TEACHING CHILDREN WITH AUTISM TO TELL SOCIALLY APPROPRIATE LIES

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This study used a nonconcurrent multiple baseline across participants design to evaluate the use of rules, role-play, and feedback for teaching 3 children with autism spectrum disorder to tell socially appropriate lies when (a) presented with an undesired gift and (b) someone's appearance changed in an undesired way. The intervention was effective in teaching use of socially appropriate lies, and generalization to untrained people and gifts or appearances was observed.
   Key words: autism, deception, lie, perspective taking, theory of mind

Although lying is broadly considered to be problem behavior, there are situations in which it is socially appropriate. For example, deception is used when keeping secrets, avoiding giving away surprises, telling jokes (avoid giving away punch line), and bluffing in games. It is also socially appropriate to be deceptive when a friend solicits an opinion on his or her unattractive new haircut or when a spouse asks how he or she appears in ill-fitting clothing. For most individuals, the determination of how to respond in the latter case involves (a) assessing the appearance of the individual, (b) envisioning the emotional effect of stating the truth, and (c) envisioning the consequences for that individual of telling the truth or lying

(e.g., allowing someone to wear inappropriate clothing to work may be more detrimental than hurting his or her feelings). Thus, the mediating responses associated with telling a socially appropriate lie are primarily verbal responses and are highly conditional on other environmental contexts. Given the advanced conditional discriminations and language repertoires needed to tell a socially appropriate lie, it is not surprising that individuals with autism spectrum disorder (ASD) may experience difficulty understanding and telling such lies (Happé, 1994).

Although there are curricula that exist for teaching deception to individuals with ASD (e.g., Skills), there is a dearth of research on teaching adaptive deception skills to this population. Reinecke, Newman, Kurtz, Ryan, and Hemmes (1997) investigated the effects of a procedure for teaching children with ASD to hide objects in their hands from an observer who guessed in which hand it was hidden. Modeling and delivery of praise were used during baseline. Treatment included the addition

of edible reinforcement for independent approximations toward the desired response. Two participants learned the response during baseline, and one participant required edible reinforcement to learn the response. Although that study lacked experimental control, results tentatively suggest that behavioral procedures might be effective for teaching deceptive skills.

Another behavioral procedure, behavioral skills training (BST), which involves the use of instructions, modeling, rehearsal, and feedback, has been demonstrated to be effective for teaching social behavior in individuals with ASD. Specifically, Stewart, Carr, and LeBlanc (2007) and Peters and Thompson (2015) demonstrated that BST improved social skills related to attending to a conversational partner's interest. BST has also been shown to be effective in teaching children with ASD to detect and respond appropriately to the deceptive statements of others (Ranick, Persicke, Tarbox, & Kornack, 2013). Specifically, in the Ranick et al. (2013) study, participants learned to identify when others were lying to them either (a) to take their things or (b) to leave them out. Although no previous research has been conducted on using BST to teach individuals with ASD to use deceptive statements, previous research is promising.

The current study evaluated whether BST, which consisted of rules, role-play, and feedback, could be used to teach children with ASD to use socially appropriate lies when given an undesired gift and when someone's appearance changed in an undesired way.

METHOD

Participants and Setting

Two boys (5 and 9 years old) and one girl (7 years old) who had been diagnosed with ASD participated. Each received one-on-one behavioral intervention for 8 to 30 hr per week in his or her home. Each spoke in full sentences using mands, tacts, and intraverbals;

displayed rule-governed behavior; and were able to learn via role-play. We selected participants for inclusion based on parental indication that their children made blatantly honest utterances often interpreted as rude (e.g., asking, "Why are you wearing a girl's shirt?" when seeing a boy wearing a pink shirt).

Therapists implemented one to three one-trial sessions per day during periods between other regularly scheduled instructional therapy programs. Baseline and generalization sessions lasted less than 1 min, and training sessions lasted 5 to 10 min.

Response Measurement and Interobserver Agreement

Observers scored participant responding on each trial by assigning up to 3 points. To receive 3 points, a participant was required to tell a lie expressing approval (e.g., "I like it"), using a sincere tone (i.e., speaking in a higher pitched, nonmonotone voice) while smiling (and not engaging in inappropriate facial expressions such as eye rolling). To receive 2 points, a participant was required to tell a lie expressing approval using either a sincere tone or smiling, but not both. To receive 1 point, the participant was required to tell a lie expressing approval with an insincere tone and without smiling. Failure to tell a lie expressing approval, regardless of tone or facial expression, resulted in a score of zero.

A second observer simultaneously collected data on 57%, 54%, and 56% of sessions for Leo, Kathy, and Carl, respectively, to calculate interobserver agreement. We compared observers' records of the presence or absence of the lie, tone, and facial expression on each trial. Observers agreed on 100% of trials across all participants.

