TREATMENT OF FOOD STEALING IN INDIVIDUALS WITH PRADER-WILLI SYNDROME

By

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To my family, Robert, Lana, Ruth, and Doug

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Food-related problem behavior is a defining characteristic of Prader-Willi syndrome (PWS), and food stealing is commonly reported. The detection of food theft may be difficult because individuals with PWS often engage in the behavior covertly, which poses difficulties during both assessment and treatment. In the present investigation, unobtrusive observation was used to assess the effectiveness of two treatment procedures—verbal rules and DRO—on the food stealing behavior of 15 subjects with PWS. Rules were initially effective with three subjects, but effects did not maintain when replication was attempted. By comparison, DRO effectively eliminated the food stealing of all subjects. The utility of DRO as a treatment for food stealing is discussed, and suggestions for future research are provided.

CHAPTER 1
INTRODUCTION

Approximately 120,000 – 320,000 (3%-8%) of the 4 million infants born in the United States each year are affected by a developmental disability (Buxbaum, Boyle, Yeargin-Allsopp, Murphy, & Roberts, 2000; Kiely, 1987). Developmental disabilities are chronic disorders associated with deficits in cognitive and adaptive behavior (Administration on Developmental Disabilities, 1997). Known causes of developmental disabilities include a number of biological conditions such as chromosomal abnormalities (e.g., Down syndrome) and also environmental factors (e.g., cerebral palsy resulting from meningitis); however, some causes are unknown (e.g., autism).

Problem behavior, although not a defining feature, is often observed in individuals with developmental disabilities; self-injurious behavior (SIB), aggression, property destruction, and stereotypy are reported frequently in these populations. Some disorders have been associated with a high prevalence of a specific problem behavior; for example, individuals with autism are often reported to engage in stereotypic behavior such as body rocking and hand flapping (Bodfish, Symons, Parker & Lewis, 2000; Jacobson, 1982). Individuals diagnosed with genetic disorders may present with even more defined behavioral phenotypes; a striking example can be seen in individuals with Lesch-Nyhan syndrome, who, from an early age, engage in severe SIB (Cauwels & Martens, 2005). SIB in this syndrome is often in the form of lip and finger biting, face scratching, and head banging, and the behaviors can be severe enough to warrant intrusive intervention, including physical restraint and extraction of teeth to prevent self-biting (Cauwels & Martens; Hall, Oliver, & Murphy, 2001). The present study focuses on another genetic syndrome, Prader-Willi syndrome (PWS), in which food-related problem behavior is a defining characteristic of the disorder.

PWS affects about 1 in 10,000 to 1 in 15,000 births and is identified using genetic testing and/or clinical diagnostic criteria (Dykens & Cassidy, 1996; Gunay-Aygun, Schwartz, Heeger, O'Riordan, & Cassidy, 2001; Holm et al., 1993; Martin et al., 1998). The most serious problem behavior in the PWS population is hyperphagia, or the excessive consumption of food (Einfeld et al., 2006; Schrander-Stumpel et al., 2004; Stevenson et al., 2007a). Hyperphagia often begins at a young age (1-2 years), and continues for the lifetime of the individual (Descheemaeker et al., 2002). Immediate consequences of hyperphagia can include choking and food poisoning; however, the most dangerous immediate consequence is gastric necrosis, a rupture of the stomach caused by consumption of a large quantity of food, which often results in death (Einfeld et al.; Schrander-Stumpel et al.; Stevenson et al., 2007a, b). A study conducted by Stevenson et al. (2007b) showed that, over a 5-year period (1999-2004), gastric necrosis was the likely cause of death for 8 of 152 individuals with PWS. Excessive food consumption typically results in vomiting. However, individuals with PWS are rarely reported to vomit; therefore, the risk of hyperphagia is not alleviated by regurgitation and may occur without any physical symptoms indicative of excessive food consumption (Martin et al.; Schiemann, Butler, Gourash, Cuffari, & Klish, 2008). More delayed consequences of hyperphagia, such as obesity and obesity-related health problems, also can result in premature death (Einfeld et al.; Stevenson et al., a, b). In fact, obesity-related health problems are the most commonly identified causes of death in individuals with PWS, and research indicates that most individuals with PWS typically do not live past 50-60 years of age (Schiemann et al.; Schrander-Stumpel et al.).

