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USING BEHAVIORAL SKILLS TRAINING TO TRAIN POLICE OFFICERS TO
RESPOND TO INDIVIDUALS WITH AUTISM

by

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USING BEHAVIORAL SKILLS TRAINING TO TRAIN POLICE OFFICER HOW TO
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Dedication

I would like to dedicate this thesis to my nephew and other members of my family.

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ABSTRACT

USING BEHAVIORAL SKILLS TRAINING TO TRAIN POLICE OFFICERS TO INDIVIDUALS WITH AUTISM

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Research indicates that individuals with autism may be more likely to encounter law enforcement due to the various unusual behaviors associated with autism (e.g., stereotypy) (Osborn, 2008). Although individuals with autism are more likely to encounter law enforcement, little research has been conducted on teaching police strategies to gain compliance during these encounters. Additionally, no study has evaluated police officers' performance during these situations. This study addressed these gaps in the literature by assessing the effectiveness of a brief, hands-on training for teaching officers how to gain compliance when encountering individuals with autism. In Experiment 1, behavioral skill training (BST) was used to train three police officers how to deliver prompts and reinforcement for compliance and how to respond to problem behavior. In Experiment 2, two training models, lecture-only and brief BST,

were evaluated with twenty-four police cadets. BST increased correct responding for all participants. These results suggest that BST is an efficient and effective model for training law enforcement in these methods.

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CHAPTER I:
INTRODUCTION

**Using Behavioral Skills Training to Train Police Officers to Respond to Individuals
with Autism**

On July 19, 2017, Connor Leibel, a 14-year-old male with autism, was approached by a local police officer. The police officer suspected that Connor was under the influence of drugs, and within 30 s attempted to detain Connor. However, the encounter between Connor and the police officer quickly escalated, which led the police officer to restrain him (Biscobing & Thompson, 2017). Connor sustained multiple minor abrasions on his back and a severe ankle injury from his encounter with the police officer, which required surgery (Biscobing, 2018). Unfortunately, Connor's encounter with law enforcement is not a unique story within the autism community. By the age of 21, almost 20% of individuals with autism have been questioned or stopped by law enforcement, and nearly 5% of those encounters ended with the arrest of the individual (Rava, Shattuck, Rast, & Roux, 2017). One possible explanation for the high rate of encounters with police officers is that the unusual behaviors exhibited by adolescents and adults with autism (e.g., avoidance of eye contact; repetitive motor movements) are considered socially unacceptable (Osborn, 2008) or perceived as suspicious behaviors. As a result, other individuals (e.g., bystanders or law enforcement) may assume that these individuals are behaving questionably (Brown, n.d.). In addition, officers may not be taught methods to gain compliance of individuals with moderate to severe communication deficits. For example, previous experimenters have not investigated what steps officers should take if an individual is not able to answer questions, does not provide adequate information, or is not following instructions.

Research has examined lecture-based trainings for police officers to assist them in responding to individuals with autism and pointed out the need for more effective training programs (Hepworth, 2018; Kelly & Walker, 2017; Teagardin, Dixon, Smith, & Granpeesheh, 2012). For example, Teagardin et al. (2012) used a video-based training to teach officers about autism and methods to use when interacting with someone on the autism spectrum. The approximately 13-min video included information on the prevalence of autism and behaviors associated with autism (e.g., stereotypy, limited communication, problem behaviors). The recommendations for interacting with an individual with autism included speaking calmly (e.g., in conversational tone), providing clear instructions, and allowing more time for the individual to respond. The video training also included sections on interacting with caregivers, recommendations for restraints, and interviews with officers who were caregivers to individuals with autism. The experimenters measured the participants' knowledge through tests given before the start of training and after the training concluded. The questions on the tests were based on the information provided in the video. The 12 total questions included 10 questions in short-answer format designed to evaluate the participants' knowledge about autism and two questions designed to assess the participants' level of confidence in identifying and interacting with individuals with autism.

Results showed that officers in the training program demonstrated improvement in their knowledge of autism with a mean score of 29% correct responses in the pre-test and 53% correct responses in the post-test. However, Teagardin et al. (2012) concluded that the participants' post-test scores were still below mastery levels. Another limitation of this study is that the authors never tested how the participants would respond to individuals with autism. It is possible that the participants' knowledge increased after receiving the training but that the participants would be unable to apply what they learned

to relevant situations. A final limitation of this study was that the training did not include information about methods to gain compliance across individuals of different functioning levels. For example, the training did not address how officers could attempt to gain compliance from an individual who could not answer questions because they had communication deficits. The results and limitations of this study suggest that training of police officers may need to incorporate more hands-on learning to help officers' responding to reach the mastery criterion for identifying and responding to individuals with autism. Additionally, it would have been beneficial to provide information on gaining compliance with individuals who do not respond to various questions or instructions.

Wolf-Fordhman, Twyman, and Hamand (2014) investigated the effects of an online, interactive training program to teach first responders how to appropriately plan and assist individuals with disabilities before and during emergencies. The online training incorporated a storyline that the participants advanced through to complete. While the participants progressed through the storyline, they learned about the prevalence of individuals with various disabilities (e.g., physical, and mental), the impact disaster situations have on individuals with disabilities, and methods to communicate with individuals with disabilities. The participants were also taught how to locate appropriate resources (e.g., shelters) to plan for and use during emergency conditions. Participants could earn points contingent on their answers to specific disaster scenarios (e.g., flood or explosion) programed in the storyline. The experimenters utilized a pre and post-test to determine the effects of the training on the individual's knowledge. The experimenters found that the online training program increased the participants' knowledge of how to plan for emergency situations and how to respond and interact with individuals with disabilities during an emergency situation. However, the limitation of this study is that

the researchers did not measure participants' performance, only their knowledge of the material taught. Additionally, the training did not contain information on different procedures to follow if individuals were non-compliant to emergency responders in disaster situations.

Kelly and Hassett-Walker (2017) conducted a survey of first responders in New Jersey to examine how many completed the state-mandated training on autism and other "hidden disabilities." The trainings included information on recognizing and responding to individuals with autism. The authors reported that the types of training modalities used in New Jersey included video-based training, internet-based training, in-person training, or a combination of modalities (e.g., in-person with video). The authors found that the most common methods of training received by first responders were video-based training (14%) and internet-based training (24%), which combined was more than in-person based training (25%). The authors also noted that 43% of first responders who participated in the study perceived the training they took as somewhat effective for identifying and responding to individuals with autism, while only 14% reported that the training was highly effective. These findings suggest that video and internet-based learning may not be sufficient for training first responders on how to identify and respond to individuals with autism. Hepworth (2017) similarly pointed out that the online-training method used in England and Wales to train police officers about autism was ineffective. The author noted that the online training provided to law enforcement in England and Wales was 2 hrs and covered other mental illnesses and developmental disabilities in addition to autism. Hepworth also noted that the online training was insufficient because it omitted important details about autism-specific behaviors. However, the trainings examined in these two studies examined the knowledge of the participants and not their responding during encounters with individuals with autism.

Given the current estimated prevalence of autism, there is a need for an effective training methodology to teach law enforcement how to respond to individuals with autism appropriately. Most training programs to date are knowledge based and have not required participants to demonstrate appropriate interactions when encountering individuals with autism. Furthermore, no training to date has taught approaches to establish compliance with individuals who have communication deficits. When law enforcement interacts with someone who has autism, trying to gain compliance before attempting more intrusive measures (e.g., restraining) may be a key component to ensure a safe interaction between the officer and individual. However, some news stories note that law enforcement officers may quickly resort to the use of intrusive measures while interacting with individuals with an autism diagnosis (Biscobing & Thompson, 2017; Toropin & Waldrop, 2020).

For example, in February 2020, a police officer in Fresno, CA responded to a call about an individual with autism who recently had a seizure in a restaurant (Toropin & Waldrop, 2020). When the officer made initial contact with the individual, they immediately attempted to restrain (e.g., handcuff) the individual, which caused the individual's aggressive and resistant behaviors to escalate. For example, more police officers were required to assist with restraining the adolescent once their responding started to escalate (e.g., screaming, vomiting, and pulling away from the officers). Teaching officers how to gain compliance first when interacting with someone who has autism may avoid the need for intrusive measures, which can escalate challenging behaviors.

