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Improving accepting and giving compliments with individuals with developmental disabilities

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Abstract

Individuals with developmental disabilities, such as autism spectrum disorder, typically exhibit conversation skill deficits, with two prevailing deficits including giving and accepting compliments. The current study used an

individualized approach to assess and teach accepting and giving compliments specific to performance, possession, and appearance with three adolescents and young adults with developmental disabilities. We taught these skills using behavioral skills training and prompting during conversations utilizing a multiple-baseline design across participants. We also observed generalization and treatment extension of the participants' skills in conversations with adults not associated with teaching and in the absence of any teaching procedures. The results support the efficacy of the procedures used toward improving giving and accepting compliments within the context of a conversation. We discuss considerations to improve the social acceptability of and refinements to the teaching procedures and acquired skills.

Preferred conversation partners engage in many complex skills. Two such skills are giving and accepting compliments. Giving a compliment may, in part, spark a conversation, improve how a conversation is perceived by the conversation partner, and promote subsequent interactions. Giving and accepting compliments have been characterized as essential skills in peer relationships (Caldarella & Merrell, **1997**). Caldarella and Merrell (**1997**) reviewed child and adolescent social skill assessments, and of the assessments that included questions about an individual's peer relationships, 72% (8 of 11) included questions about an individual's ability to give and accept compliments. In a self-report study, Wilhelms (**2012**) asked college students to give three compliments per day for 20 days and to write a daily self-reflection about the experience. Students reported that giving compliments increased their communication skills (e.g., "Compliments make great conversation starters"), increased social awareness and self-confidence (e.g., "It felt really good; like we had created some sort of an immediate bond without really knowing much about each other"), and had a positive impact on relationships (Wilhelms, **2012**). Thus, learning how to give and accept compliments could lead to socially significant improvements in interactions with others.

In a three-study qualitative article, Knapp, Hopper, and Bell (**1984**) asked adults to report compliments they had given, and they classified the compliments into five categories: performance, appearance (i.e., attire, physical attributes), personality, possessions, and helping others. Of the 879 compliments reported (from Studies 2 and 3), most were based on appearance ($M = 44.5\%$) or performance ($M = 49\%$). Knapp et al. also asked adults how they accepted compliments, and the majority reported accepting compliments with a pleasantry (i.e., "Thank you," smile, or both; $M = 56\%$) or with a pleasantry plus an amendment (e.g., "Thank you, I have had this dress for years;" $M = 30\%$). On occasion, adults also reported giving a reciprocal compliment to the conversation partner (i.e., performance $M = 8\%$, attire $M = 22\%$, and possession $M = 2\%$). Taken together, these data indicate the types of compliments typically given and how compliments are typically accepted.

Social communication deficits may decrease the quality and frequency of social interactions. However, a range of social communication deficits are responsive to intervention (Williams, White, Koenig, & Scahill, **2007**). In the case of giving compliments, researchers have taught children with Autism Spectrum Disorder (ASD) to compliment another person's appearance and possessions, provide reciprocal compliments on appearance, and accept compliments. Apple, Billingsley, and Schwartz (**2005**) taught children to compliment a peer's toy possessions (e.g., "I like your airplane"). Leaf et al. (**2012**) taught each child to give a different type of compliment, that included (a) complimenting a peer's or adult's artwork performance (e.g., "I like how you painted the house green"), (b) complimenting an adult's game play (e.g., "Nice job, you were good at the game"), or (c) giving a reciprocal compliment based on appearance after receiving the same compliment from an adult (e.g., "I like your shirt too. It is a nice color"). Bergstrom, Najdowski, Alvarado, and Tarbox (**2016**) taught children to give a compliment when an adult asked the child's opinion of an aspect of his or her appearance (e.g., "Check out my awesome hat! What do you think?"), despite the children disliking it. With respect to accepting compliments, Hood, Luczynski, and Mitteer (**2017**) taught adolescents and a child to say "thank you" and smile following compliments on appearance and performance from an adult.

At least three important aspects of the efficacy studies need to be addressed to produce meaningful outcomes for participants. First, researchers have taught individuals to give only one type of compliment (i.e., appearance). This contrasts with Knapp et al.'s (**1984**) findings that individuals typically give at least two types of compliments. Therefore, teaching more than one compliment type may enhance the potential benefits of extending compliments to someone. Second, the cues taught to occasion giving a compliment have only been based on directly observing a peer's or adult's performance (e.g., playing with a toy), product of their performance (e.g., artwork) or appearance (e.g., wearing a new hat), or a comment on their appearance (e.g., "Do you like my new hat?"). This is a limitation because verbal reports about performance and possessions alone should serve as opportunities to give compliments. Argued differently, the number of potential opportunities to give a compliment notably increases when compliments are not restricted to witnessing a performance and noticing a possession of a conversation partner. Third, in addition to giving several compliment types, Knapp et al.'s findings indicated that individuals gave reciprocal compliments and accepted compliments. Taken together, researchers should evaluate procedures to teach individuals to (a) give a variety of compliments and, in doing so, establish verbal reports as cues (discriminative stimuli) for giving compliments and (b) accept compliments.