Prevention of excessive food consumption is a critical treatment component for individuals with PWS, and food restrictions, such as reduced calorie diets, locked food storage, and continuous monitoring of food intake are commonly employed. However, these restrictions

cannot prevent access to all food sources, and it is not surprising that food stealing is the most commonly reported problem behavior in the PWS population (Donaldson et al., 1994; Martin et al., 1998). Individuals with PWS have been reported to take food from a variety of locations, ranging from refrigerators to trash cans (Dykens, Maxwell, Pantino, Kossler, & Roof, 2007; Young et al., 2006). The detection of food theft may be difficult because individuals with PWS, given their history of close supervision around food, may be more likely to steal food when they are unlikely to get caught. Relatively little research has been conducted on food stealing in the PWS population, perhaps because it is often covert in nature.

Covert behavior poses unique problems for researchers because of the inherent limitations in observing and recording the behavior. Unobtrusive techniques, such as one-way mirrors and hidden cameras, have been used to capture a variety of covert behaviors, including stereotypy, SIB, and shoplifting, all of which occurred when the subjects had been left unattended or when the subjects were unlikely to be detected (Dabney, Hollinger, & Dugan, 2004; Grace, Thompson, & Fisher, 1996; Ringdahl et al., 2002). Because unobtrusive observation is not always possible, measurement by way of permanent products (observable outcomes of behavior) also has been used to capture covert behaviors, including drug use and SIB (Grace et al.; Kirby, Kerwin, Carpenedo, Rosenwasser, & Gardner, 2008).

Although unobtrusive observation and permanent product measures have been used to capture a variety of covert behaviors, few published studies have used these methods to specifically examine food stealing in individuals with PWS. Exceptions include studies by Page, Finney, Parrish, and Iwata (1983) and Page, Stanley, Richman, Deal, and Iwata (1983), in which the researchers used one-way mirrors to observe food stealing by individuals with PWS, and a study by Maglieri, DeLeon, Rodriguez-Catter, and Sevin (2000), in which the researchers used

pre- and post-session weights to measure food stealing by individuals with PWS. More recently, Rone, Iwata, and Beavers (in preparation) used pre- and post-session food counts to examine the conditions under which individuals with PWS were most likely to steal food. They exposed 21 subjects to a series of four conditions in which therapist supervision, food placement, and assigned task varied. Results showed that 17 of 21 subjects stole food during one or more conditions of the assessment. Food stealing was observed in all assessment conditions, but patterns of food stealing varied both across and within subjects. These results are relevant to the current study because they identified environmental contexts that could serve as optimal baseline conditions for treatment. In an extension of that study, we examined the effects of two treatments on the food stealing behavior of individuals with PWS: Rules and differential reinforcement of other behavior (DRO).

Rules are verbal or written statements that provide information about how an individual should or should not behave in a given situation. For example, rules to “speak quietly” and “stay seated” are standard in classroom environments, whereas rules to “stop” or “yield” are common in driving environments. The delivery of rules has been effective in reducing some target behaviors; for example, Jason and Liotta (1982) demonstrated that a combination of verbal statements and posted signs was effective in reducing smoking behavior in targeted areas, and McNees, Egli, Marshall, Schnelle, and Risley (1976) demonstrated that posting anti-shoplifting signs and color-tagging frequently stolen merchandise was effective in reducing shoplifting in a retail store. However, other research suggests that rules are ineffective in reducing some target behaviors. Madsen, Becker, and Thomas (1968) found that teacher-delivered verbal and written rules were ineffective in decreasing child problem behavior in a classroom, and Phillips, Phillips,

Fixsen, and Wolf (1971) found that verbal rules were ineffective in reducing child tardiness in a group home.

DRO involves the delivery of reinforcement contingent on the absence of a specified behavior for a specified period of time. DRO has been used to treat numerous problem behaviors, including SIB (Lindberg, Iwata, Kahng, & DeLeon, 1999), aggression (Kahng, Abt, & Schonbachler, 2001), property destruction (Conyers et al., 2004), and elopement (Piazza et al., 1997). Page, Finney, et al. (1983) eliminated the food stealing behavior of 2 individuals with PWS by delivering tokens, which could be redeemed later for low-calorie foods, contingent on the absence of food stealing. The DRO interval was thinned from 10 s to 40 min. In a follow-up study, Page, Stanley, et al. (1983) replicated their previous findings by using DRO to decrease food-stealing with an additional subject, successfully increasing the DRO interval from 30 s to 2 hr, and generalizing treatment results to more natural environments and with additional behaviors (weight and exercise).

