The Insider Threat

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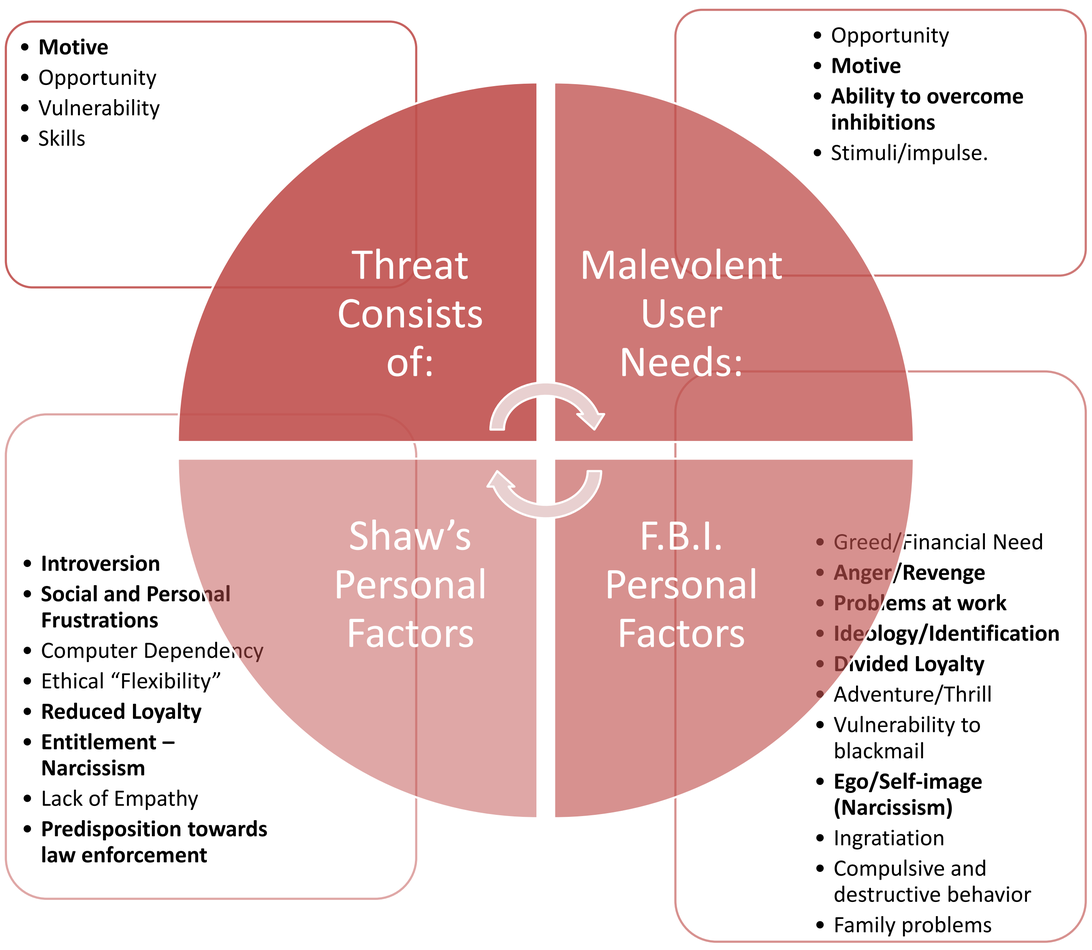
Introduction

- **Insider threat:** Demanding problem in cyber/corporate security.
- **Malevolent insider:** Trusted user who violates security policy [1].
- Three major **fronts** in the battle against insider threat [2]:
  - Prediction
  - Detection
  - Prevention - Deterrence