We sought to replicate Hood et al.'s (**2017**) procedures to teach adolescents and adults to accept compliments and extend their procedures by teaching participants to give multiple types of compliments during a conversation. Teaching in the context of a conversation is likely beneficial because individuals will learn to give and accept compliments in the presence of situational cues that approximate an applied endpoint, especially with adolescents and adults. In detail, we taught individuals to give a compliment on appearance, performance, and a possession, which have been found to be the most prevalent categories of compliments (Knapp et al., **1984**; see manual by Taubman, Leaf, McEachin, & Driscoll, **2011**). The experimenters taught individuals to give a reciprocal compliment based on a change in the conversation partner's appearance and assessed stimulus generalization and treatment extension of the skills to novel adults and maintenance of the skills with the trainer. Last, the experimenters obtained parent and participant social acceptability measures on improvements of the compliment skills.

METHOD

Participants, Setting, and Materials

Ben was an 18-year-old man with a diagnosis of ASD (per medical record), who was referred to services for the treatment of conversation deficits by a local clinic that provides early intensive behavioral intervention services. Ben's T-score was 68 on the Social Responsiveness Scale 2nd edition (SRS-2; Constantino et al. **2003**) based on his caregiver's responses, which identifies the presence and severity of social impairments associated with ASD. A score in this range is associated with moderate deficiencies in social behavior that may lead to difficulties in everyday interactions. Ben attended all general education classes and planned to attend college in the fall.

Ann was a 14-year-old young woman referred to services for the treatment of conversation deficits by a local clinic that provides early intensive behavioral intervention services. She had diagnoses of generalized anxiety disorder, unspecified neurodevelopmental disorder, unspecified attention-deficit/hyperactivity disorder, borderline intellectual functioning, and academic or educational problems (per medical and school records). Ann's T-score was above 90 on the SRS-2 based on her caregiver's responses, which indicates severe deficiencies in reciprocal social behavior that may lead to difficulties in everyday interactions. Ann attended a local middle school and participated in general education classes supported by a paraprofessional.

John was a 20-year-old man with a diagnosis of Asperger's (per medical and school records), who was referred to services for the treatment of conversation deficits by student-support services at the university he attended.

John's T-score was above 90 on the SRS-2 based on his caregiver's responses. John was working toward a bachelor's degree in business.

During an open-ended indirect interview, all participants and their caregivers reported concerns with accepting and giving compliments. The reports of the deficits were confirmed during the semi-structured direct assessment, which included the procedures in Hood et al. (**2017**). We conducted three to four sessions (hereafter referred to as conversations) during each appointment, referred to as a block, and each participant had one appointment per week. Ben's appointments occurred at a university-based clinic in a room equipped with a one-way observation panel; John's and Ann's appointments occurred in a university classroom. Conversations were recorded with a Sony AVCHD Handycam positioned in the corner of the room. Observers scored the videos for the dependent measures and procedural fidelity measures. The experimenter used a textual prompt (i.e., the skill typed in Times New Roman in 100 font printed on a 8 cm by 27 cm laminated paper) to provide error correction during teaching.

Dependent Measures and Interobserver Agreement

Each session included one conversation. Topics of conversation were unstructured and based on the interests of the participants and conversation partners. Within a conversation, the conversation partner (i.e., the experimenter) made statements and gave compliments (verbal reports as discriminative stimuli) to occasion the skills of giving and accepting compliments. Across conversations, the partner changed their appearance (nonverbal behavior as discriminative stimuli) to create evocative situations that might occasion giving a compliment. Description of the evocative situation, definition of the compliment skills, and the minimum number of opportunities are detailed in Table **1**.

Table 1. Description of Evocative Situations and Corresponding Conversation Skill

Evocative Situation	Skill	Minimum # of Opportunities
Accepting a Compliment		
Receiving a statement of praise, commendation, or admiration (e.g., "I wish I could do that; you are a talented artist." Knapp et al., 1984)	*Saying "thank you":* Says, thanks" or "thank you." (Kamps et al., 1992; Hood et al., 2017) *Smiling.* Upward movement of the sides of the mouth and cheeks, with or without showing teeth. (Hood et al., 2017).	}4
Giving a Possessions Compliment		
Conversation partner makes statement about his or her possessions (e.g., "I just bought a car.")	*Giving a Possessions Compliment*: A statement of praise, commendation, or admiration within 15 s of the evocative situation (e.g., "Oh nice! I bet you are having fun driving it.").	1
Giving a Performance Compliment		
Conversation partner makes statement about his or her performance (e.g., "I just aced my exam.")	*Giving a Performance Compliment*: A statement of praise, commendation, or admiration within 15 s of the evocative situation (e.g., "Good job, your studying paid off.").	1
Receiving a statement of praise, commendation, or admiration on performance (e.g., "It sounds like you're a good cook.")	*Giving a Reciprocal-Performance Compliment*: Statement of praise, commendation, or admiration on the same aspect of performance as the conversation partner's compliment (e.g., "I bet you're a good cook too.").	1-3