In summary, research on the effectiveness of rules has been mixed: Some studies have found rules to be effective, whereas others have not. By contrast, DRO has been demonstrated to be effective in reducing food stealing behavior in the PWS population; however, its effects have been examined with a limited number of individuals. The purpose of the current study was twofold: first, to assess the effectiveness of a rules-only intervention on the food stealing behavior of individuals with PWS, and second, to extend research on the effectiveness of DRO with a large sample of individuals with PWS.

CHAPTER 2
METHOD

Subjects and Setting

Fifteen individuals diagnosed with PWS who attended an adult vocational day program participated. Subjects ranged in age from 29 to 42 yr and were diagnosed with mild or moderate mental retardation. All subjects had been referred for treatment of food stealing and had been observed to steal food during one or more conditions of a controlled assessment of food stealing behavior. All sessions were conducted at the day program in rooms equipped with a hidden camera. Sessions during the Rules condition were 5 min in length. Sessions during the DRO condition were initially 5 min in length but varied subsequently (increased or decreased) based on subjects' performance.

Response Measurement and Interobserver Agreement

A trained observer counted and recorded the number of food items prior to and following each session. Food stealing was recorded as the number of items taken during a session and was determined by subtracting the post-session count from the pre-session count. Pre- and post-session food counts were used to identify the number and type of food items missing, whereas the hidden camera was used to observe general subject behavior during the session (e.g., latency to steal food, on/off task behavior, etc.). Interobserver agreement was assessed by having a second observer conduct an independent count during a mean of 47% of sessions (range, 36% to 62%) for each subject. Agreement percentages were calculated by dividing the smaller number of recorded items by the larger and multiplying by 100%. Mean percentage agreement for the number of items was 100% across subjects.

Preference Assessment

A single-stimulus preference assessment (Pace, Ivancic, Edwards, Iwata, & Page, 1985) was conducted to identify preferred food items to be used in subsequent conditions. A variety of common snack foods were assessed (chocolate, jelly beans, pretzels, etc.); all were familiar to the subject but not typically available. Five items were presented singly, 3 times each, in random order, for a total of 15 trials. During each presentation, an experimenter placed the item on a plate in front of the subject, named the item, and indicated that the subject was allowed to consume the item. If a subject did not consume an item within 5 s of its presentation, the experimenter removed the item and presented the next trial. Items consumed on at least 2 of the 3 presentation trials were selected for use in subsequent conditions.

Baseline

Conditions were selected based on results of an assessment of food stealing in which subjects were exposed to a series of conditions that varied according to therapist supervision, food placement, and assigned task (Rone, Iwata, & Beavers, in preparation). The baseline condition for each subject was identical to the last condition in which food stealing was observed during the assessment, and only those conditions used are described below. All sessions were conducted in a room equipped with a wall-mounted hidden camera, and rooms were monitored to ensure that the subject and/or therapist were the only individuals who had access to the room. Preferred food items were present in all conditions. At the end of each session, the therapist thanked the subject for his/ her participation and left the room with the subject.

Clean up task. A trashcan containing a clean, unused liner and crumpled paper was present in the room, as well as various academic task materials such as books, worksheets, and flashcards that were scattered on the floor around the room. Food items were placed in a sanitary plastic bag inside of the lined trashcan, and crumpled paper was placed under and around the bag

of food. Upon entering the session room, the therapist told the subject, “Someone made a mess of this room. Will you straighten it up for me while I go to find out what happened?” The therapist then left the room, closed the door, and knocked on the door prior to reentering 5 min later.

Non-food task. The session room contained 2 tables and 2 chairs. Table 1 and chair 1 were in the center of the room, table 2 was approximately 1 m away from table 1, and chair 2 was facing the wall approximately 2 m away from table 1. Plastic bags and a bowl containing metal screws and bolts were placed on table 1, and a container of food items was placed on table 2. At the beginning of a session, the therapist asked the subject to sit at table 1 and gave the following instructions: “I would like you to count out and package these nuts and bolts. Please count out 5 items, put them in a bag, and then put the bag to the side.” The therapist demonstrated the response and then observed the subject package one bag of items. The therapist then said, “Make as many bags as you want and set them here. I’m going to work on some other things in my office, and I’ll be back in a bit.” The therapist then left the room, closed the door, and knocked on the door prior to reentering 5 min later.

