other
  - He never called me back

Details: Reproduction of Conversation

- Truthful Statement
  - I said. "We should see other people." He replied that, "He would not let that happen."
  - I asked her why she was lying. She said that she wasn't lying, and I said, "yes you are."

- Deceptive Statement
  - We discussed our relationship

  - She denied that she was lying

Details: Related External Associations

- Conversation that is not part of the alleged offense, but refers to other similar events
- Examples
  - He said that it was more difficult to get the last person to agree
  - She told me that this was not going to be like the situation at her last job
  - He told me that others thought they could stop him, but they never could

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Details: Subjective Mental State

- Describes feelings or thoughts
- Examples
  - I was very scared
  - Her actions made me nervous
  - I felt humiliated
  - He made me so angry

Details: Attribution of Perpetrator's Mental State

- Describes the perpetrator's feelings or thoughts experienced at the time of the incident
- Examples
  - You could see in his eyes how angry he was
  - The way he held his head let you know that he thought he was in control
  - She seemed confused, and perhaps a bit guilty about what she was doing

Clarity

- False statements
  - Don't make sense
  - Contain satellites
- True statements
  - Have a logical structure
  - Contain details characteristic of the offense
  - Are told with an appropriate affect
  - Are consistent with the laws of nature
  - Are consistent with other statements
  - Are consistent with other evidence

Motivation

- A liar gives the sense of wanting to "get" the person
- A person telling the truth
  - Admits a lack of memory
  - Raises doubt about their own testimony
  - Pardons the other person/perpetrator
  - Does not seem susceptible to suggestion
  - Misunderstands details that they accurately report

Signs of Coaching
People Being Deceptive

- Use inappropriate language
- Use inappropriate knowledge

Third-grader's jingle is a prize wiener

   Kelsey Griswold is the winner of the Oscar Mayer Jingle Jam Talent Search, to be announced today. As such, the 8-year old third-grader from Broken Arrow, OK will receive a $20,000 college scholarship, appear on the Rosie O'Donnell Show Thursday, and have her ditty recorded by singer Monica. Her winning lyrics:

   Oh, I wish I were an Oscar Mayer Wiener

   Then the buns would really relish me

   I would make the mustard glad

   And the other Wieners sad

   And Oscar Mayer would stand up and shout with glee

USA Today, Dec 5, 2000

Behavioral Cues

Paralanguage and Body Language

Behavioral Indicators Will Only Be Successful If

- You have a baseline of behavior
- There is a consequence for getting caught
- The response is spontaneous
- The person does not believe the lie (e.g., Clinton, O.J.)
- The lie involves a high degree of cognitive complexity

Common Behavioral Cues to Detect Deception

- Changes from normal
- Attempts to delay
- Attempts to conceal
- Increased signs of arousal
- Signs of unclear thinking
- Attempts to distract
- Attempts to "Sell"
- Attempts to control nonverbal behaviors
- communication channel discrepancies
- Expressions that don't make sense

Changes from Normal

- Normal = personality
- Change = mood

Attempts to Delay

- Signs of delay
  - Longer delays in responding
  - Signs of thinking that should not be necessary
  - Repeating questions
  - Speaking slower
  - More silent periods
- Questioning Methods
  - Conundrum
  - Forgiving the person

Attempts to Conceal

- Shorter answers
- Little detail
- Uncooperative behavior; refusal to answer
- Slouched posture, leaning back
- Does not provide definitive answer to a question
- Appears guarded, places hand over mouth or covers eyes
- Posture shifts away from other person
- Mumbles
- Doesn't ask questions in return
- Downplays something that normally be interesting and important

Gary Condit Interview

Chung Do you know what happened to Chandra Levy?
Condit No, I do not.

Chung Did you have anything to do with her disappearance?
Condit No, I didn't

Chung Did you say anything or do anything that could have caused her to drop out of sight?
Condit You know, Chandra and I never had a cross word.

Chung Did you kill Chandra Levy?
Condit I did not

Gary Condit Interview

Chung Ann Marie Smith said that she had a yearlong relationship with you and that you asked her to lie about it. True?

Condit I didn't ask anyone to lie about anything.

Chung Why would you want her to say that she didn't have a relationship with you?

Condit Because she didn't

Chung You're saying that she completely fabricated this?

Condit She's taken advantage of this tragedy. So she gets to have her moment of publicity, of financial gain.