Behavioral Skills Training (BST) is an evidence-based training approach that combines didactic and performance-based training (Parson, Rollyson, & Reid, 2013). The components of BST include providing a rationale and instructions for a skill, modeling

the skill, rehearsing the skill, and providing feedback on an individual's performance during rehearsal. The rehearsal and feedback components of BST continue until a trainee's performance meets a criterion. Numerous studies have demonstrated the efficacy of BST for training individuals with disabilities (Ledbetter-Cho, Lang, Davenport, et al., 2016; Lerman, Hawkins, Hillman, et al., 2015;), typical developing children (Johnson, Miltenberger, Egemo-Helm et al., 2005; Miltenberger, Flessner, Gatheridge, et al., 2004), educators (Hogan, Knez, & Kahng, 2015; Lerman, Luck, Smothermon, et al., 2019), therapeutic staff members (Sarokoff & Sturmey, 2004; Rosales & Rehfeldt, 2009; Clayton & Headley, 2019), and caregivers (Miles & Wilder, 2009; Stewart, Carr, & LeBlanc, 2007; Alaimo, Seiverling, Sarubbi, et al., 2018) on a variety of skills. However, no research has examined the effectiveness of BST for training law enforcement how to respond to individuals with autism.

The purpose of Experiment 1 was to evaluate the effectiveness of BST to teach law enforcement recommended steps to gain compliance when interacting with individuals with autism. In Experiment 2, the experimenters evaluated an abbreviated version of the training that could be conducted in a group format to make it more practical to be implemented by police departments. Another purpose of Experiment 2 was to compare the performance of participants who received lecture training only to those who received the lecture and a group role-play with feedback. By doing so, the experimenters examined the contribution of the hands-on training to the outcomes.

CHAPTER II:
EXPERIMENT 1

Method

Participants

Three adults participated. Officer Ford was a 42-year-old male sergeant employed at a state public university with approximately 9,000 students and 900 employees. He had worked as a police officer for 16 years and was a certified mental health officer. Officer Ford had participated in approximately 85 – 100 hours of mental health training but reported having no training on autism and fewer than 10 encounters with individuals with autism while in the police force. Officer Carter was a 35-year-old male who was employed as the assistant chief security officer at a public community college with approximately 8,000 students and 500 employees. Officer Carter had worked for law enforcement as a parole officer and security guard for 15 years and had received approximately 8 hours of mental health training. Officer Carter reported that he had two encounters with individuals with autism while working with law enforcement. Officer Benson was a 32-year-old female who worked as a school resource officer at a middle school in a public-school district with approximately 1,300 students and 100 employees. She had been employed as a school resource officer for 6 months and had received 40 hours of crisis intervention training (CIT). Officer Benson reported she had previously encountered approximately four individuals with autism while working in the police force.

Settings

For Officer Ford, the baseline and post-training sessions took place in the lobby of a building on the university that contained two couches, two trash cans, a taped off square, three iPads, and one video camera on a tripod. Training took place in a therapy

room with a one-way mirror, recording equipment, one table, and two chairs. Other materials that were present in the training room were papers for the training, pens, and a laptop for the training. For Officer Carter, baseline and post-training took place in a large classroom at a public community college with multiple tables and chairs, a desk with a computer, a taped off square, and one video camera on a tripod. Officer Carter's training took place in a small office at a public community college with multiple desks and computers, three chairs, a taped off square, and one video camera on a tripod. Other materials that were present in the training room were papers and a laptop for training. For Officer Benson, baseline and post-training took place in a gymnasium at a middle school that contained bleachers, one video camera on a tripod, and a taped off square. Training took place in an office with a desk and cabinets and in a band room that contained multiple chairs, musical stands, and one video camera on a tripod. Other materials that were present in the training room were papers for the training, pens, and a laptop for the training.

Response Measurement

The experimenter recorded all sessions via HIPAA-compliant video recording software (e.g., Vsee or Zoom) or by a camcorder for later scoring. An experimenter collected the primary data in-vivo via paper and pencil and later rescored the recorded videos except for Officer Ford's first two baseline sessions, which were accidentally lost. The experimenter collected data on the number of correct task analysis steps that the participant emitted based on the specific script assigned to the role-play simulation. The experimenter constructed two different task analyses (TAs) for the study. Table 1 lists the steps for the TA related to responding to an individual who is not engaging in problematic behavior.

Table 1
Task Analysis: Non-escalated Situations

Step 1- Approach the individual slowly
Step 2 – Stand at least an arms distance from the individual
Step 3 - Introduce self and state intentions to the individual
Step 4- Build rapport/ test for verbal communication for at least 30 s
Step 5- Ask the individual three safety questions
Step 6- Allow them at least 5 s to reply before asking the next question
Step 7- Rephrase at least one safety questions question
Step 8- If individual complies provide praise
Step 9- If the individual does not respond to the three questions with at least one question rephrased, ask the individual three different movement-based instructions
Step 10- Allow at least 5 -10 seconds to respond to each instruction
Step 11- Rephrase at least one instruction
Step 12- Provide a model or gesture with at least one instruction
Step 13- If individual complies provide praise
Step 14- If the individual does not respond to the movement-based instructions, give the individual at least three imitation instructions
Step 15- Allow at least 5 -10 seconds to respond to each instruction
Step 16- If individual complies provide praise
Step 17- If individual does not respond to imitation instructions, use physical guidance

Table 2 lists the steps for the TA related to responding to an individual who is engaging in problematic behaviors (e.g., screaming/yelling, crying, and dropping to the

ground; excludes motor and vocal stereotypic behavior). The training did not include a TA for individuals who are engaging in dangerous behavior (e.g., aggression, elopement, or self-injurious behaviors) due to law enforcement agencies' requirement that officers follow their own protocols when individuals engage in dangerous behavior.

Table 2
Task Analysis: Escalated Situations

Step 1- Stand at least double arms distance or more away from the individual
Step 2- Wait at least 30s without the occurrence of problematic behavior to approach the individual
Step 3- Go to step one of non-escalated TA

In each role-play simulation, participants interacted with a trained confederate who pretended to have autism and followed a prepared script. In each of the sessions, the experimenter scored each step as correct, incorrect, or not applicable based on the script for the specific session. Data were converted into a percentage of steps implemented correctly by taking the number of steps the participants implemented correctly over the total number of steps possible for each session and then multiplied by 100.

Both of the TAs centered around gaining compliance by probing for different skills. The skills probed included answering safety questions, following movement-based instructions, and following imitation instructions, respectively. These skills were described as a hierarchy with answering questions being the most complex skill and imitation being the least complex skill. The first step in the first TA (hereafter called the “non-escalated TA”) was to approach the individual slowly, which was defined as walking towards the individual and not running towards the individual. The second step was to stand at least an arm’s distance from the individual and not come closer than 1.5

m. The third step was to introduce themselves and state their intentions, which include stating either first or last name (e.g., “My name is John” or “I am officer Smith”) and then saying that they were there to help or a variation (e.g., “I am going to help you”). The fourth step, building rapport/testing for vocal communication, included asking questions about the individual’s interests (e.g., hobbies or favorite color), the surrounding area (e.g., asking “Do you know where you are?” or “What are you doing here today?”), or things in the individual’s possession (e.g., “Do you know the color of your shirt?” or “What kind of toy do you have?”) for at least 30 s. Building rapport/testing for vocal communication also include making general statements about the individual or surrounding area (e.g., saying “I like the color of your shirt,” “I like how you are staying so calm,” or “It’s a really nice day out”). Questions and instructions excluded from building rapport/testing for vocal communication included asking safety questions and giving motor or imitation instructions.

