Converting Police Footage into Actionable Data: Developing a Research Lab

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The Complex Social Interactions Lab
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Outline of Development Stages

1. Initial Development Stage
   - The Need for a Research Lab
   - WSU’s Criminal Justice & Criminology Department
   - Grand Challenge Seed Grant
   - Interdisciplinary & Intercolligate Research Team

2. Gaining Data Access
   - Legal, Institutional, & Organizational Challenges
   - Multiple Stakeholder Involvement in Approval Process
   - Justified Use of Unredacted BWC Footage

3. Securing and Managing Data
   - Security & Confidentiality Protocols
   - Infrastructure to Manage Data
   - Annotation Software System

4. Using BWC Footage as Data
   - Provisional Patent for Technology Automating BWC Analysis
   - Practical Benefits to Police Agencies and Policing Research
• Why Develop a Research Lab Analyzing BWC Footage?
  - Limitations of previous research: field observations; incident reports
  - Agencies lack the resources to review the many hours of BWC footage recorded

• Mission
  - The Complex Social Interactions (CSI) Lab is committed to developing new behavioral science methodologies and technologies that can be utilized in real world applications to investigate police officer decision-making and interpersonal interaction by examining unredacted footage recorded by officer body-worn cameras.
Stage 2: Gaining Data Access

- **Sensitive Nature of Data**
  - Development of technology only possible with unredacted footage

- **City Attorney and City Manager**

- **Office of Research and Support Operations**

- **Office of Research Assurance**
  - Institutional Review Board – Full Board Review

- **Police Agency**
  - Chief of Police; Police Guild
  - Memorandum of Understanding and Data Use Agreements

- **Data access contingent on implementing specific security protocols**
**Stage 3: Managing Data**

- **Securing Data Access**
  - Web-based cloud storage system
    - Two-stage identification process; frequent audits of system access; restricted IP access; firewall system; locked private lab space; computers password protected

- **Securing Data Confidentiality**
  - Data anonymized
  - Inclusion criteria protocol: interactions occurring in public space
    - Excludes: Hospitals, residence, agency, and victim statements/interviews
    - Annotators prohibited to annotate videos in which they know the individual
  - Research team and annotator requirements
    - The Collaborative Institutional Training Initiative (CITI)
    - Confidentiality Agreements
    - Background Security Clearance
Stage 3: Managing Data

- **Research Plan**
  - Milestones and funding looking two years out

- **Lab Space**
  - Furniture; locked
  - Technology
    - IT support; high-speed internet; access to a computing cluster for processing
    - Equipment: computers; noise canceling headphones

- **Lab Personnel**
  - Research assistant for managing the lab; annotators

- **Protocol for Annotating Footage**
Annotation Software System Development

Training on Annotation Software

Videos Screened by Lab Manager

Videos Assigned to Pairs of Annotators

Tier 1

Does Event Occur?

Time of Event

Tier 1 Verification

Duration of Events

Tier 2

Contextual Information of Events

Tier 2 Verification

Changes Associated with Events

Tier 3

Tier 2 and 3 Consensus Verification
Training on Annotation Software

One-Hour Trainings in Groups of Four

Train on Identifying All Events that Could Occur

Opportunities to Practice & Discuss as a Group

Software Allows one to Flag a Video if Questions Arise

Inclusion Criteria: Interactions Occurring in Public Space

Excludes: Hospitals, Residence, Prisoner Transport, and Agency

Videos Assigned to Pairs of Annotators

Two Annotators Independently Annotate Same Videos

Initiates Tier 1 Annotating

For 20 annotators, the time commitment needed of a lab manager is 65 hours a month for four months.

- Trainings; Screening videos; Assigning videos; Office hours
Annotation Software System Development

Tier 1

Does Event Occur?

Tier 2

Time of Event

Annotator Pair Verification

Tier 1 Verification

Tier 3

Duration of Events

Contextual Information of Events

Changes Associated with Events

Tier 2 and 3 Consensus Verification

Tier 2 and 3 Consensus Verification
Example of Annotating Structure

• Tier 1
  - Was the Suspect Searched? If Yes, Time of Search (MM:SS). Yes (5:21)
  - Were Additional Officers Present? If Yes, Time of Additional Officer Arrival (MM:SS). Yes (1:12)
  - Were Bystanders Present? If Yes, Time when Bystander(s) are Present. No

• Tier 2
  - Verify Tier 1 Information (Time of Search, Time of Additional Officer Arrival, No Bystanders Present)
  - Was anything found during Suspect Search? If Yes, Write in Object(s). No
  - Was there Interaction with the Bystander? Did the Bystander use Profanity? Did the Bystander Leave? N/A
Stage 4: Using BWC Footage as Data

Provisional Patent for Technology
Automating BWC Analysis

Practical Benefits to Police Agencies and Policing Research

• Improved understanding of how policing occurs in practice
  - Accounting for contextual, situational and dynamic factors

• Allows police agencies to efficiently review their BWC footage
  - Risk management tool
    • Assess adherence to policy and protocol
    • Evaluate use of force beyond if it happened
  - Cost-Benefit Analysis
    • Evaluate impact of training and interventions
Contact Information

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