Procedure

We taught participants to tell lies in two contexts. During gift sessions, an adult

presented the child a wrapped gift containing either a nonpreferred or already owned item and asked, "What do you think?" These items were determined by parental nomination and included board games, dolls, pens, stickers, or puzzles with disliked character themes (e.g., princess, Simpsons, Cars, popular singer); academic workbooks; pink items (e.g., magic wand, candles); items to do with coloring (e.g., coloring books, crayons, colored pencils); and plush toys.

During appearance sessions, an adult's appearance was altered in a way that the child did not like based on parent report. When the adult arrived at each participant's home, the adult expressed satisfaction with his or her new appearance (e.g., "Check out my awesome new shirt!") and asked, "What do you think?" The stimuli used to alter appearance included hair (e.g., styles, clips, large bows, blonde extensions); pink clothing (e.g., shirt, sunglasses, glove); baggy clothing; hats (e.g., sideways, cowboy); eyeglasses and eyeglass chains; unusual shoes; fake facial hair; and bright lipstick colors. Across sessions, gifts and changes in appearance were presented by experimenters, therapists, or confederates; all are referred to as therapists hereafter.

Baseline. Three to five therapists presented a gift or change in appearance across sessions; they did not deliver feedback or other consequences for participant responding.

Training. Training procedures (adapted from the "deception" lesson in the Skills curriculum; (www.skillsforautism.com) included providing descriptive rules, role-playing, and when needed, corrective feedback. One therapist conducted all rules and role-play sessions across both gift and appearance contexts. Gift sessions began by the therapist saying, "Sometimes you might get a gift you don't like or already have, and you won't like it. It was nice of the person to give you a gift, and you don't want to hurt their feelings, so even though you are not happy, you should smile and say something

nice like, 'Thanks! I like it!'" Appearance sessions began by the therapist saying, "If someone is wearing something you don't like or changes how they look, you need to make sure not to hurt their feelings by saying something nice if they ask you what you think. Something like, 'It looks good' or 'that's cool.'" Note that the therapist did not provide any instruction regarding tone or facial expression but did model the target response.

After stating rules during gift sessions, the therapist initiated a role-play opportunity by presenting a gift and saying, "Hey! I got you a present!" After it was opened, the therapist asked, "What do you think of it?" After stating the rules during appearance sessions, the therapist left the room and changed his or her appearance (e.g., put on a cowboy hat) and then returned and solicited the participant's opinion (e.g., "Check out my awesome hat! What do you think?").

The therapist praised correct responding (i.e., gave a score of 3) if it occurred within 3 s. If no response occurred within 3 s, the therapist provided a rule reminder and model of the correct response (e.g., "You need to smile and say something nice like, 'Wow! This is awesome!'"). If the participant response did not receive a score of 3, the therapist provided feedback regarding the missing elements (e.g., "That was good, but remember you need to smile and sound excited."). The therapist did not require participants to repeat the response, but instead began the next session. The therapist did not present any of the gifts or appearances presented in baseline during training; these were reserved for generalization sessions.

After participants received 3 points across three consecutive sessions, rules and role-play were no longer presented at the start of sessions. The therapist provided in situ contingent feedback (CF) when participants responded incorrectly or failed to respond within 3 s of the prompt. Specifically, the therapist said, "Remember, even if you don't like it, you need

to smile and say something nice so you don't hurt my feelings." To minimize reactivity, therapists conducted only one training session per day, and multiple therapists arranged gift and appearance trials. The therapist still praised appropriate responses. We terminated training when correct responding to novel people and stimuli was elevated and stable.

To program for generalization, three to six different therapists presented gifts and changes in appearance across the CF phase. Only one therapist from baseline was involved in training; responding to the other baseline therapists was assessed during a generalization assessment.

Generalization assessment. After completion of training, therapists and scenarios presented in baseline were re-presented using identical procedures. All therapists and gifts from baseline were reassessed, but each gift was given by a different therapist. Again, none of these therapists were present during training, nor were any of these gifts presented during training.

RESULTS AND DISCUSSION

Figure 1 displays the results of the evaluation for Leo, Kathy, and Carl. The gift scenario was not included for Leo (top panel), because his performance met mastery criteria during baseline for undesired gifts. During baseline, each participant received scores of 0 points across all sessions (both gift and appearance). During rules and role-play, performances increased to scores of 3 within a few sessions. When presession rules and role-play were discontinued (CF on the figure), participants continued to receive 3 points. Due to therapist error, the CF-only phase was not implemented with Carl for the appearance scenario. The therapist instead conducted a generalization session, and Carl responded appropriately. Given his success, generalization sessions were continued. All participants received 3 points during generalization sessions.

These results demonstrated that our intervention was effective in teaching all participants to use socially appropriate lies. These outcomes were obtained quickly (each session consisted of one trial), and training resulted in generalization to untrained people and stimuli. These results add to the literature regarding the teaching of complex social skills to children with ASD. This is the first study of which we are aware that has targeted socially appropriate lying among children with ASD. Our results are promising, but there remain questions to be addressed in future research.