The fifth step in the first TA was asking a minimum of three different safety questions. If the participant asked more than three safety questions, it did not count as an incorrect response. Safety questions were defined as any question that pertained to acquiring relevant personal information from the individual (e.g., “Where do you live?,” “What is your phone number?,” “What is your name?”). Questions about the individual’s intentions (e.g., “What are you doing here?” “What is wrong?”) did not count as a safety question. The sixth step was to wait 5 s between each safety question before asking another safety question. For example, after asking the safety question “What is your name?” 5 s had to elapse before the officer asked another safety question. The seventh step was to rephrase at least one safety question that had already been asked. For example, if the participants asked the safety question “Where do you live?,” a rephrased question could be “What is your address?” or “Where do you stay?”. If the participants

asked a safety question rephrased three times (e.g., “What is your name?,” “Tell me your name?,” and “What is your first name?”), it would be scored correct for asking two different safety questions (step five) and for rephrasing at least one question (step seven). The experimenters’ rationale for scoring two of three safety questions correct if participants rephrased the same safety question three times was to ensure that participants would ask a variety of different safety questions.

The eighth step, providing praise for compliance, was defined as saying a praise statement (e.g., “Good job” or “Nice job”) if the individual complied to any safety question asked. Step nine was to give at least three different movement-based instructions if the individual did not respond to at least three safety questions, with one safety question being rephrased contingent on no response. The definition of movement-based instructions was asking the individual to engage in a one-step motor response (e.g., “Sit down.” “Come here,” “Stand up”). It did not count as a movement-based instruction if the instruction did not specify an overt behavior (e.g., “Calm down”). As with safety questions, step 10 was to wait at least 5 s between each instruction given and step 11 was to rephrase at least one movement-based instruction. Step 12 was to provide a gesture or model of the movement-based instruction with at least one movement-based instruction combined with a gesture or model (e.g., saying “Stand up” while also gesturing with either one or two hands in an upward motion). Step 13 was to provide praise if the individual complied to any of the movement-based instructions. Step 14 was to provide at least three different imitation instructions if the individual did not respond to at least three different movement-based instructions with at least one instruction rephrased and provided with at least one model or gesture. The definition for an imitation instruction was providing the instruction “Do this” and modeling the desired response (e.g., saying “Do this” and then clapping hands together). Step 15, waiting 5 s between instructions,

was identical to steps six and 10. Step 18, providing praise for compliance, was the same as steps eight and 13. The final step in the non-escalated TA was to use physical guidance if the individual did not respond to imitation instructions. The definition of physical guidance included touching an individual in order for them to engage in a response. For example, an individual could touch the back of an individual's arm to have the individual stand up or touch an individual on their shoulder to guide them to a specific location. Officers Carter and Benson did not practice physical guidance during role-play training because the experimenter removed the step after Officer Ford completed the training. The experimenter removed the step of physical guidance after they consulted with a mental health trainer at a metropolitan police department. The trainer advised that physical guidance was considered a last resort and could not be simulated within the time frame of the role-play sessions.

The first participant, Officer Ford, was taught to build rapport/test for vocal communication only if the individual did not answer any safety questions. After Officer Ford completed the training, the experimenter moved the step building rapport/test for vocal communication higher in the TA. The experimenter moved building rapport/testing for vocal communication because building rapport first with an individual may assist with gaining compliance.

The second TA (hereafter called the "escalated TA") included all of the steps in the non-escalated TA and steps to take when an individual engaged in problematic behaviors. The first step in the escalated TA was defined as standing at least 3 m from the individual. The second step was to approach the individual after at least 30 s had elapsed without the occurrence of problematic behavior (e.g., screaming, crying, or flopping). The remaining steps were identical to those in the non-escalated TA, starting with step one.

Reliability

A second, trained observer collected data for the purposes of obtaining interobserver agreement. IOA was determined by comparing the data records on a step-by-step basis, totaling the number of steps with agreement, and dividing total agreement by the total number of agreements plus disagreements on the steps required for that session and then multiplied by 100. The observer collected data during baseline for 33%, 50%, and 40% of sessions for Officers Ford, Carter, and Benson respectively. The interobserver agreement for Officer Ford was 86% in baseline, and the mean IOA for Officers Carter, and Benson in baseline was 86%, 82% (range, 80%-84%), and 85% (range, 83%-86%), respectively. The observer collected data post-training for 33% of sessions for each participant. Mean IOA for Officers Ford, Carter, and Benson in the post-training was 86%, 97%, and 100%, respectively.

Procedural integrity

A second, trained observer collected data for the purposes of obtaining procedural integrity on the experimenter implementing the role-play with feedback phase for 30% of sessions with Officer Ford, 43% of sessions with Officer Carter, and 38% of sessions for Officer Benson. Data were collected on providing immediate corrective feedback for steps missed during the first five sessions and providing at least one immediate praise statement for each of the first five sessions. Data were also collected on providing delayed feedback after first five role-play sessions ended, with the exception of Officer Benson. The observer did not collect procedural integrity on the experimenters delayed feedback during the first five sessions with Officer Benson because the recordings of the role-play sessions ended prematurely. The observer scored components of procedural integrity that were not recorded as not applicable. Delayed feedback included providing at least one praise statement based on participants' responding and at least one corrective

feedback statement based on participants' responding. For sessions with delayed feedback only, procedural integrity data were collected on providing at least one praise statement based on participants' responding and at least one corrective feedback statement based on participants' responding after a session ended. The observer also collected data on the experimenter for not providing feedback during the role-play sessions with delayed feedback. For Officer Ford, the experimenter only provided delay feedback during the role-play with feedback phase. For Officer Benson, the observer did not collect procedural integrity on the experimenters delayed feedback during role-play sessions with delay feedback because the recordings of sessions ended prematurely. The observer scored components of procedural integrity that were not recorded as not applicable. The data were collected by taking the number of components implemented correctly and divided by the total number of opportunities to implement a component multiplied by 100. The mean procedural integrity of the experimenter in role-play with feedback was 100% for Officer Ford, 62% (range, 50%-71%) for Officer Carter, and 67% (range, 25-100%) for Officer Benson. The experimenter consistently erred on providing corrective feedback to participants on steps seven, 11 , and 16 in the non-escalated TA. Because procedural integrity was based on the opportunity to provide feedback, the sessions with low procedural integrity had few opportunities to provide feedback. Therefore, when the experimenter did not provide feedback correctly, it lowered procedural integrity.

The experimenter also collected data on the confederate's responding for of each phase of the training. The experimenter collected data on the confederate responding as listed on the script for the specific session. The experimenter collected data on the confederate's responding for engaging in the different problematic and non-problematic behaviors, the form of communication (e.g., verbal or non-verbal), and complying to

different questions or instructions based on the specific script. The experimenter collected procedural integrity data on the confederate's responding in baseline for 33%, 50%, and 40% of sessions for Officers Ford, Carter, and Benson, respectively. Procedural integrity of the confederate in baseline was 100% for Officer Ford, and the mean procedural integrity was 100% for Officer Carter, and 76% (range, 71%-80%) for Officer Benson. The experimenter collected procedural integrity data on the confederates responding in the role-play with feedback phase for 30%, 43%, and 38% of sessions for Officers Ford, Carter, and Benson, respectively. Mean procedural integrity in role-play was 87% (range, 60%-100%), 79% (range, 75%-80%), and 90% (range, 80%-100%) for Officer Ford, Carter, and Benson, respectively. The experimenter collected procedural integrity data on the confederate's responding in post-training for 33% of sessions for each participant. Procedural integrity for the confederate in post-training was 100% for all participants.

Social Validity

After the completion of the training, each participant filled out a survey to determine the acceptability of the training. Officer Ford completed a paper survey, which the experimenter gave to him after the post-training. Officer Ford returned the survey in a sealed envelope to the experimenter after he completed it. Officers Benson and Carter completed an electronic survey, which was sent to them after they completed the post-training. Table 3 lists the questions included in the social validity survey. The first five questions asked participants to use a 5-point Likert-type scale to rate how prepared they felt when encountering an individual with autism before and after the training and the acceptability of the lecture, role-plays, and the steps in the task analyses. The survey also included open-ended questions requesting the participants to explain what they liked the most and least about the training and to provide recommendations to enhance the training.

Table 3
Social Validity Survey Questions

Ratings on a 5-point scale for items 1 through 5 and responses for items 6 through 8.

