

# Forensics and Open Source Intelligence

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# Forensics

- Use of science and technology to investigate and establish facts in criminal or civil courts of law

## Forensic Psychiatry

- A medical subspecialty that includes research and clinical practice in the many areas in which psychiatry is applied to legal issues

- **Criminal Areas** ( Ability to Stand Trial; Insanity; Sentencing; Prison and Jail issues; Juvenile Justice)
- **Civil Areas** (Competence; Guardianship; Involuntary Treatment; Psychic Injury and Disability; Malpractice; Standards of Care; Custody and Parental Fitness)

# Usual Approach to Forensic Evaluation

- Identification of the person/explanation of any limits to confidentiality
- Direct observation
- Series of in person interviews
- Formal (Interactive) mental status exam
- Review of writings and/or other available communications/ ancillary interviews
- Review of collateral material / including medical and legal materials
- Use of other exams including psychological testing / medical evaluation / lab and imaging studies
- Provide consultation/ report that is unique to one person

# Open Source Intelligence (OSINT)

- Information that is publicly available, including but not limited to information derived from the Internet (such as social networking sites, emailed communications, list serves, blogs, web based communities, video sharing sites, etc.); written, audio and visual media; publicly accessible data and records; professional and academic materials; and even geospatial information.

# Forensic Psychiatry and Open Source Intelligence

Practicalities

Possibilities

Problems / Possible Limitations

# Practicalities

- “Communication technology is...a central fixture within our society and has radically changed individuals’ social interactions, learning strategies, and choice of **entertainment.**” Misna et al. (2012) “It just crept in”: The digital age and implications for social work practice. *Clinical Social Work journal*, 40(3), 277-286

# Explosion of Social Media

“A group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and allow the creation and exchange of user generated content.”

Kaplan and Haenlein (2010)



# Possibilities

**Data-driven approaches to personality modeling and assessment** (i.e. associations between Facebook activities and user's personality as has been seen with extroversion and neuroticism in studies by J. Shen et al, Computers in Human behavior 45 (2015) 32-38)

**Change in the nature of social science research** (allows for rapid observational and interactive research across large, geographically dispersed populations, including patients with mental illness, as discussed by N. Lafferty & A. Manca in International review of Psychiatry, April 2015; 27 (2): 85-96)

- Could develop better and even more directed user interfaces and content
- Could help to improve targeted development of customized teaching/learning materials, for students of forensic psychiatry, and education of the public
- Can raise awareness about mental illness and improve public attitudes toward MH issues
- Could influence human behavior in individuals and across groups

# “Big Five” Model of Personality

(Costa & McCrae, 1992, Four ways five factors are basic. Personality and Individual Differences, 13, 653-665)

- extraversion
- neuroticism
- openness to experience
- agreeableness
- Conscientiousness

Can be predicted from public information  
shared on Facebook!

(Golbeck et al., Proceedings of 2011 Annual conference on human factors in Computing Systems-CHI'11, Vancouver, BC. 253-262)

# Social Media

- 86% of online adults in USA and 79% in Europe use it
- 2.3 billion registered users for 10 most popular social networking sites

# Social Media can be used by Psychiatrists too....

- To advocate for the profession
- To improve and better distribute educational materials to train new clinicians
- To advocate for patients
- As a therapeutic tool

International Review of Psychiatry, April 2015: 27(2): 167-173, S. Daviss et al., My three shrinks: personal stories of social media exploration.

# AMA Policy on Professionalism in Social Media (2011) warns...

“despite the range of positive uses of Internet communication media for both individual physicians and the profession as a whole, there are also a number of **areas of ethical concern** that should be considered, notably **boundary issue in physician–patient relationships, privacy and confidentiality**, the implications of the **nature and scope of information available online**, and **physicians’ self-presentation online**.”

# Social Media

- Has moved people toward person based interactions rather than place based
- Has changed ways of communicating and socializing, and acquiring information
- Provides expanded support groups for the mentally ill and their families
- Encourages expressive writing
- Can help to identify high risk individuals and connect them to resources

# Differences between Online and Offline Social interactions

## Being Online

- Increases anonymity
- Reduces importance of physical appearance
- Reduces barriers due to geography
- Gives more control over time and pace of interactions

McKenna and Bargh (2000), Plan 9 form cyberspace. The implications of internet for personality and social psychology. Personality and Social Psychology Review, 5(1), 57-75



# Social Media Use and Participation

- May affect participation in civil and political arenas
- Is a forum for gathering information, often without actively seeking it
- Information may be believed more because it has been filtered through trusted sources