Increased Signs of Arousal

- Voice pitch is higher
- more speech errors
- increased grooming gestures
- frequent swallowing
- fast or shallow breathing
- increased rate of eye blinks
- increased body movements and postural shifts
- pupil dilation
- rigid posture

Signs of Unclear Thinking

- Increased grammar errors
- Repeating sentences
- Increased use of fillers (ah, um)
- Not finishing sentences
- Stories that don't make sense

Attempts to Distract

- More self-disparaging remarks
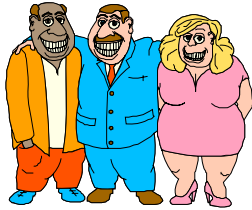- Few factual statements about self
- Changing the subject

Attempts to Sell

- "to be honest with you"
- "to tell the truth"
- overly polite behavior
- Gestures that seem overly stiff or artificial
- Saying " it was not me" rather than "it wasn't me"
- Saying "I would never do that. It is not who I am."

Attempts to Control Nonverbals

- Stiff and rigid posture

- Increases in microexpressions

- Closed rather than open body posture

Communication Channel Discrepancies

- Don Knotts Syndrome
- Examples
  - smiling face and angry voice
  - calm face and clenched hands
  - pointing down and saying "he went upstairs"

Expressions That Don't Make Sense

- Shoulder shrugs
- Eye muscles not involved when showing happiness
- No forehead expression when showing fear or sadness
- Head nods, emotions, and gestures should occur before or during the point being made, not after
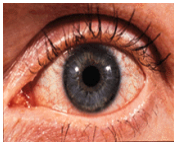- Expression comes to a sudden end or lasts longer than normal
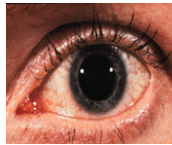- Reaction is too strong

The Eyes

Pupil Dilation

- Increased processing load evokes greater pupil dilation responses
- Pupil size provides a measure of the processing load associated with deceptive responses
- Pupil dilation indicates interest or arousal

Normal Pupil   Dilated Pupil

Meta-Analysis Results
Freed (2002)

Study	N	d
Berrien et al. (1942)	32	.85
Heilveil (1976)	12	1.22
Lubow & Fein (1996)	20	-.01
Lubow & Fein (1996)	51	.82
Dionisio et al. (2001)	24	1.67
Mean effect size (d)	139	.89

Eye Movements

- No support for the notion that "looking left" when answering indicates deception
- Increased blinking is a sign of arousal and possible deception

Individual Differences: Who can Best Detect a Liar?

Aamodt & Custer (2006)

Are Professionals Better than Students?

Group	K	N	Accuracy %
Teachers	1	20	70.00
Criminals	1	52	65.40
Secret service	1	34	64.12
Psychologists	4	508	61.56
Judges	2	194	59.01
Cops	12	655	55.30
Federal officers	4	341	54.54
Students	156	11,647	54.22
Detectives	7	758	50.80
Parole officers	1	32	40.42
TOTAL	175	13,317	54.35

Is Confidence Related to Accuracy?

Confidence	K	N	r	95% CI		SE%
				L	U	
Total	58	6,315	.05	.02	.08	76%

Is confidence related to accuracy?	Yes
Size of the relationship?	Small
Can we generalize the findings?	Yes

Is Experience Related to Accuracy?

Variable	K	N	r	95% CI		SE%
				L	U	
Experience	13	1,163	- .08	-.14	-.03	100%

Is experience related to accuracy?	Yes
Size of the relationship?	Small
Can we generalize the findings?	Yes

Is Age Related to Accuracy?

Variable	K	N	r	95% CI		SE%
				L	U	
Age	17	2,025	- .03	- .07	.01	100%

Is age related to accuracy?	No
Size of the relationship?	
Can we generalize the findings?	Yes

Is Sex Related to Accuracy?

Sex	K	N	d	95% CI		SE%
				L	U	
Overall	53	6,023	-.03	-.33	.26	62%
Law Enforcement	13	833	.10	-.33	.52	58%
Students/Other	40	5,190	-.06	-.30	.18	68%

Note: A positive "d" indicates men were more accurate than women

Is sex related to accuracy?	No
Size of the relationship?	Small
Can we generalize the findings?	No

General Research Findings

- People usually detect deception at slightly above chance levels
- Subjects have a "truth bias" when responding
- Individual differences are minimal
- Training can help, but…
- Having a baseline is essential
- Listeners are better than interrogators
- Use of patterns rather than single cues is essential
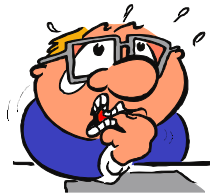- Statement validity assessment is more accurate than the use of behavioral cues

False Confessions

Reasons for False Confessions

- Voluntary
  - for notoriety
  - relieve guilt about other problems
  - due to mental illness
  - protect the real criminal
  - don't think they can prove their real innocence
- Escape interview pressure
- Interview pressure causes suspect to believe he is guilty