Giving an Appearance Compliment		4 total
A change in an aspect of the conversation partner's appearance (e.g., change in hair style or new article of clothing)	*Giving an Appearance Compliment*: A statement of praise, commendation, or admiration of the conversation partner's appearance ("You look nice; I like your shirt."). 1st conversation in a block: A compliment could be given at any point of the conversation and on any aspect of the conversation partner's appearance. Subsequent conversations in a block: A compliment could be given at any point of the conversation but on the changed aspect of the conversation partner's appearance.	1
Receiving a statement of praise, commendation, or admiration on appearance (e.g., "Your hair style looks so nice.")	*Giving a Reciprocal-Appearance Compliment*: A statement of praise, commendation, or admiration of the conversation partner's appearance ("I like your scarf with that outfit."). 1st conversation in a block: A compliment on any aspect of the conversation partner's appearance except for the aspect complimented by the conversation partner. Subsequent conversations in a block: A compliment on the changed aspect of the conversation partner's appearance.	1-3

Note. All skills were measured during discrete evocative situations except giving an appearance compliment because this skill could occur at any point in a conversation.

For accepting compliments, the conversation partner would either give a compliment related to the topic of discussion or change the discussion to a topic conducive to giving a compliment. The observer measured whether the participant smiled within 5 s of receiving a compliment and said "thank you" within 15 s of receiving a compliment. The longer latency allowed for the participant saying "thank you" after posing a follow-up question or making an amendment; for example, after receiving a compliment about a new haircut, the participant asked, "Are you sure you like it?" before saying "Thank you, I am still deciding if I like it."

The conversation partner arranged opportunities for the participant to give compliments based on the partner's verbal and nonverbal behavior regarding their performance, possessions, and appearance. Each type was taught in the form of a compliment and as a reciprocal compliment. For giving compliments based on a performance and possession, the conversation partner made comments about her performance or possession that set the occasion for the participant to give a compliment. Following the conversation partner's reference to their performance or possessions, the conversation partner paused for 5 s to give the participant an opportunity to respond. For example, the conversation partner said, "I just ran my first half marathon" and paused for 5 s, and, within the pause, the participant asked, "How did it go?" The conversation partner answered and again paused for 5 s, and, during that time, the participant said, "Wow that is impressive, you are a great runner." We also taught the participant to give a reciprocal compliment after receiving one, and the conversation partner gave compliments on performance and appearance to set the occasion. The conversation partner could not give

compliments based on possessions because participants rarely made comments about their possessions. For instance, after the conversation partner gave the compliment "It sounds like you're a good cook," the participant gave the reciprocal compliment "I bet you're also a good cook." It is an empirical question, but we thought teaching a reciprocal compliment of the same performance was reasonable because individuals have reported feeling embarrassed or worried about appearing conceited after receiving a compliment (Turner & Edgley, **1974**).

The conversation partner changed an aspect of her appearance between every conversation (i.e., programmed across conversations) to occasion giving a compliment based on a change in appearance. For the first conversation of a block of conversations, an appearance or reciprocal-appearance compliment could have been given on any aspect of the partner's appearance at any point during the conversation. We did this because for the first conversation all aspects of the conversation partners' appearance would be a change since the last day of conversations. Following the first and subsequent conversations, the conversation partner changed an aspect of their appearance, and did so in a different room that was out of the participant's view. In subsequent conversations of a block, an appearance or reciprocal-appearance compliment must have been on the changed aspect of the partner's appearance. For instance, if the conversation partner added a scarf to their attire and during the conversation said, "Your hair style looks so nice on you," the participant could give the reciprocal-appearance compliment "I like your scarf with that outfit." We taught the participant to give a different reciprocal-appearance compliment because we presumed a conversation partner would not genuinely appreciate a compliment of the same aspect of appearance and, thus, such a reciprocal-appearance compliment could be perceived as insincere. By contrast, we did not teach the participant to give a different reciprocal-performance compliment. We proceeded in this manner because complimenting a different aspect of performance depends on recalling what the conversation partner mentioned about his or her performance in an earlier conversation and doing so fluently. Engaging in this type of compliment likely requires learning multiple skills (e.g., writing down mentioned performances after a conversation, tactics to remember previous performances) that would necessitate different teaching procedures than those used for all the target compliments. In summary, noting a different aspect in a reciprocal compliment only pertained to receiving a compliment on appearance.

Observers collected second-by-second data from a recorded video via paper and pencil and could pause and rewind during scoring. Observers scored a correct response, incorrect response, or an approximation error (see Table **1** for definitions of correct responses). An incorrect response was any response that did not meet the definition of a correct response or an approximation error. One type of approximation error was defined as giving an appearance compliment to the conversation partner about any aspect other than what was changed between conversations. A second type of approximation error was defined as giving a compliment using a less desirable grammatical frame (also referred to as an autoclitic, instructional frame, or carrier phrase). In detail, for giving a performance, possession, or appearance compliment with one participant (Ann), we scored an approximation error when she said, "I bet *you* [said with a pronounced delivery] like your [ ]. " For conversations in which the observer recorded both a correct response and an incorrect or approximation error, only the correct response would have been depicted in Figure **2**, however, this did not occur.