Items
1. How prepared did you feel encountering an individual with autism before the training? (1= not prepared; 7=very prepared)
2. How prepared do you feel encountering an individual with autism after the training? (1= not prepared; 7=very prepared)
3. How helpful did you find the lecture portion of the training? (1=not helpful; 5=very helpful)
4. How helpful did you find the extra training (role-plays with feedback)? (1=not helpful; 5=very helpful)
5. How acceptable do you find the recommended steps to be? (1= not acceptable; 5= highly acceptable)
6. What aspect(s) of the training did you like the most?
7. What aspect(s) of the training did you like the least?
8. Do you have any recommendations to enhance the training?

Procedures

Scripts

The experimenter created different scripts for the confederate that required the participants to follow the steps listed in the first TA (non-escalated), second TA

(escalated with problematic behaviors), or both (non-escalated to escalated). The experimenter created 15 scripts, five non-escalated scenarios, five escalated scenarios, and five non-escalated to escalated scenarios. Within the non-escalated scripts, a confederate engaged in various non-problematic behaviors that are characteristic of individuals with ASD (e.g., pacing, vocal or motor stereotypy, and not responding to questions). In the escalated scripts, a confederate engaged in various problematic behaviors (e.g., screaming, flopping, negative vocalizations, and stopping feet). The confederate's communication skills also varied across scripts (i.e., none, minimal, or more extensive vocal speech). The number of steps relevant for each script varied, as it depended on the confederate's responding. For example, in one script, the confederate could answer the safety questions, so the participants did not need to progress to other instructions. In contrast, when the confederate did not respond to safety questions or movement-based instructions, the participant had to progress up to imitation instructions.

The experimenter created condensed versions of the scripts, which the confederates held in their hands while the session was conducted. The condensed script listed the behaviors the confederate would engage in and the type of instruction the confederate would respond to (e.g., safety questions, movement-based instructions, or imitation instructions). The dimensions of the condensed scripts were 11.43 cm by 10.16 cm and the scripts were printed on white paper and laminated.

Baseline

The experimenter told each participant that they were responding to a call made about an individual believed to have autism. Additionally, the experimenter provided a brief description of behaviors the confederate was currently engaging in (e.g., body rocking, not responding to questions, or screaming/crying) based on the specific script

being used. The experimenter told participants the goal was to get the individual to the taped-off square on the floor, which represented a safe place. The participants were informed they could end a session at any time by saying they would like to stop or that they did not know what else to do. A session was terminated after 5 min had elapsed, the participant got the confederate into the taped area, or the participant asked to stop the session, whichever came first. The experimenter did not provide feedback to participants.

Training

The experimenter provided an oral lecture with a PowerPoint presentation. The experimenter separated the lecture into three different sections, which covered the characteristics of autism, steps to take during an encounter, and recommended strategies for interacting with caregivers. The section on autism characteristics included information about the prevalence of autism and an overview of an autism diagnosis. Additionally, the experimenter categorized different behaviors associated with autism as non-problematic (e.g., echolalia, pacing, or delayed echolalia), problematic (e.g., screaming, yelling, flopping, or hitting items off the ground), and dangerous (e.g., aggression, self-injury, elopement, property destruction).

The experimenter also described how different instructions vary in complexity, thus making it more difficult for individuals with autism to respond or comply. The experimenter categorized the types of instructions as a hierarchy, which ranged from the most complex to the least complex. The experimenter noted that the most complex instructions were asking safety questions. Asking safety questions were listed as the most complex because it requires that an individual have a form of communication (e.g., vocal verbal, sign language, or picture exchange) to answer the safety question and know the answer. For example, it may not be possible to help/prompt an individual to answer

safety questions if the information is unknown to the individual asking questions. Next, the experimenter noted that movement-based instructions were moderately complex. Movement-based instructions were described as moderately complex because it requires that an individual knows the vocal instruction, but it is possible to help/prompt the individual to comply by providing models or gestures. Finally, the experimenter described imitation instructions as the least complex instructions. Imitation instructions were listed as the least complex because imitation instructions do not require that individuals have extensive receptive or expressive language abilities. Additionally, imitation skills are often one of the first skills taught to individuals with autism as part of educational and therapeutic interventions.

The experimenter then explained the different steps (TAs) to take when encountering individuals with autism or someone suspected to have autism and the importance of following each step. The experimenter also gave an 8.89 cm by 5.08 cm size text prompt to Officers Carter and Benson that listed a condensed version of the recommended steps for both TAs. The text prompt was incorporated into the training after Officer Ford completed the training. Figure 1 displays the front text prompt and Figure 2 displays the back of the text prompt given to participants.

Figure 1
Text Prompt (Front)

<p>When encountering an individual with autism remember S.M.I.P</p> <p>Safety questions (Rephrase one)</p> <p>Movement Instructions (Rephrase one)</p> <p>Imitation (Say “Do this”)</p> <p>Physical guidance</p> <p>Ask at least three of each and provide praise for each instance of compliance!</p>

Figure 2
Text Prompt (Back)

If the individual is engaging in problematic behaviors

1. Give them space
2. Wait at least 1 minute with no problematic behavior to approach (use watch /count in head)
3. Have conversation for at least 1 minute
4. After conversation move to S.M.I.P

Provide praise for each instance of compliance!

The participants had access to the text prompt during the role-play sessions and the post-training sessions. After the experimenter finished explaining the steps, the experimenter showed video models that demonstrated the different steps. The videos showed an actor playing the role of a police officer following the relevant TA for the specific situation (e.g., non-escalated, escalated with problematic behavior, and non-escalated to escalated with problematic behavior). In the video models, the actors demonstrated all the steps within the TAs with the exception of providing praise contingent on compliance to a question or instruction, so the experimenter provided an in-person demonstration of providing praise contingent on compliance before the start of the role-play sessions. In the last section of the training, the experimenter provided recommendations for building rapport with caregivers and providing resources to the caregiver that may be helpful (e.g., organizations such as Autism Speaks, Autism Now, Hope for Three, and Autism Society of America).

Following the lecture, the participants role-played with a confederate who did not serve as the confederate in the baseline or post-training sessions. Before the start of role-play sessions, the experimenter told the participant they were responding to a call about an individual believed to have autism and described the different behaviors the confederate was engaging in. The role-play sessions started once the participant entered

the room. The role-play session ended after the participant got the confederate into the taped off area. Similar to baseline, a confederate followed different scripts for each session. The experimenter provided corrective feedback to the participant following each of the first five role-play sessions on the steps that the participants missed while in role-play. If the participant implemented the steps correctly within the first five role-play sessions, the experimenter provided intermittent praise. At the conclusion of each first five sessions, the experimenter provided delayed feedback based on the participants responding during the role-play session. After the first five role-play sessions, the experimenter provided only delayed feedback once a role-play session ended. The experimenter provided delayed feedback by providing at least one praise statement and one form of corrective feedback based on the participant's performance in the session. If the participant asked to see a model of the correct response, the experimenter demonstrated the correct response before the start of the next session. Finally, the participants continued role-play sessions until the participant completed at least 80% of the steps correctly across three sessions with at least two situations involving problematic behavior and two consecutive sessions with delayed feedback. The participants could ask questions throughout the lecture and role-plays.

Post-training

The post-training condition was identical to baseline, with the exception that the specific scripts used in the post-training were not used in either baseline or role-play. The confederate who pretended to be an individual with autism in the post-training condition was either a new confederate or the same confederate as in baseline. The mastery criterion was considered to be three consecutive sessions with correct responding at 80% or above.