First, participants in this study had well-established verbal repertoires, which likely facilitated their acquisition of these skills. Future research should examine the prerequisites necessary to learn this skill and how the speed of acquisition is affected by the presence or absence of particular skills. Second, we tested for generalization across adults and stimuli, but we did not assess generalization across settings, which will be important to ensure that children respond appropriately to individuals with novel appearances in school or when they receive a gift outside the home. Third, we taught children to respond to the question, "What do you think?" in both the gift and appearance sessions. It is possible that socially appropriate lies came under the stimulus control of this question and facilitated high levels of responding during the generalization assessment. Future research should include multiple question topographies to ensure that responding is not under selective stimulus control. Fourth, it is unclear which components of treatment were responsible for behavior change. Omission of the CF-only phase for Carl before generalization sessions were conducted indicated that this gradual fading of the interventions was not necessary to see generalization and maintenance of the targeted skill. Future research could conduct generalization probes to determine if fading is necessary.
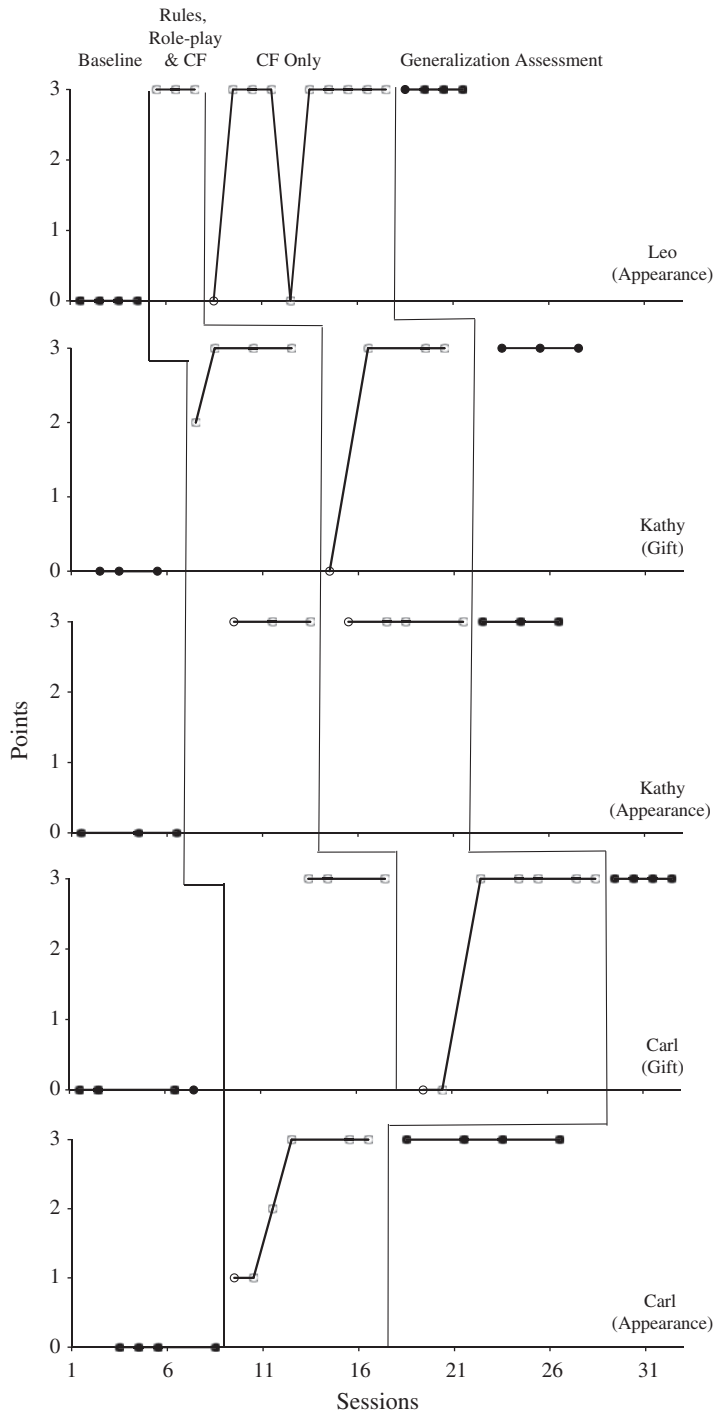
Figure 1.   Performance for Leo (top panel), Kathy (second and third panels), and Carl (bottom two panels). Filled circles represent baseline and generalization sessions, and open circles represent training sessions. CF = contingent feedback.

Finally, we believe that our results provide support for the use of behavior-analytic intervention for skills referred to by some as *theory of mind* (Baron-Cohen, 1995). These skills involve perspective taking and are commonly identified as deficits of individuals with autism. Although many of the skills thought to contribute to theory of mind cannot be directly observed or taught, these results provide support that observable behaviors thought to account for a theory of mind can be addressed using behavioral intervention.

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