For discrete evocative situations programmed throughout a conversation, observers recorded the exact time at which the conversation partner programmed an evocative situation and the participant's response. For the nondiscrete evocative situation of giving an appearance compliment, which could occur at any point during a conversation, the observers recorded the exact time that the skill occurred and the participant's response. A second observer independently scored the dependent measures for 24%, 33%, and 33% of conversations across all conditions for Ben, Ann, and John, respectively. Observers' records were compared using a time window analysis (Mudford, Taylor, & Martin, **2009**). For each discrete and nondiscrete evocative situation, we scored an

agreement if both observers recorded the same response within 3 s of each other's time. We scored a disagreement when both observers recorded a different response within 3 s of each other's timestamp or either observer recorded a timestamp for which the other observer did not within 3 s. We calculated interobserver agreement (IOA) scores by dividing the number of agreements by the number of agreements plus disagreements and converting the quotient to a percentage. Mean IOA was 89% (range: 50% to 100%) for Ben, 93% (range: 80% to 100%) for Ann, and 93% (range: 75% to 100%) for John. The 50% IOA in conversation 12 for Ben was due to one disagreement with only two scoring opportunities for giving compliments.

Procedural Fidelity

The observer measured the extent to which procedures were implemented accurately during at least 20% of conversations in each condition. Similar to IOA calculations, the observer scored whether the conversation partner correctly programmed each separate evocative situation. The observer scored a correct evocative situation when the conversation partner engaged in the programmed verbal response and waited at least 5 s or 15 s for the participant to respond (see Table **1**). In addition, the observer scored whether the conversation partner changed an aspect of appearance at the start of each conversation. The observer scored a correct consequence during each evocative situation when the programmed consequence was delivered within 5 s of the participant's response. The number of correct evocative situations was divided by the number of programmed evocative situations and the quotient was converted to a percentage; the same calculation was applied to programming correct consequences. The percentages were then averaged across all conversations to yield a mean percentage for each condition. Mean procedural fidelity during preteaching, teaching, and postteaching was 88%, 81%, and 91% respectively for Ben; 60%, 80%, and 93% respectively for Ann; and 89%, 95%, and 96% respectively for John. Across participants, 93% of the errors consisted of the conversation partner not waiting at least 5 s or 15 s depending on the skill to provide an opportunity for the participant to respond. The remaining errors consisted of not prompting the skill following an error in teaching (once) and not programming the evocative situation (thrice).

General Procedure

We conducted all conversations in a one-on-one format, and each was 10 min in duration. The participant visited one of two university locations once a week for 1 to 2 hr per visit. Different topics were discussed based on the interests of the participants and the conversation partners, and the conversations were not scripted. The first topic of conversation was initiated by the conversation partner; however, the following topics of conversation were initiated by both the participants and the conversation partner. The conversation partner programmed evocative situations at predetermined times based on a random number generator. We only programmed one evocative situation in a given minute of the conversation. On occasion, a conversation extended beyond 10 min to allow the participant or conversation partner to finish speaking. We provided a 10-min break between conversations during which the participant requested a preferred activity, which included their phone (Ben), activities with the conversation partner (e.g., playing Wii, putting together a puzzle, playing cards; Ann), and an iPad (John).

At the university location with a one-way mirror, the participant faced away from the mirror (Ben) and sat across the table from the conversation partner. Another experimenter placed a sheet of paper with a cue for the evocative situation against the mirror, which allowed the conversation partner to faintly see it, and this signaled when and what type of evocative situation to program (e.g., P was a signal to discuss one's possessions). At the other university location without a one-way mirror, another experimenter sat behind the participant and held the cues (Ann and John).

The conversation partner changed an aspect of their appearance between every conversation (i.e., shirts, jackets, hats, jewelry, or glasses). The conversation partner made at least one comment regarding a

performance and possession during every conversation, which set the occasion for the participant to give a compliment. We could not program the same number of statements regarding performances and possessions in every conversation because the opportunities were influenced by the topics discussed. The conversation partner programmed at least four compliments to set the occasion for a reciprocal compliment, composed of at least one performance compliment and one appearance compliment (e.g., three performance and one appearance; two performance and two appearance; one performance and three appearance). It is important to note that a conversation partner's compliment on performance did not always set the occasion for a reciprocal compliment. For instance, if the conversation partner gave the compliment, "It is awesome that you got an A on your test in science class," the participant could not give the reciprocal compliment "I bet you also did well on your test" because the conversation partner was not enrolled in a science class.