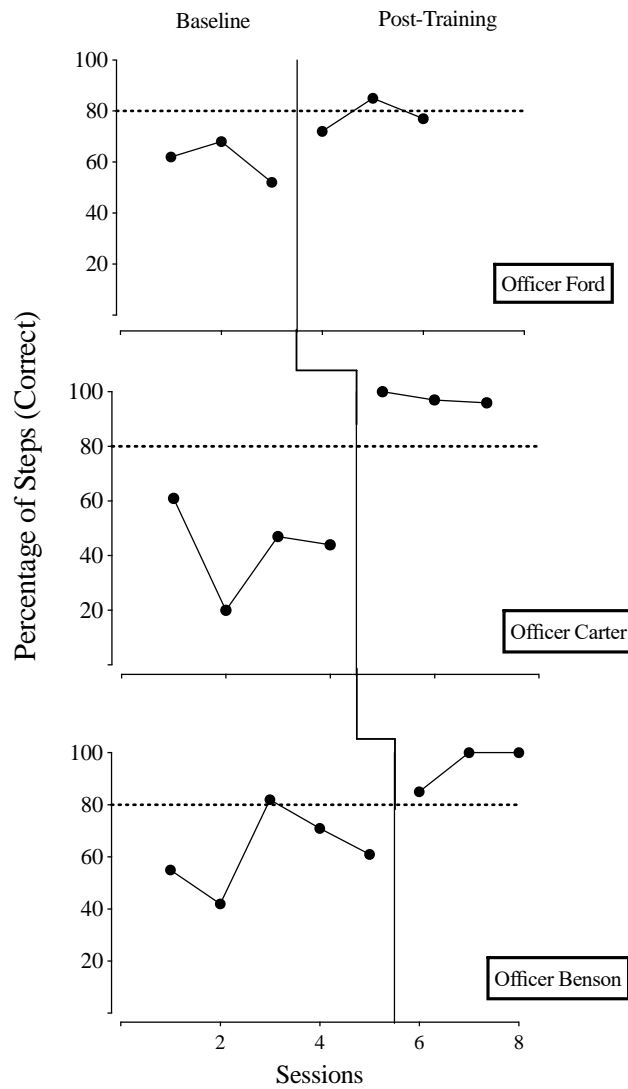
Experimental Design

The experimenter used a single-subject, nonconcurrent multiple baseline design across participants to evaluate the effects of the training on the officers' correct performance of the TA steps.

CHAPTER III:
RESULTS AND DISCUSSION

The results for each participant are displayed in Figure 3.

Figure 3
Experiment 1 Results



The results for Officer Ford are displayed in the top panel of Figure 3. In baseline, Officer Ford's mean percentage of correct responding was 61% across three sessions.

Officer Ford's responding met the mastery criterion after 13 role-play sessions with feedback. In the post-training, Officer Ford's mean percentage of correct responding was 78% across three post-training sessions.

The results for Officer Carter are displayed in the middle panel of Figure 3. In baseline, Officer Carter's mean percentage of correct responding was 43% across four sessions. Officer Carter's responding met the mastery criterion after seven role-play sessions with feedback. In post-training, Officer Carter's mean percentage of responding was 98% across three post-training sessions.

The results for Officer Benson are displayed in the bottom panel of Figure 3. In baseline, Officer Benson's mean percentage of correct responding was 62% across five sessions. Officer Benson's responding met the mastery criterion after eight role-plays sessions with feedback. In the post-training, Officer Benson's mean percentage of correct responding was 95% across three post-training sessions.

Table 4 lists the participants' responses on the social validity survey. The participants' mean rating was 2 for how prepared they felt when encountering an individual with autism before the training (question one) and 4.7 for how prepared they felt after the training (question two). The participants' mean rating was 5 for how helpful the lecture portion of the training (question three). The participants' mean rating was 5 for the acceptability of the role-play sessions (question four). The mean rating was 4.7 for the acceptability of the steps (question five). All of the participants' responses indicated that they liked the role-play scenarios the most (question six). Two participants' responses to the question of what they like the least (question seven) pertained to the length of the training. None of the participants had any recommendations to enhance the training (question eight).

Table 4
Social Validity: Experiment 1

Ratings on a 5-point scale for items 1 through 5 and responses for items 6 though 8. NR means no response was given.

Item	Officer Ford	Officer Benson	Officer Carter
1. How prepared did you feel encountering an individual with autism before the training?	2	3	1
2. How prepared do you feel encountering an individual with autism after the training?	5	4	5
3. How helpful did you find the lecture portion of the training?	5	5	5
4. How helpful did you find the extra training (role-plays with feedback)?	5	5	5
5. How acceptable do you find the recommended steps to be?	5	4	5
6. What aspect(s) of the training did you like the most?	The roleplay interactions	Role-play	I really loved the role-playing. It helped out a lot because it was hands-on and not just sitting in a classroom all day
7. What aspect(s) of the training did you like the least?	The length of the process but that was due to scheduling conflicts	The length of the training	NA
8. Do you have any recommendations to enhance the training?	No it was well structured	NA	NR

Overall, all the participants in Experiment 1 had an increase in correct responding after BST. Additionally, two of the three participants' responding met the mastery criterion following the role-play sessions. Officer Ford's responding was just below the mastery criterion during the post-training phase. One explanation for Officer Ford's responding could be that they were the only participant who did not receive immediate feedback during the role-play with feedback phase. It is possible that immediate feedback is crucial during initial sessions for ensuring that performance maintains. Another explanation for Officer Ford's responding is that they did not have access to a text prompt during the post-training phase. It is possible that the text prompt assisted Officers Carter and Benson during post-training. Overall, these data suggest that BST is an

effective method to teach officers the steps recommended to take when responding to individuals with autism.

Although the participants rated the training as acceptable, the length and format of the training may be challenging to implement within typical police training. For example, most trainings for police officers occur in a group format and may not offer multiple opportunities for individuals to practice in role-play while receiving feedback. It seemed essential to evaluate the training in a format that could be adopted into the current training for police officers. In Experiment 2, the experimenter conducted a condensed version of the training within a group format and within the current training received by police cadets.

CHAPTER IV:
EXPERIMENT 2

Method

Participants

Twenty-four adults participated in Experiment 2. The experimenter recruited participants from a metropolitan police academy. The participants were police cadets whose ages ranged from 21 years to 33 years. At the time of the study, the participants were completing a 40-hour Crisis Intervention Training (CIT) course, which is a requirement of cadet training. Participants were recruited from two separate CIT classes (12 from each of two different classes). The participants within each of the classes were completing their CIT course at different time periods. The experimenter divided the 12 participants from each class into two groups based on their baseline performance to ensure that one group did not include participants with higher levels of baseline responding. Each group received a different format of training (lecture-only or lecture plus role-play). To match the two groups within a class, the experimenter entered the participants' responding in baseline into an Excel file and sorted the data in ascending order (e.g., smallest percentage to highest percentage). The experimenter then assigned each participant to the lecture-only group or the lecture plus role-play group in sequential order. In Class 1, the experimenter originally recruited 16 participants. After baseline, four participants, two from each group, voluntarily dropped from the study due to time constraints noted by the lead trainer at the academy. Police cadets at the police academy are required to have at least two different role-play scenarios for CIT training. The lead trainer expressed concern that participants would not have another role-play scenario after their post-training session due to the format of the role-play used at the police academy. The experimenter did not choose which participants dropped from Class 1 and

was unable to control for baseline performances. Participants in the lecture-only groups served as a control for the effects of repeated exposure to response measurement (i.e., baseline and post-training sessions). In addition, a comparison of responding across the two groups might indicate the contribution of the role-play component to the training outcomes.

Settings

The baseline and post-training sessions for participants in Class 1 took place in a computer classroom at the police academy. The classroom contained multiple computers, chairs, a table, a desk, and a taped off square on the ground. The baseline and post-training sessions for Class 2 took place in a classroom at the police academy. The classroom contained ascending rows of chairs, a protector, a front desk with a computer, and a podium. The lecture portion of the training for both classes took place in a classroom that contained ascending rows of tables, chairs, a protector, a front desk with a computer, and a podium. The group role-play training took place in another classroom located at the academy and was the same for participants in the lecture plus role-play group for Class 1 and 2. The classroom contained rows of tables and chairs, a projector, a front desk with a computer, and a podium. Other materials present in the baseline, post-training, and role-play rooms included a tripod with a camcorder, papers for the training, pens, and pencils.

Response Measurement and Data Collection

All sessions were video recorded for later scoring. An experimenter collected the primary data in-vivo via paper and pencil and later rescored recorded videos. Dependent variables and response measurement procedures were identical to those in Experiment 1. However, participants' responding was based on the escalated TA only.