Food task. Table and chair placement was identical to that of the Non-food task condition. Plastic bags and a bowl containing food items were placed on table 1, and a container of identical food items was placed on table 2. At the beginning of a session, the therapist asked the subject to sit at table 1 and delivered the following instructions: “I would like you to count out and package these snacks. Please count out 5 items, put them in a bag, and then put the bag to the side.” The therapist demonstrated the response and then observed the subject package one bag of food items. The therapist then said, “Make as many bags as you want and set them here. I have an important call to make, so I’ll be over here. We can talk when I’m finished.” The

therapist then turned so that his or her back was to the subject and sat in chair 2 facing the wall. The therapist engaged in continuous phone conversation for 5 min and ignored all behavior by the subject. At the end of the session, the therapist began talking to the subject prior to turning around to face the subject, and then told the subject that the session was finished for the day.

Treatment

Rules. Sessions were conducted in a manner similar to Baseline except that, prior to the beginning of a session, the therapist stated that the subject was not to take anything that did not belong to them (e.g., "The rule is: don't take anything that's not yours."). Following the rule statement, the therapist conducted the session as described previously.

DRO. Sessions were conducted in a manner similar to the Rules condition except that, prior to the beginning of a session, the therapist stated that the subject would earn a token if the subject did not take anything that did not belong to them (e.g., "If you don't take anything that's not yours, you will earn a token to trade in for something that you want."). If food stealing could be seen by the observer, the therapist reentered the room at the end of the DRO interval, visually glanced at the food items, and told the subject either, "Food was left in here and you didn't take any. Nice job – you earned a token that you can trade in for something you want," or "Food was left in here and you took some. You did not earn this token that you could have traded for something that you want." Because the therapist already was in the room during the food task condition, an observer knocked on the session room door at the end of the DRO interval and informed the therapist whether food stealing had occurred. If food stealing could not be seen by the observer (e.g., the subject's body blocked the camera), the therapist reentered the room at the end of the DRO interval (or an observer knocked on the door) and created a reason for the subject to leave the session room with the observer (e.g., "I need to run over to the office. Walk around with Mack for a little bit until I get back."). The observer and subject then left the

session room together while the therapist counted the food. When the observer and subject returned, the therapist visually glanced at the food items and delivered the verbal statement as described previously. The session was terminated following the delivery of the verbal statement/ token. If the subject earned a token, the therapist immediately provided access to several reinforcers, which consisted of zero or low-caloric food items (diet soda, gum, etc.), tangible items (stickers, games, etc.), and activities ("free time" with preferred items/ persons, etc.). If a subject stole food during two consecutive, 5-min sessions, the DRO interval/ session length was decreased to the mean latency to stealing food during those two sessions. If a subject did not steal food during two consecutive sessions, the DRO interval/ session length was increased by 50% until a terminal goal of 10 min was reached.

Experimental Design

A nonconcurrent multiple baseline across subjects design was used to evaluate the effects of Rules and DRO on the food stealing behavior of 12 subjects, and a reversal design was used to evaluate treatment effects for the remaining 3 subjects.

CHAPTER 3
RESULTS

Figure 3-1 shows results for Taryn, Brianna, Melynn, Penelope, Mikayla, Xavier, Delaney, Skylar, Micah, Riley, Kelsey, and Aidan. Four general patterns of food stealing were observed during baseline: low to moderate rates in all sessions (Brianna, Melynn, Penelope, Mikayla, and Skylar), high rates in all sessions (Riley), increased responding across sessions (Taryn, Xavier, Delaney, Micah, and Aidan), and variable responding (Kelsey). All subjects continued to engage in food stealing during the Rules condition. Three subjects (Delaney, Micah, and Riley) showed an initial decrease in stealing relative to baseline followed by an increase; the remaining 9 subjects showed either no change or an increase in food stealing. When the DRO condition was implemented, food stealing decreased quickly (i.e., within the first 3 sessions) for all subjects. Skylar and Kelsey never engaged in food stealing during any of the DRO sessions, and the remaining 10 subjects engaged in some food stealing initially but subsequently ceased altogether.