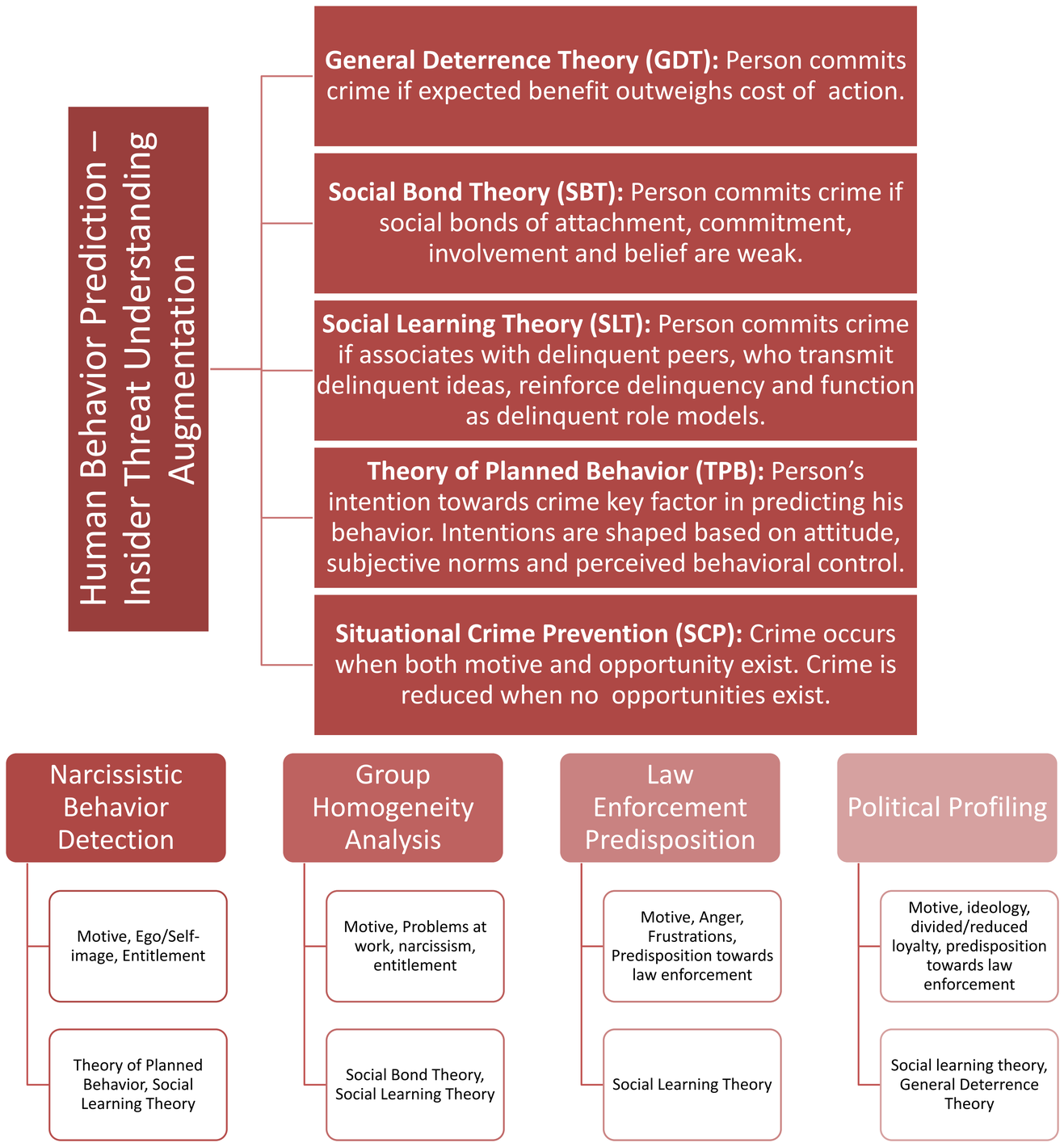


Detection

- Numerous ideas, methods and techniques have been proposed (IDSs, honeypots, honey tokens, network sensors, log file analysis etc.).

Prediction

- Perform automated evaluations via social media & Open Source INTelligence.
- Examination of the predisposition towards malevolent behavior via Social Media.
- Draw conclusions over users' psychosocial traits to predict their behaviour [3].



Twitter - Narcissism

- 41.818 fully crawled users (tweets, profile state, number of: lists, followings and followers, favorites, mentions, retweets).
- Predict the insider threat [4].
- Detect psychosocial characteristic of narcissistic behavior.
- Utilize usage deviation characteristics via graph theoretic analysis.
- Group homogeneity analysis.

YouTube

- 12.964 fully crawled users (profile, uploaded videos, subscriptions, favorite videos, playlists), 207.377 videos (license, number of likes/dislikes, category, tags) and 2.043.362 comments.
- Predict the insider threat.

Predisposition towards Law Enforcement

- Detect negative predisposition towards law enforcement and authorities [5].
- Utilize machine learning, content analysis and usage deviation.
- 2 different approaches:
- Comment/user classification and flat data classification results converge.

Ideology - Divided Loyalty

- Political profiling conclusion extraction [6].
- Radical – Neutral – Conservative clusters.
- Utilize machine learning and content analysis of the dataset.
- Achieved 87% accuracy.
- Developed Panopticon method.
- Highlight ethical issues.

Conclusions

- Interdisciplinary approach towards the solution.
- User/usage profiling leads to classifying users into predefined categories.
- **Ethical** and **legal issues** arise (personality and privacy rights of affected persons).
- Intrusive nature dictates confined application to CI and key, decision-making personnel.
- This topic combines well with similar experience and publications of our Lab [8-12].

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