Reliability

A trained observer collected data for 50% of the participants' baseline and post-training sessions for each of the two experimental groups. The experimenter determined IOA in the same manner as that described in Experiment 1. Mean IOA for participants in Class 1 was 84% (range, 83%-86%) in baseline and 91% (range, 81%-96%) in post-training for those in the lecture-only group, and 85% (range, 80%-90%) in baseline and 98% (range, 96%-100%) in post-training for those in the lecture plus role-play group. Mean IOA for participants in Class 2 was 91% (range, 85%-95%) in baseline and 87% (range, 80%-93%) in post-training for those in the lecture-only group, and 85% (range, 83%-86%) in baseline and 99% (range, 97%-100%) in post-training for those in the lecture plus role-play group.

Procedural Integrity

Procedural integrity data were collected as in Experiment 1, except for the step of fading to only delayed feedback after the first five role-play sessions because the participants only received one role-play session each before post-training. The experimenter collected procedural integrity on 50% of sessions in each phase per group across both classes for both experimenter and confederate integrity. Mean procedural integrity of the experimenter in the group role-play phase was 43% (range, 0%-100%) for Class 1 and 67% (range, 50%-80%) for Class 2. The experimenter consistently erred on providing corrective feedback to participants for the steps in the TA that required participants to allow time for the individual to respond to questions/instructions (steps seven, 11, and 16 in the non-escalated TA).

For Class 1, mean procedural integrity of the confederate was 100% in baseline, 78% (range, 67%-86%) during the group role-play training, and 100% during post-training. For Class 2, mean procedural integrity for the confederate was 78% (range,

67%- 83%) in baseline, 94% (range, 83%-100%) in group role-play training, and 95%, (range, 71%-100%) during post-training.

Social Validity

After the completion of the training for the two classes, each participant filled out a survey to determine the acceptability of the training. The survey was given on paper and filled out by the participants. The experimenter instructed the participants not to include their names on the survey. The experimenter was not present in the room while the participants filled out the survey. After the completion of the survey, the participants put them in a pile. The questions were the same in Experiment 1. However, the question about the role-play was omitted for the lecture-only groups because they did not receive a role-play with feedback session.

Procedures

Scripts

The experimenter used escalated scripts only. The escalated scripts were the same as in Experiment 1. The same escalated script was used in both baseline and post-training for both classes of participants. An additional four escalated scripts were used during the group role-play across both classes.

Baseline

The experimenter conducted baseline identical to that in Experiment 1 except that all participants had one baseline session, and the same baseline script was used with all participants for both classes.

Lecture Training

The experimenter provided the lecture to all participants and approximately 60 other police cadets simultaneously for both classes. The information in the lecture training was identical to that in the first experiment. After the lecture, the two groups separated, and one of the groups received a group role-play training with the experimenter as described in the next section.

Group Role-Play with Feedback

The experimenter provided each participant the text prompt with the steps listed on it at the start of the role-play phase. Additionally, the experimenter provided each participant a clipboard with a document that listed the steps to take during the role-play encounter. The experimenter instructed the participants to use the checklist while they watched a different participant practice in role-play with a confederate. For example, if the participant in role-play did a step correctly, the participants not in role-play would check off that step as correct, and if a step was incorrect, they would not check off the step. While a participant was in role-play, the experimenter provided immediate corrective feedback if a step was incorrect and at least one praise statement for a correct response. All six participants in each class received one role-play practice with immediate feedback. The group role-play session was completed in 30 min for each class. Participants in Class 1, lecture plus role-play group, received the group role-play with feedback on the same day as the lecture training. Participants in Class 2, lecture plus role-play group, received the group role-play with feedback one day after the lecture training. The experimenter conducted the group role-play a day after for Class 2 due to a global pandemic that occurred at the same time of the experiment, which caused scheduling disruptions at the police academy.

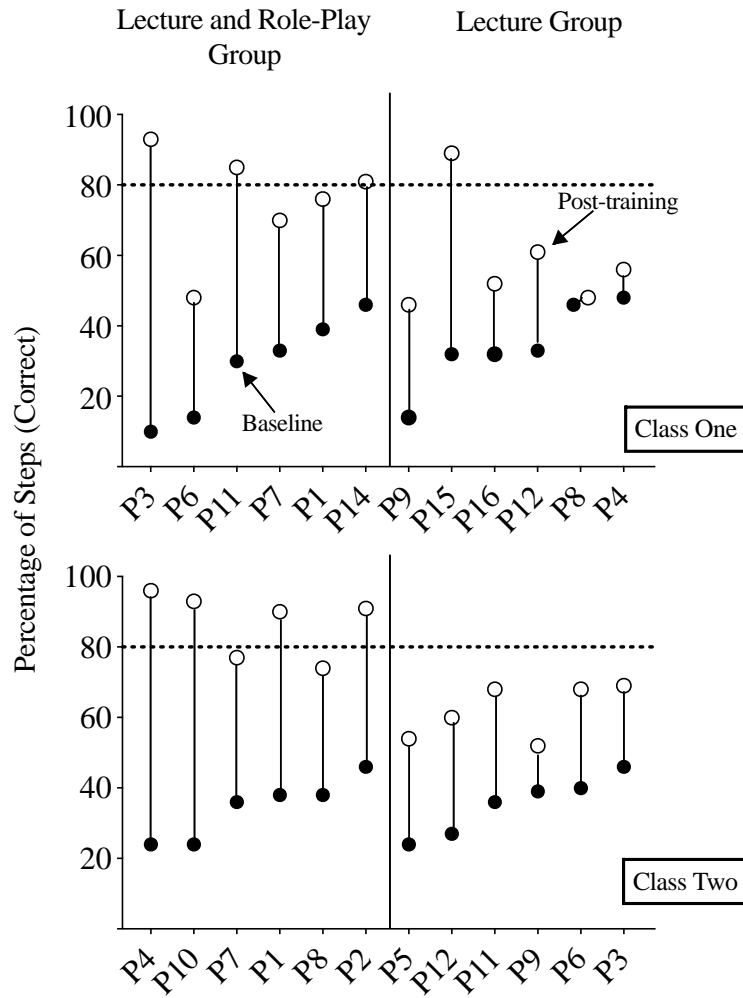
Post-training

The post-training condition was identical to baseline, with the exception that participants in lecture plus role-play groups in both classes could use the text prompt during the post-training. Post-training sessions for Class 1 were conducted the same day as the lecture and group role-play session approximately 90 min after the lecture training. Post-training for Class 2 was conducted approximately 24 hrs after the lecture training. The experimenter conducted the post-training sessions the day after for Class 2 due to a global pandemic that occurred at the same time of the experiment, which caused scheduling disruptions at the police academy. To be consistent with Experiment 1, the mastery criterion was completing at least 80% of the steps correctly.

CHAPTER V:
RESULTS

Results for each participant in the two classes are displayed in Figure 4.

Figure 4
Experiment 2 Results.



The top graph displays the participants' responding in Class 1 and the bottom graph displays the participants' responding in Class 2. Across both graphs, the participants' responding in the lecture plus role-play groups are displayed on the left side

of the graph, and the participants' responding in the lecture-only groups are on the right side.

Mean responding in baseline for participants in Class 1, lecture-only group, was 34% (range, 14%-48%), and the mean responding for participants in the lecture plus role-play group was 27% (range, 10%-46%). The participants' mean responding during post-training was 59% (range, 46%-89%) and 76% (range, 48%-93%) for the lecture-only group and the lecture plus role-play group, respectively. The mean percentage increase from baseline to post-training was 25% for the lecture-only group and 49% for the lecture plus role-play group. Additionally, one participant's responding in the lecture-only group met the mastery criterion in the post-training phase, and three participants' responding met the mastery criterion in the lecture plus role-play group.

Mean responding in baseline for participants in Class 2, lecture-only group, was 35% (range, 24%-46%), and the mean responding for participants in the lecture plus role-play group was 34% (range, 24%-46%). The participants' mean responding during post-training was 62% (range, 52%-69%) and 88% (range, 74%-96%) for the lecture-only group and lecture plus role-play group, respectively. The mean percentage increase from baseline to post-training was 27% for the lecture-only group and 54% for the lecture plus role-play group. Additionally, zero participants' responding in the lecture-only group met the mastery criterion in the post-training phase, and four participants' responding met the mastery criterion in the lecture plus role-play group.