The DRO interval length was increased or decreased based on observed rates of food stealing; therefore, subjects who stole food participated in more DRO sessions than those who did not. The initial DRO interval was set at 5 min for all subjects, increased (by 50%) if food stealing did not occur for 2 consecutive sessions, and decreased (to the mean latency to steal) if food stealing occurred in 2 consecutive sessions. To illustrate, the bottom middle panel shows data for Skylar, who never engaged in food stealing during the DRO condition; as a result, her treatment lasted for only six sessions. The interval length for Skylar was 5 min for her first two DRO sessions (300 s), 7.5 min (450 s) for her third and fourth sessions, and 10 min (600 s), the terminal goal, for her fifth and sixth sessions. By contrast, the second panel in the middle column shows results for Xavier, who engaged in food stealing during several sessions of the DRO condition. The interval length for his first two sessions was 5 min (300 s); however,

because he engaged in food stealing during both sessions, the interval length was subsequently decreased to 17 s (his mean latency to steal during sessions 1 and 2) for his third and fourth sessions. Xavier's food stealing remained low during all subsequent sessions; however, his treatment required many sessions to incrementally increase the DRO interval length from 17 s to 600 s.

Figure 3-2 shows results for Tameron, Jillian, and Devin. Unlike subjects whose data are shown in Figure 1, these subjects ceased food stealing during the Rules condition. To evaluate the reliability of this effect, we first conducted a reversal to Baseline with all 3 subjects, during which food stealing increased to rates similar to (Tameron and Jillian) or approximating (Devin) those observed during the original Baseline. We then reimplemented the Rules condition but did not observe a replication of the therapeutic effects of rules. All three subjects showed an initial decrease in food stealing, which did not maintain, such that food stealing subsequently increased to Baseline levels. During the DRO condition, food stealing decreased to zero immediately, and all subjects met the terminal DRO criterion (10 min) in 8 or fewer sessions.