Several individuals conversed with the participant. During preteaching and postteaching when more than one conversation partner was available, the experimenters randomized the conversation partner for the first conversation in a block. Then, the experimenters balanced the order across conversation partners. The trainer was the only conversation partner associated with teaching. Novel Adult 1 was never associated with teaching, but served as a conversation partner during preteaching and postteaching to assess generality. We also assessed the participants' performance with Novel Adult 2 who was a conversation partner they had never met, described as treatment extension. We used a multiple-baseline design across participants to determine the effects of teaching on skill acquisition and an embedded reversal design to assess maintenance.

Preteaching and Postteaching
The conversation partner programmed the evocative situation and allowed 15 s for the participant to respond. Following a correct response, incorrect response, or approximation, the conversation partner continued the conversation. In other words, only common consequences that may serve as reinforcement followed the participants' responses (e.g., saying "thank you" and smiling, or continued conversation on the topic).

Behavioral Skills Training
We implemented behavioral skills training (BST; Poche, Brouwer, & Swearingen, 1981) to teach participants to give and accept compliments. First, the trainer gave a rationale regarding the importance of the skills during social interactions. The trainer explained:

It is important when interacting with others to make them feel comfortable and confident. One way to achieve this is by giving them compliments. There are many appropriate times to provide compliments, such as when you are impressed with the conversation partner's performance or successes, when your conversation partner mentions (or you see) a possession that is new, unique, or noteworthy; you notice changes in their appearance or attire; or when you've just received a compliment. It is not only important to give compliments while conversing with others, but also accept them when received. Accepting compliments lets the other person know that you are actively listening and appreciate the kind words they have said.

Second, the trainer and another adult modeled two correct responses and eight types of incorrect responses (i.e., two unprompted no responses, two unprompted errors, two prompted no responses, and two prompted errors) that were informed by preteaching conversations. After each modeled response, the trainer asked the participant whether the response was correct or incorrect and to provide rationale, and the trainer delivered descriptive praise or corrective feedback accordingly. Third, the participant practiced the skill with the trainer in a 10-trial session. Each trial represented a brief conversation in that only one evocative situation was arranged. Following a correct response, the trainer provided descriptive praise; following an incorrect response, the trainer presented the textual prompt just above the table until the participant engaged in the correct response.

The mastery criterion was one session with a correct response on 100% of trials or two consecutive sessions with a correct response on at least 90% of the trials as in Hood et al. (2017).

Textual Prompt
Conversations were identical with preteaching in that the trainer programmed the same evocative situations and only provided naturally occurring consequences following a correct response. However, following incorrect responses, the trainer presented a general textual prompt related to the skill. For example, the trainer presented a prompt that read "give a compliment, say 'thank you,' and smile" following incorrect responses. We used visual inspection to decide when to remove the textual prompts.

Booster Teaching
We used the same mastery criterion as described previously for trial-based teaching.

Accepting compliments – self-monitoring (John). In response to variability with smiling during postteaching, we taught John to engage in self-monitoring using BST. Although John consistently said "thank you," we included saying "thank you" with smiling in self-monitoring because the goal was to promote the reliable occurrence of both skills. We gave a rationale for using self-monitoring, modeled correct and incorrect self-monitoring responses, and then John practiced self-monitoring during 10 trials in which he scored his performance as correct and incorrect for saying "thank you" and smiling. Each trial was a brief conversation with only one compliment given. The trainer and John scored whether he said "thank you" and smiled. The trainer provided immediate vocal feedback on the correspondence between John's self-monitoring with that of the trainer (with no textual prompts). After correspondence was 100% for one session, we returned to 10-min conversations. The self-monitoring sheet remained on the table, and the trainer provided feedback on correspondence after each conversation.

Giving appearance compliments and reciprocal-appearance compliments (Ann and John)
Neither Ann nor John complimented the change in an aspect of the trainer's appearance in each conversation. In response, we replicated BST for giving compliments except we taught only one compliment skill, rather than multiple compliment skills, in a session. This provided a higher, consistent dose of teaching for giving appearance compliments and reciprocal-appearance compliments. However, the start of the trial for which reciprocal-appearance compliments were taught looked identical with trials in which giving appearance compliments were taught. Because of this, there was always an opportunity to give an appearance compliment at the start of a trial when teaching was focused on reciprocal-appearance compliments. If an appearance compliment was given, the trainer provided descriptive praise and initiated the next trial; if not, we conversed for approximately 1 min and then gave the participant an appearance compliment.

Giving possession compliments (Ann)
Ann engaged in approximations of the skill. For example, after the trainer mentioned purchasing a new nature painting, Ann said, "I bet you like your nature painting" instead of "I bet the nature painting is nice; you have good taste," which could be interpreted by the conversation partner that Ann did not like the painting. We tailored BST to correct this error. We described why the grammatical frame could be misinterpreted by conversation partners and provided a rationale and multiple exemplars of alternative frames. We emphasized to Ann that she should share her opinion about the possession. Next, the trainer and another adult modeled giving possession compliments with desirable frames (i.e., "That's cool," "I bet [ ] is [ ]," "I bet [ ] looks really nice," and "I bet you picked out a [ ])" and the undesirable frame (i.e., "I bet *you* like [ ]"), and Ann reported whether each compliment was correct or incorrect with corresponding rationale. After the conversation partner mentioned a possession and no compliment was given within 15 s, the trainer showed the textual prompt, "Give a

compliment." However, if Ann gave a compliment with the undesirable frame, the trainer showed the textual prompt with a desirable frame (e.g., "I bet [ ] is [ ]").

