High Arousal and the Increased Use of Beta Command Types in Stressful Police Interactions  
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Background

- **Command**: verbal behavior directed toward another person with the goal of obtaining a verbal or physical response
- **Command Types**:
  - **Alpha Command**: direct & clear command
  - **Beta Command**: indirect & ambiguous
- **Narrative Statements**: any statement that does not require any response by the recipient

**Why Command Type is Important**

- Beta commands are most often used in high stress situations
- Beta commands add to the ambiguity of a situation

**Background**

- **Compliance**: a response that is appropriate to the command within 5 seconds of the command being issued
- Alpha commands have been associated with higher compliance rates
- Beta commands have been associated with higher non-compliance rates
Beta Command Cycle

- Beta Command
- Increase Perpetrator and Police Officer confusion and frustration
- Perpetrator confusion and frustration
- Increase beta command use

(Tupy, Marsh, Martin, & Houlihan, 2013)

Heart Rate Categories

- **Average**: heart rate between 50-100
- **Above Average**: heart rate between 101-150
- **Maximum**: heart rate between 151-200

Officer Training

- **Desensitization**: low or average heart rate during a high stress situation compared to baseline
  - Low or average heart rate is defined as falling within or below the *Average* category

- **High Stress**: elevated heart rate during a high stress situation in comparison to baseline
  - Elevated is defined as any heart rate falling within or above the *Above Average* category

Purpose of Current Study

- Determine the rate of alpha vs. beta command usage among officers under stress
- Compare heart rate (stress levels) of officers against command type used
- Investigate the potential need for desensitization training among officers
Current Study

- Total of 94 training simulation videos were obtained by the Force Science Institute (FSI)
- Heart rate data obtained from FSI
- Training videos were of real officers engaged in a training simulation
- IRB approval obtained

Training Simulation Scenarios

- Expected Outcome: unfolds as a ‘routine traffic stop’
- Verbal Aggression: unfolds with perpetrator becoming agitated and verbally aggressive (e.g., yelling)
- Weapon Stimulus: begins similarly to the previous two scenarios - then perpetrator pulls a gun and attempts to shoot the officer

Data Collection – Verbal

- Transcription of the 94 training video simulations
- Trained on the operational definitions of command types (alpha/beta) & narratives
- IOA was assessed before data coding commenced (95% agreement)
- Independently coded the Weapon Stimulus transcriptions
- IOA was assessed after coding was complete

IOA – Verbal

- 45% of the videos were randomly assessed for IOA
- Point-by-point agreement was used
- Achieved IOA of 99% for Transcription accuracy & 92% for Coding
Data Collection Heart Rates

- FSI provided a spreadsheet of participant heart rates
- HR obtained for participants at expected outcome, verbal aggression, and weapon stimulus scenarios
- All officers had the initial heart rate & verbal aggression heart rate recorded
- Only 2 participants did not have the weapon stimulus heart rate recorded for unknown reasons

Heart Rate Comparisons

- Expected Outcome HR mean ($M = 80.60, SD = 13.93$) was significantly lower than Verbal Aggression mean ($M = 116.24, SD = 19.70$), $t(93) = 19.37, p < 0.01$
- Expected Outcome HR mean ($M = 80.60, SD = 13.93$) was significantly lower than the Weapon mean ($M = 123.16, SD = 19.91$), $t(91) = 21.56, p < 0.01$
- Verbal Aggression mean ($M = 116.24, SD = 19.70$) was trending toward being meaningfully lower than the Weapon mean ($M = 123.16, SD = 19.91$), $t(91) = 4.89, p = 0.05$
Example of Participant Heart Rate Change

Heart Rate

Initial Verbal Weapon

Training Simulation Scenarios

Frequency of Command Types

Command Type

Alpha Beta

42% 58%

Verbal Exchanges Overall

Verbal Exchange

Commands Narrative

48% 52%
Discussion: Desensitization

- There was a significant difference found between:
  - Expected Outcome vs. Verbal Aggression
  - Expected Outcome vs. Weapon Stimulus
- Supports previous findings that officers may benefit from desensitization (reality-based) training

Discussion: Command Types

- Overall, Beta commands remain the most frequent type of command, supporting literature findings
- Narratives were the most frequent form of verbal exchange, followed by Beta, & then Alpha commands
- Provides support of the literature that officers may benefit from additional communication training

Discussion: Commands & Heart Rate

- Above Average heart rates were associated with the most commands in general
  - Betas occurred the most frequently with the Above Average heart rate
- Average heart rate was not associated with the use of any Alpha commands – Problematic
- Maximum heart rate was not associated with the use of any Alpha commands - Problematic
Discussion: Commands & Heart Rate

- Beta commands were used during all three heart rate categories (Average, Above Average, & Maximum)
- Beta commands were used the most frequently during the Above Average category - Problematic
- Above Average heart rate was associated with using alpha and beta commands equally – Problematic

Summary

- Officers may benefit from:
  - Education on Command Types
  - Effective Communication training
  - Desensitization procedures (e.g., reality-based training)
- Additional studies needed

Limitations

- Did not compare transcriptions of expected outcome, verbal aggression, & weapon stimuli
- Relatively small sample due to lack of Verbal Exchange or Verbal Sound
- Reactivity may have been an issue for some officers
- Method of measurement for heart rates
- Lack of generalizability

Future Research

- Transcribe the Expected Outcome scenario & the Verbal Aggression scenario
- Replicate the study by the FSI but include desensitization training
  - Use additional means for measuring physiological aspects (e.g., skin conductance, blood pressure, etc.)
  - Use a larger sample
References


Thank you.

Questions?