Table 5 lists participants' responses from the social validity survey from Class 1, lecture-only group. Table 6 lists participants' responses from the social validity survey from Class 1, lecture plus role-play group. Table 7 lists participants' responses from the social validity survey for Class 2, lecture-only group. Table 8 listed the participants' responses from the social validity survey from Class 2, lecture plus role-play group.

Table 5

Ratings and Responses on Social Validity Questionnaire: Experiment 2 Class 1 Lecture-only Group.

Ratings on a 5-point scale for items 1 through 5 and responses for items 6 though 8

Item	Response 1	Response 2	Response 3	Response 4	Response 5	Response 6
1. How prepared did you feel encountering an individual with autism before the training?	2	2	1	2	2	4
2. How prepared do you feel encountering an individual with autism after the training?	5	3	4	4	5	3
3. How helpful did you find the lecture portion of the training?	5	4	5	4	5	5
4. How acceptable do you find the recommended steps to be?	4	4	5	4	5	3
5. What aspect(s) of the training did you like the most?	Individual training where we were explained step by step	The actors' realism	I enjoyed how detailed and organized the ppt presentation was Ms. Karlie explained how to work with autism consumers well	The lecture and the steps that helped us deal with autism	Learning the correct steps to helping the individual	The actors
6. What aspect(s) of the training did you like the least?	None/ all very useful training	That the woman was nonverbal	I thought it was good all together	Overall I enjoyed the training	When we were told the steps to take and couldn't thoroughly go through and see if the individual would respond	Could not guide or touch the actor the 2 nd time
7. Do you have any recommendations to enhance the training?	More private group training	No suggestions	no	A variety of scenarios	Change the second scenario some to keep us on our toes	Being able to identify more signs of autism

Table 6

Rating and Responses on Social Validity Questionnaire: Experiment 2 Class 1 Lecture Plus Role-Play Group

Ratings on a 5-point scale for items 1 through 5 and responses for items 6 though 8.

Item	Response 1	Response 2	Response 3	Response 4	Response 5	Response 6
1. How prepared did you feel encountering an individual with autism before the training?	2	1	1	2	2	3
2. How prepared do you feel encountering an individual with autism after the training?	5	5	5	5	4	5
3. How helpful did you find the lecture portion of the training?	5	5	5	5	4	5
4. How helpful did you find the extra training (role-plays with feedback)?	5	5	5	5	5	5
5. How acceptable do you find the recommended steps to be?	4	4	5	5	4	5
6. What aspect(s) of the training did you like the most?	The practice scenarios. The scenario we did before receiving any training on the first day	I liked how realistic the training was. It gave a realistic experience of what it will be like to interact with someone with autism	The scenarios	The card helps walk us through the scene	Realism of the exercise/scenario. Simplicity of the layout for how to address someone with autism.	The role-play we did the second time
7. What aspect(s) of the training did you like the least?	None, it was all very informative	I would have liked to have more time, versus only 5 mins. Also, possibly practicing with someone who actually has autism would be a lot more helpful	None. Great Job	Going in with no training	The specific address without understanding how to address anomalies	Just being thrown into the scenario the first time blindly
8. Do you have any recommendations to enhance the training?	no	Same as above	nothing!	More small group walk throughs	if possible, how to address a non-stationary individual	Just more group training

Table 7

Ratings and Responses on Social Validity Questionnaire: Experiment 2 Class 2 Lecture-only Group

Ratings on a 5-point scale for items 1 through 5 and responses for items 6 though 8. NR means no response was given.

Item	Response 1	Response 2	Response 3	Response 4	Response 5	Response 6
1. How prepared did you feel encountering an individual with autism before the training?	1	NR	3	2	1	2
2. How prepared do you feel encountering an individual with autism after the training?	4	NR	4	3	3	5
3. How helpful did you find the lecture portion of the training?	5	NR	5	4	5	5
4. How acceptable do you find the recommended steps to be?	5	NR	5	4	4	5
5. What aspect(s) of the training did you like the most?	I liked that we got to actually work with it	Hands on training	The hands-on portion. It was good to go face to face with possible scenarios	The opportunity to do the scenario twice, once time being after I took the training class	Hands on training	Learning how to properly communicate with someone who has autism
6. What aspect(s) of the training did you like the least?	Feeling that I couldn't do it	Everything was great	There was nothing in the training I felt negatively about	The nonverbal, it made it more difficult to know if the lady understood. But it was definitely needed for experience	Feedback during the hands-on portion	No complaints
7. Do you have any recommendations to enhance the training?	No	No	Perhaps more critique of our performance. Just to have a better understanding of thing to improve on	Scenarios with both escalated and non-escalated	One scene should be talked through prior to being tested	NA

Table 8

Ratings and Responses on Social Validity Questionnaire: Experiment 2 Class 2 Lecture plus Role-Play Group

Ratings on a 5-point scale for items 1 through 5 and responses for items 6 through 8

Item	Response 1	Response 2	Response 3	Response 4	Response 5	Response 6
1. How prepared did you feel encountering an individual with autism before the training?	1	3	3	1	1	1
2. How prepared do you feel encountering an individual with autism after the training?	4	5	5	2	4	3
3. How helpful did you find the lecture portion of the training?	5	4	5	3	5	5
4. How helpful did you find the extra training (role-plays with feedback)?	5	5	5	5	5	5
5. How acceptable do you find the recommended steps to be?	5	5	5	5	5	5
6. What aspect(s) of the training did you like the most?	The scenario aspect of the training	The walk through of how to talk to a person with autism	Distancing and patience	During the scenario I was corrected on the spot	The extra training	The extra role-play
7. What aspect(s) of the training did you like the least?	Doing the first scenario without the training because I felt completely lost	Nothing	The scoring sheet	Classroom	thought it was all great	The 1st encounter
8. Do you have any recommendations to enhance the training?	Nope, Great Training	Can't think of any	More time on the scene	None	More extra training	Extra role-plays

Participants in the lecture-only group across both classes had a mean rating of 2 for how prepared they felt encountering an individual with autism before the training, and 3.9 for how prepared they felt after the training. The participants' mean rating was 4.8 for the helpfulness of the lecture portion of the training. The mean rating was 4.4 for the acceptability of the recommended steps. Some of the participants' recommendations included having more private group training(s), adding a variety of scenarios, providing

more feedback on performance, and walking through of a scenario before testing their performance.

Participants in the lecture plus role-play group across both classes had a mean rating of 1.8 for how prepared they felt encountering an individual with autism before the training and 4.3 for how prepared they felt after the training. The participants' mean rating was 4.7 for the helpfulness of the lecture portion of the training and 5 for the helpfulness of the role-play with feedback. The mean rating was 4.8 for the acceptability of the steps. Some participants' responses to the question of what they liked about the training included the role-play scenarios, the text prompt, immediate feedback during role-play, and the simplicity of the recommended steps. Some recommendations provided included more group training and practicing with someone who has autism.

CHAPTER VI: GENERAL DISCUSSION

Overall, all the participants in Experiment 1 displayed an increase in correct responding from baseline to post-training and two of three participants met the mastery criterion in the post-training after they received BST. Additionally, the participants in Experiment 2 in the lecture plus role-play group had a higher percentage of correct responding compared to participants in the lecture-only group. Seven cadets' responding in the lecture plus role-play group met the mastery criterion but only one cadet's responding met the mastery criterion in the lecture-only group across both classes. These data suggest that role-play with feedback is a crucial component in teaching individuals the recommended steps to take when encountering individuals suspected to have autism. The results of Experiment 2 also suggest that the abbreviated training is effective in increasing participants' correct responding and the training model can be implemented within mental health trainings conducted by police departments.

To the author's knowledge, this is the first study that provided an autism training to police officers that specifically used a hands-on behavioral method. Within the previous literature on this topic, researchers used knowledge-based learning to evaluate the effectiveness of autism training with police officers. This study is unique because the training combined autism awareness training with methods and steps to gain compliance with individuals who have communication deficits. Additionally, this training provided hands-on training to have the participants practice the steps to gain compliance with individuals with different skill sets. This study differed from previous studies because the experimenter tested participants on the application of the training instead of knowledge. Additionally, the second experiment directly compared the effects of the lecture alone to the effects of the lecture combined with a group role-play with immediate feedback.