Social Validity

Caregivers viewed representative video recordings of their child's performance during conversations in preteaching and postteaching (i.e., within 1 SD of the mean performance in each phase and the most recent conversation in that phase) and rated their satisfaction. Caregivers reported their satisfaction on a Likert-type scale that ranged between 1 and 7, with 1 denoting highly unsatisfied, 4 denoting neutral, and 7 denoting highly satisfied. After each question, we asked caregivers to provide a rationale for their rating. We also asked the participants to rate their satisfaction in the same manner (see Tables 3 and 4).

RESULTS

During preteaching, Ben, Ann, and John engaged in low levels of saying "thank you" and smiling with both the trainer and Novel Adult 1 (see Figure **1**). During BST, Ben, Ann, and John were taught to accept a compliment by saying "thank you" and smiling in two, eight, and four sessions of trial-based teaching, respectively (all data from BST and booster teaching are available upon request). During conversations with the textual prompts, there was an immediate, robust increase of both skills for all three participants. All participants said "thank you" for 100% of opportunities in the first conversation following BST, similarly Ben and Ann smiled for 100% of opportunities in the first conversation whereas a gradual increase in smiling was observed for John.
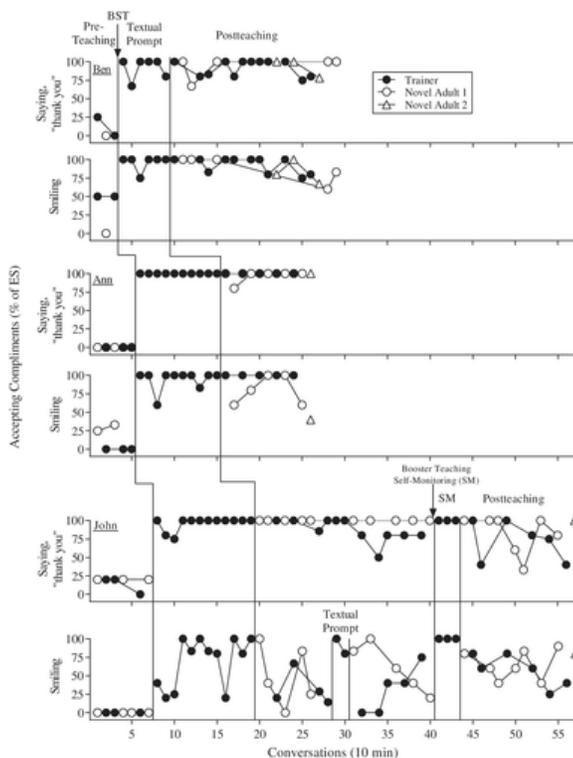

Figure 1 Percentage of opportunities with correctly accepting a compliment across conversations for Ben, Ann, and John. BST = behavioral skills training, ES = evocative situations.

We removed the textual prompts to assess maintenance with the trainer, and Ben and Ann exhibited high, stable levels of both skills with similar performances observed across conversations with Novel Adult 1. John consistently said, "thank you" with the Trainer and Novel Adult 1, like Ben and Ann, but there was notable variability of smiling (i.e., $M = 32.4\%$; range: 14.3% to 66.7% with the Trainer and $M = 49.7\%$; range: 0% to 100 %

with Novel Adult 1). In response, we reintroduced the textual prompt, and after two consecutive conversations with smiling above 80% of the opportunities, the textual prompt was removed. However, again, John smiled at an unsatisfactory level with Novel Adult 1. During booster teaching self-monitoring, John engaged in high levels of smiling with the self-monitoring sheet and therapist feedback on his self-monitoring. In the return to postteaching, variability increased but both skills maintained at moderate to high levels with the Trainer and Novel Adult 1. John's performance represents an improvement relative to preteaching (i.e., Preteaching $M = 0\%$; Postteaching following Self-monitoring $M = 57.5\%$). We showed John his performance graphically and asked if he was satisfied with his performance or wanted to learn how to discretely self-monitor to improve his smiling further. He reported being satisfied with his performance. Therefore, we assessed whether he and the other participants would exhibit the skills with an adult they had never met before (Novel Adult 2). There were moderate to high levels of both skills across participants, with Ann exhibiting the lowest level of smiling.