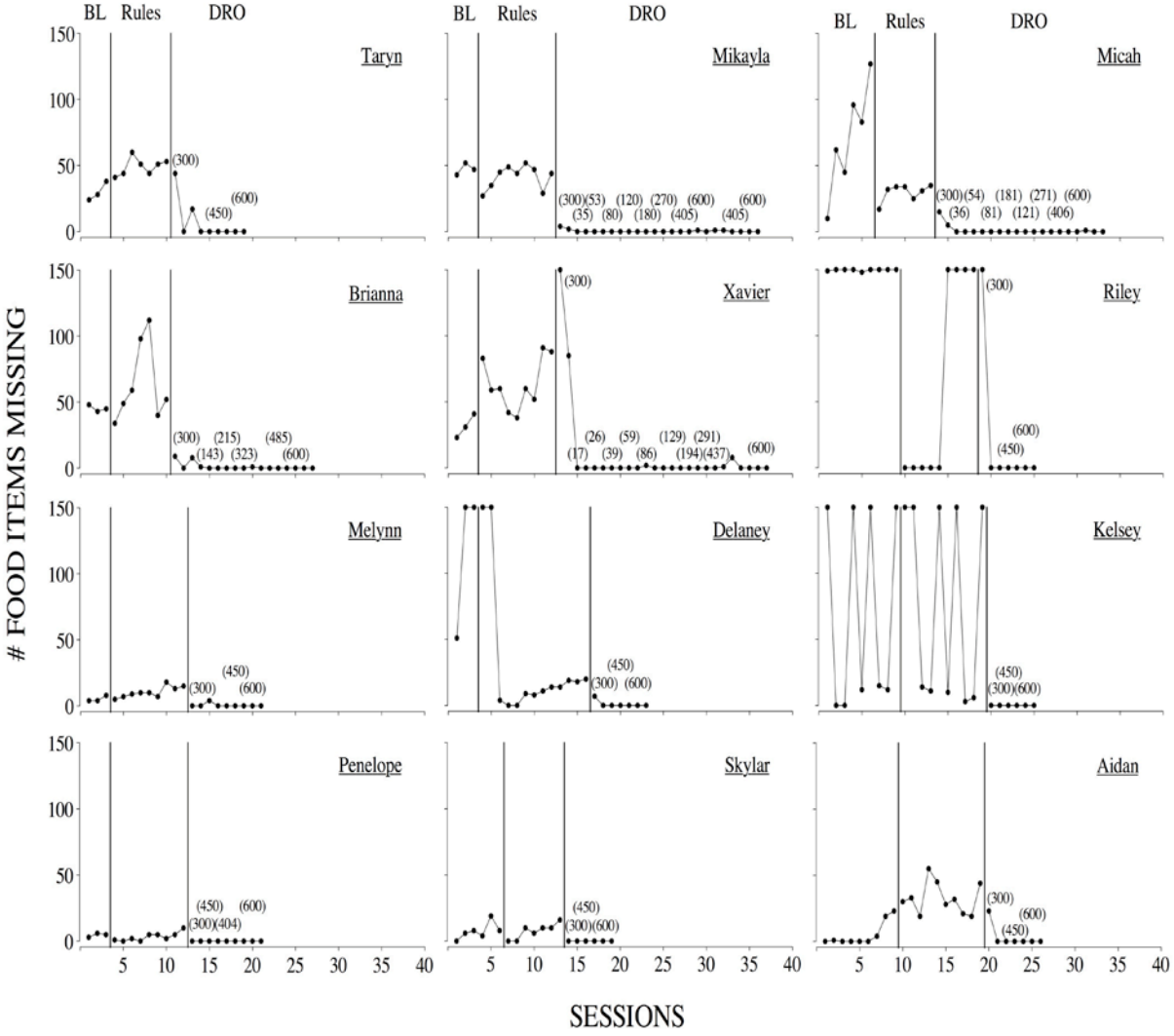

Figure 3-1. Amount of food stolen during treatment conditions by Taryn, Brianna, Melynn, Penelope, Mikayla, Xavier, Delaney, Skylar, Micah, Riley, Kelsey, and Aidan.

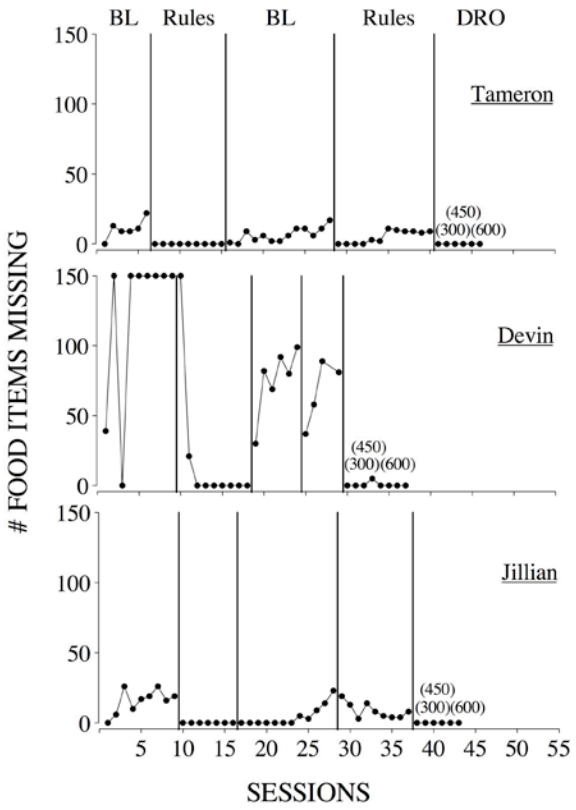

Figure 3-2. Amount of food stolen during treatment conditions by Tameron, Devin, and Jillian.

CHAPTER 4
DISCUSSION

We examined the effects of two interventions—verbal rules and DRO—on the food stealing behavior of 15 individuals with PWS. The more efficient intervention and that used most commonly, rules or instructions not to steal, was initially effective in reducing the food stealing of only three subjects, and therapeutic effects did not maintain when replication was attempted. By contrast, DRO effectively eliminated the food stealing of all subjects. These results replicate and extend those of previous research on the effectiveness of DRO as treatment for food stealing in individuals with PWS and represent the largest set of treatment data on food stealing in this population.

We first evaluated the effects of a verbal rule because rules are ubiquitous; they can be seen or heard in virtually every classroom, home, and community setting. Rules also are easy to implement, efficient, and inexpensive. If effective, rules represent an attractive treatment option for problem behavior. Also, because rules were an inherent component of DRO ('Don't steal and you will earn something'), they represented a potentially confounding variable whose effects needed to be evaluated separately.

Previous research on the effectiveness of rules has yielded mixed results (Jason & Liotta, 1982; Madsen et al., 1968; McNees et al., 1976; Phillips et al., 1971). Rules are antecedent manipulations and acquire their influence through pairing with various sorts of consequences. Most individuals have a history of many such pairings. As a result, rules alone may exert some effect over behavior, at least initially. However, when rules are delivered in the absence of consequences, as is often the case in the natural environment, behavior change does not maintain. For example, Phillips, Phillips, Fixsen, and Wolf (1971) demonstrated that point loss contingent on tardy behavior was effective in reducing tardiness, but when the point loss

contingency was removed, tardiness increased. A rule ("If you are late…") continued to be delivered during approximately 25% of the sessions but was never associated with consequences.