Another relevant finding for Experiment 1 and Experiment 2 is the high acceptability of the training model. Participants from both Experiment 1 and Experiment 2 provided a mean acceptability rating of 5 out of 5 for role-play sessions with feedback. Additionally, all three participants in Experiment 1 and eight participants in Experiment 2 noted that the role-play sessions were what they liked the most in the training. The high acceptability of the role-play sessions and the results from both experiments suggest that more time should be allocated to performance-based training for mental health training.

A possible implication of this study is that police departments should incorporate more performance-based training into their mental health trainings. Currently, CIT courses are 40 hrs long and the approximately 32 hrs are dedicated to didactic training methods and approximately 5 and a half hrs are dedicated to role-play scenarios (Texas Commission on Law Enforcement [TCOLE], 2018). CIT refresher courses are 8 hrs and do not require any role-plays (TCOLE, 2015) . Although it is important for police departments to provide information on mental health and strategies to use during encounters, the results of Experiment 2 support that role-plays with immediate feedback should supplement lectures. If officers spend more time practicing and receiving feedback on their performance, they are more likely to correctly use strategies taught.

Another possible implication of this study is that it may be the starting point for specific training of police officers to equip them better when they encounter an individual with autism or limited communication skills. An aspect that could enhance the training is the inclusion of site visits for officers to interact with individuals with autism. According to Reuland and Schwarzfeld (2008), mental health training should include site visits for officers to interact with those who have a mental illness and mental disabilities. Site visits would offer officers the opportunity to observe and interact with both children and adults with autism while in an in-patient or out-patient setting. Officers who participate in site

visits would be able to interact with individuals with autism in a controlled setting. Additionally, site visits would increase officers' exposure to individuals with autism and the various different non-problematic, problematic, and dangerous behaviors individuals with autism may engage in. Increased exposure to individuals with autism may assist with officers' recognition of behaviors associated with autism in both children and adults. Increased exposure to individuals with autism may also assist with generalization of the skills taught within the TAs to from confederates pretending to have autism to actual individuals with autism.

Another possible implication is that increased training for police officers on how to respond to individuals with autism may decrease the need for more intrusive methods during these encounters (e.g., physical guidance or restraints). For example, some participants in Experiment 2 used physical guidance in baseline within a few minutes of the simulation. Some participants noted that they did not know how to handle the situation because the confederate was unresponsive to questions/instructions and not talking. Teaching officers to build rapport and then provide a variety of questions and instructions may help increase the latency from the initial approach to the use of intrusive methods. The experimenter also observed in baseline that participants across both experiments would quickly approach the confederate and come within arm's reach of the confederate when the confederates were in an escalated state (e.g., screaming or crying). When an officer quickly approaches and comes in close proximity of an escalated individual, it may put the officer and the individual at risk for injury. Teaching officers to wait before approaching and maintaining a safe distance from an individual may allow time for the individual to calm down, which can reduce the risk of injury to both parties involved. Although, the experimenter did not require participants responding to be 100%

while implementing the escalated TA, future research should use a more stringent mastery criterion for steps to take when encountering someone in an escalated state.

Another implication of the study may be that the steps taught to participants could be generalized and applied to other individuals with mental illness that police officers may encounter. While creating the TAs for the experiments, the experimenter consulted with mental health trainers at a local metropolitan police academy to ensure the steps recommended were acceptable to use during encounters. For example, steps one through eight in the non-escalated TA are tactics police officers are taught to use when interacting with individuals with mental illness or disabilities outside of autism at the police academy where Experiment 2 was conducted. Since some recommended steps may be tactics already taught to police officers, it is possible that officers may use the steps not previously taught (e.g., movement instructions with gestures) with individuals who do not have an autism diagnosis.

A final implication could be that the training methodology used in Experiment 2 may be easily adapted to fit within current mental health training officers receive. It is important to note that the experimenter completed the group role-play sessions for both classes in 30 min. Additionally, the participants were not required to spend extra time outside their current training to participate in the experiment. Since the group role-play was incorporated within the time frame of the participants' CIT course, it is possible that the training model used in Experiment 2 could be integrated within police academy mental health trainings. It is important to note that participants in the lecture plus role-play group had one role-play opportunity each and their responding was higher than participants in the lecture-only group. One possible explanation for the effectiveness of the group role-play could be that participants in the group role-play had to observe and collect data on their peer's performance. The requirement to observe and collect data on

others may have enhanced the effects of the group role-play. It is also important to note that before the start of Experiment 2, the role-plays implemented at the police academy consisted of having pairs of cadets enter a role-play scenario with only an actor and facilitator present. Additionally, the pairs of cadets would receive two role-plays each. Thus, cadets had limited opportunities to observe others during role-play simulations. Since the completion of Experiment 2, the police academy has adopted the group role-play model. Therefore, cadets now have multiple opportunities to observe their peers' responding during role-play simulations and the feedback given to their peers.

One limitation of Experiment 2 was that not all participants in the lecture plus role-play met the mastery criterion after the group role-play. This may be due to the time constraints in conducting the group role-play. However, more participants' responding in the lecture plus role-play group was closer to the mastery criterion compared to the participants in the lecture-only group. Future research could examine how many group role-plays would be necessary for participants to meet the mastery criterion.

Another limitation is that the participants in the lecture-only group of Experiment 2 were not provided the group role-play after the post-training was conducted. It is unknown if participants' responding in this group would have increased if a group role-play was implemented after the post-training. Additionally, one participant in this group noted in their survey that they did not like that they could not adequately perform the steps. Future research could examine if responding would increase after individuals received a group role-play with feedback after receiving the training model used for the lecture-only group. Additionally, future research could examine the changes in participants' perception of the training after they receive the lecture-only and post-training test and then after they receive the group role-play and another post-training test. It is possible that participants receiving the lecture-only may have perceived the training

differently after they have experienced all components of the training. Additionally, future research should also examine officers preparedness before receiving any training. In the current experiments, participants rated their level of preparedness only after they have received training. Therefore, participants had to recall their level of prepared for encountering someone with autism before the training after they received training. It is possible that participants may have reported a lower level of preparedness before they received any training. Future research could examine the changes in participants' ratings before and after they receive training.

Additional limitations in Experiment 1 and Experiment 2 include that generalization and maintenance of skills taught were not evaluated. In the current study, the experimenter did not test the participants' performance outside of the training facility or with individuals with autism. Additionally, the experimenter did not assess if participants' responding maintained over time. Because generalization and maintenance are unknown, it difficult to determine whether the skills taught will occur while the participants encounter individuals with autism while on duty. Future research should examine generalization of the skills to settings outside of the training facility and with individuals with autism that participants encounter while on duty. Maintenance of the skills over time should also be evaluated to determine if refresher trainings would be required.

A final limitation of Experiment 1 and Experiment 2 is that the contribution of the text prompt to the participants' performance during post-training is unclear. In Experiment 1, two participants had access to the text prompt during post-training, and in Experiment 2, only participants receiving both the lecture and group role play had access to the text prompt. Therefore, it is unknown if Officer Ford and participants receiving only the lecture in Experiment 2 would have responded differently if they had access to

the text prompt during post-training. Future research should evaluate how the text prompt influences participants' responding.

Future research could focus on collecting normative data on how often current police officers encounter individuals with autism, as well as how often intrusive measures are used during these encounters. Another area of future research could focus on pyramidal training to teach mental health trainers at police academies to use brief BST to teach officers methods to respond to individuals with autism and other mental illness or disabilities. It would also be beneficial for future research to focus on antecedent manipulations that could be utilized by law enforcement before interacting with someone with autism. For example, would the use of autism identifiers (e.g., label on identification card or local databased of individuals with autism) influence how police officers interact and respond to individuals with autism?

Overall, this study extended the application of behavior analysis to a field that has not been extensively examined within behavior analysis. The results of both experiments support the effectiveness and acceptability of BST within law enforcements mental training. Additionally, this study may serve as a starting point to help ensure the safety of police officers as well the individuals with autism that they may encounter while working in the field.

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