During preteaching, Ben and Ann did not give compliments with either adult, and John inconsistently gave Novel Adult 1 a compliment (Figure **2**). During BST, each participant was taught to give compliments in two (Ben and John) or three sessions (Ann). During conversations with textual prompts, all participants gave more compliments (i.e., $M = 2, 3.5, 2$, for Ben, Ann, and John, respectively). However, Ann and John did not give any appearance compliments regarding the changed aspect of the trainer's appearance denoted by the hatched boxes. Thus, we implemented booster teaching, and Ann and John gave compliments on the change in the aspect of the trainer's appearance after one session of booster teaching. In the return to conversations with textual prompts, Ann gave an appearance compliment in four consecutive conversations (one appearance and three reciprocal-appearance compliments), and John gave an appearance compliment in four of five conversations (two appearance and three reciprocal-appearance compliments). In these conversations, however, Ann made approximation errors (hatched boxes) with the grammatical frame when giving possession compliments, which warranted booster teaching. During booster teaching, Ann met the mastery criterion in five sessions. After booster teaching, Ann correctly gave possession compliments in three consecutive conversations.
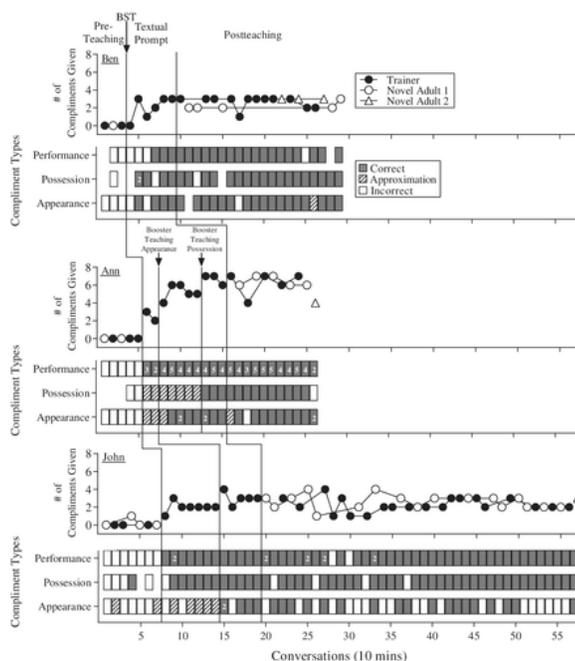

Figure 2 Frequency of correctly giving a compliment and each type of compliment given across conversations for Ben, Ann, and John. BST = behavioral skills training, ES = evocative situations. The presence of a number for a compliment type denotes the number given beyond one.

After high, stable levels of correct responding across all skills, we removed the textual prompts. Ben, Ann, and John continued to give compliments with the trainer at similar levels. Also, all participants gave similar levels of compliments to Novel Adult 1 and Novel Adult 2, which demonstrates the generality of the training leading to improved performance with nontraining conversation partners.

Before teaching, all caregivers were dissatisfied with the way their child accepted compliments (Table **2**; *M* = 3; range: 2 to 5) and gave compliments (*M* = 1.8; range: 1 to 3). After teaching, by contrast, all caregivers reported moderate to high levels of satisfaction with the way their child accepted compliments (*M* = 5; range: 4 to 6) and gave (*M* = 5; range: 4 to 6). Ann's mother felt "the compliments lacked emotion, but Ann gives a compliment like she knows she is supposed to." John's mother stated, "He was better at giving compliments."

Table 2. Social Validity from Caregivers and Participants

Questions	Caregivers	Ratings	
		Preteaching	Postteaching
I am satisfied with the way my child accepted compliments from the adult.	Ben's dad	3	4
	Ben's mom	2	5
	Ann's mom	5	5
	John's mom	2	6
I am satisfied with the number of times my child gave a compliment to the adult.	Ben's dad	2	4
	Ben's mom	1	5
	Ann's mom	3	6
	John's mom	1	5
Questions	Participant Ratings – Postteaching		
		Ann	John
I am satisfied accepting compliments in a conversation with adults.		7	7
I am satisfied giving compliments in a conversation with adults.		4	6
I am satisfied with the procedures used to teach giving and accepting compliments.		7	3
I would recommend this intervention to other teenagers who want to work on these skills.		7	7

Note. The participants used a 7-point Likert scale with the following ratings: 7 = highly agree, 4 = neutral, and 1 = highly disagree.

Ann and John reported moderate to high satisfaction (7) with accepting compliments and moderate satisfaction with giving compliments (4 and 6, respectively) following the training (Table 3). Ann stated, "I understand accepting compliments better, but [with giving compliments to novel adults] I might not know them, and I am just meeting them [whereas] it is easier if I know them." When asked about accepting compliments, John stated, "Sometimes I struggle a bit when I feel I don't deserve the compliment." Ann and John rated the teaching procedures as a 7 and 3, respectively. John stated, training "felt [like] it dwelled on one topic a bit too much [however] he would recommend the intervention to others." Both participants would strongly recommend this intervention to others (7). Unfortunately, Ben's social validity data were accidently discarded.