# Social Media Use and Psychopathology

- Individuals with **high anxiety/social anxiety** use it more often, especially when feeling negative, and worry more as to how they are perceived by others .J. Oldmeadow et al. Computers in human behavior 29 (2013) 1142-1149
- There is mixed research on the relationship between use and **depression**
- People with mental illness use social media much like anyone else

“Researchers have long measured people’s thoughts, feelings, and personalities using carefully designed survey questions, which are often given to a relatively small number of volunteers. The proliferation of social media...offers alternative measurement approaches; automatic content coding at unprecedented scales and the statistical power to do open-vocabulary exploratory analysis.”

H.A. Schwartz and L.H. Ungar, Annals, AAPSS, 659, May 2015, Data driven analysis of social media: a systematic overview of automated methods.

# Social media language use can be linked to psychological correlates

- Huge sample sizes
- Occurs in natural settings, and captures communication among friends and acquaintances
- Offers ongoing sampling and can be retroactively accessed
- Primary topic is people talking about themselves
- Present both true selves and idealized selves

G. Park et al., Journal of Personality and Social Psychology 2015, Vol. 108, No. 6, 934-952, Automated personality assessment through social media language

# Three Quick Case Related Examples

# Social Media/ Youth Violence

- Cyber-bullying/victimization
- Electronic dating aggression/ cyber-stalking
- Gang violence
- Cyber-suicide

D. Patton et al. ,, Computers in Human Behavior 35 (2014) 548-553, Social media as a vector for youth violence: A review of the literature.

# Recording and Posting Illegal Material

Drouin and Miller study in Computers and Human Behavior 48 (2015) 608-614: Why do people record and post illegal material? Excessive social media use, psychological disorder, or both?

13% of sample posted illegal activity

28% recorded or were present during such

Excessive use of social media

Presence of ASPD more common

# Internet Banging

- Term used to describe online behavior of gang affiliated persons in the USA
- Supported by technical anonymity / social anonymity / decreased social restraints/ increased hostility and inappropriate behavior
- Internet easily used for “posturing”
- Supports collective group dynamic leading to a collective identity

Desmond Patton et al. Computers in Human behavior 29 (2013) A54-59, Internet banging: new trends in social media, gang violence, masculinity and hip hop.



# Problems / Possible Limitations

- **Ethical Concerns:** what is your obligation to intervene if personal safety issue or legal issue arises? (Taylor, H.A et al. (2014). Ethical implications of social media in health care research. American Journal of Bioethics, 14, 60-61
- **Impact of communication technology on adolescent development remains unclear** (F.D. Barth, Clinical Soc. Work J (2015) 43:201-208)

- Biased samples
- Data often not representative of population (few young or old folks)
- Identifies correlations not causality
- Risk of ecological fallacies can remain

- Can lead to **misconceptions about mental illness** and it's connection to crime / violence, which in turn can **increase stigma** and incorrectly **impact public policy**
- Higher use **leads to lower performance on tasks due to distraction**, interruptions and trouble refocusing

S. Brooks, Computers in Human Behavior 46 (2015) 26-37

- Privacy risks are often underestimated.  
Benefits of self-disclosure are  
overestimated.

Brandimarte et al. (2013), Misplaced confidences , privacy and control paradox. Social and Psychological and personality Science, 4(3). 340-347.

“If you want to keep a secret you must also hide it from yourself.”

George Orwell, 1984

What we get, and get to study is the  
language use of people.

Overwhelmingly this is self report,  
often accompanied by amplified  
emotion.

- **From a Forensic Psychiatry perspective:** the field and study of Open Source Intelligence is expanding rapidly.
- It is **highly dependent on analysis of samples of language**, presented sometimes in the form of conversation or communication between two or more individuals who know, or do not know, each other; but more often as written thoughts and the posting of pictures or videos, of a single individual, upon which readers or viewers must impose their own interpretation.

Take it from a Forensic Psychiatrist...

“...if thought corrupts language,  
language can also corrupt  
thought.”

George Orwell, 1984



- Since observing, listening and communicating, review of collateral information from multiple sources, and figuring out the reliability and validity of the presentation is, and has always been, the bread and butter of practicing psychiatry and forensic psychiatry- I predict that there we have much offer to, and much to be learned from our partners in research and law enforcement of this topic as we move forward.

# Social Media Fatigue

A tendency to back away from social media when you feel overwhelmed by too much information coming at you.

# QUESTIONS ?