DISCUSSION

We taught Ben, Ann, and John to accept compliments and to give performance, possession, and appearance compliments in the context of ongoing conversations. Notably, the participants performed the skills at satisfactory levels with novel conversation partners. The participants and their caregivers reported moderate to high levels of acceptability with most of the improvements in the skills and with the teaching procedures. With these improvements, the participants' behavior reflects the types of compliments commonly given and preferred by adults (Knapp et al., **1984**) and, in part, may lead to more reinforcing interactions with others.

A potential benefit of a one-on-one teaching approach is the inherit flexibility to remediate consistent errors as they develop and doing so may be necessary to achieve socially significant outcomes. We taught all participants to accept and give compliments, but Ann and John required tailored, booster teaching. We taught Ann a more acceptable grammatical frame when complimenting one's possessions. With Ann and John, we provided additional practice giving compliments on the aspect of the conversation partner's appearance that changed. Researchers should consider teaching compliment types sequentially rather than teaching performance, possession, and appearance compliments simultaneously as we did. Doing so could increase the saliency of the stimulus conditions and increase the dose of teaching during behavioral skills training.

Teaching compliments by programming evocative situations (antecedent stimuli) with examples of performance, possession, and appearance compliments based on participant preferences may enhance the acquisition and social acceptability of the skills we taught. As one example, we taught the participants to give at least one appearance or reciprocal-appearance compliment in each conversation, but Ben, Ann, and John almost exclusively gave appearance compliments in the reciprocal form (95%, 75%, and 75% across all conversations, respectively; data not reported in figures). Although an appearance compliment could be given at any point in the conversation, the change in the conversation partner's appearance alone rarely occasioned a compliment. Instead, receiving an appearance compliment likely served as a salient cue (discriminative stimulus) for the participant to look for the aspect of the conversation partner's appearance that changed and compliment it. There is no research on whether conversation partners prefer nonreciprocal appearance compliments but presumably they are more reinforcing than those in the reciprocal form. If so, extensions of the current procedures to better teach appearance compliments influenced solely by changes in appearance is warranted. One extension is programming changes in appearance informed by a participant's preferences. For instance, with someone who enjoys playing Pokémon Go, the changed aspect of appearance would include a Pokémon Go shirt. Doing so may (a) increase the likelihood the participant attends to the conversation partner's attire and (b) establish the value of giving a compliment.

As another benefit, appearance compliments may be given with a conspicuous shift in prosody (e.g., "That is a cool Pokémon Go shirt!") and facial expressions (e.g., eyebrows raise, mouth slightly opens) due to the participant's interest in the aspect of appearance and, in turn, may be perceived as more genuine by conversation partners. Incorporating participant preferences could also improve the qualitative features of giving performance and possession compliments as well as accepting compliments. Achieving more qualitatively rich compliments could address the concern noted by Ann's mother, who reported Ann gave compliments when she was supposed to but the compliments lacked emotion after watching a postteaching conversation.

Like Hood et al. (**2017**), we defined correctly accepting a compliment as saying, "thank you," and smiling but whether the co-occurrence of both is more socially acceptable than either saying "thank you" or smiling after receiving a compliment is unknown. Outcomes from such a social validity comparison would have implications for future research. Despite conducting booster teaching with John that involved learning how to self-monitor his saying "thank you" and smiling during conversations, variability in accepting compliments continued after self-monitoring was removed during postteaching. We had planned to teach John a discrete way to self-monitor

given how well he performed when it was in place, but he politely declined our offer to continue working on accepting compliments. John said he felt comfortable with the skill. He may have been satisfied with his improved performance because when we analyzed whether he said "thank you" or smiled after receiving a compliment, he did so on 82% of the opportunities. Ann also smiled less when accepting a compliment with one of the novel adults, but she always said "thank you." If accepting a compliment by either saying "thank you" or smiling is socially acceptable, the current study's initial teaching procedures would have been sufficient and booster teaching could have been avoided with John. In such a case, John may not have felt that the teaching procedures were redundant at times. We would also have been satisfied with Ann's moderate level of smiling during the last conversation in postteaching.

There is likely an upper limit on the number and repetition of compliments that should be given before they lose their intended effect on the conversation partner. However, the parameters of such a limit have not been studied. Moreover, the degree to which social acceptability is affected if a participant only gives compliments after receiving one is unknown. Additional normative data on the types of compliments commonly given and the conditions under which they occur would provide an updated account to Knapp et al.'s (**1984**) findings. In addition, normative data on the qualitative aspects of giving compliments should be obtained. Moving beyond normative data to experimentally manipulating various aspects of conversations and evaluating the effect on conversation partners' preferences may lead to the most socially valid outcomes. Learning to give compliments could be beneficial beyond conversations. Giving someone a compliment may be a useful tactic to initiate a conversation with someone unfamiliar. For example, before the start of a class, a student could compliment a classmate on their appearance to spark a conversation (e.g., "Nice shirt. Is that from Coachella this year?"). A thorough understanding of the conditions under which compliments are effective for the speaker and have the greatest impact on the listener will enhance our technology of teaching functionally relevant conversational skills.

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