Food stealing is a chronic problem in the PWS population, but the covert nature of the behavior often makes detection difficult. Therefore, it is highly likely that all of our subjects had lengthy histories of being instructed not to take food but that they contacted consequences for taking food only occasionally, which accounts for their behavior observed during baseline. When rules not to steal food were delivered subsequently, three general patterns of behavior were observed. Some subjects showed no change in food stealing following the introduction of rules. This result is not surprising given the absence of consequences for food stealing in the Rules condition. Some subjects showed an initial reduction in food stealing that re-emerged. These results may be due to the subject's history of receiving consequences for food stealing; however, when food stealing did not result in consequences, the effect of any such history was diminished. Finally, three subjects either never stole food or ceased stealing almost immediately in the Rules condition. These data are unusual in that the subjects either never or rarely contacted the absence of consequences for stealing food. However, when re-exposed to the Rules condition, all three subjects stole food, suggesting that stealing may have occurred in the initial Rules condition had it been continued for a longer period of time.

In contrast to the Rules condition, the DRO condition was uniformly effective, demonstrating that the addition of a contingency was necessary to reduce, and eventually eliminate, the food stealing behavior of all subjects. Although these results were not entirely unexpected, it is interesting that all subjects chose to select either a leisure item or a single edible item after each session instead of consuming all edible items (125-150 pieces) during each session. We were also surprised to find that many of the subjects selected non-edible items

as reinforcers. One possibility is that the relatively weak contingency capitalized on a previously established history of rules paired intermittently with stronger (punishing) consequences. It is also possible that the opportunity to earn a novel item was sufficient to compete with the edible items available within session, or that therapist attention (in the form of the post-session contingency statement) functioned as an additional source of reinforcement for not stealing food. Regardless of the reasons, our results have important implications for treatment in showing that individuals with PWS will refrain from stealing a lot of food in order to earn a little food, and that they will refrain from stealing food items to earn tangible items. Although these effects were not always seen immediately (i.e., some subjects preferred to steal food during the session rather than earning an item after the session), all 15 subjects eventually ceased food stealing completely and met the terminal 10-min DRO criterion.

A limitation of our DRO condition was the short duration of the DRO interval. We selected a 10-min terminal DRO length because individuals with PWS typically do not go unsupervised for long periods of time, and we felt that a 10-min DRO was an appropriate test for our procedures. Previous research has demonstrated the effectiveness of a 2-hr DRO interval in maintaining reduced rates of food stealing in one subject with PWS (Page, Stanley et al., 1983), but evaluation of extended DRO intervals was beyond the scope of this project. Nevertheless, it is important to identify the temporal limits of DRO, and in future applications and extensions it may be possible to simply extend the DRO interval length incrementally, as was done by Page, Stanley et al. Supplementary procedures may be necessary, however. For example, a response-cost procedure (Donlin, Knealing, Needham, Wong, & Silverman, 2008), in which food stealing also leads to reinforcer loss, may facilitate DRO interval lengthening.

Food stealing behavior is often covert and therefore difficult to observe. We utilized "baited" session rooms to establish control over the amount of food available. One limitation of this procedure was that the experimental setting was somewhat artificial. It is possible that baiting strategies could be used in the natural environment, although that may lead to an additional problem. Measurement of permanent products has the potential for producing false-positive results if individuals other than the target subject have access to environments in which food is present. Such outcomes were not possible in the current study because only the subjects were present in the session rooms but should be considered in future research when response products are measured. Alternative methods for detecting covert behavior could include use of transportable hidden cameras or "tracer" substances applied to food items.

Although large with respect to sample size, the current study can be viewed as a starting point for additional research on food stealing behavior in individuals with PWS. In addition to the extensions listed above, future research could assess the effectiveness of our procedures with younger individuals with PWS. All subjects in the current study were 29 yr of age or older, and it would be interesting to assess the effectiveness of our procedures, particularly more extensive attempts to established generalized rule-following behavior with younger subjects. It also may be fruitful to extend the observational methods described here to address other forms of covert behavior common in the PWS population. For example, individuals with PWS are reported to engage in SIB in the form of skin picking (Gunay-Aygun et al., 2001), some of which may occur covertly, and it is possible that covert observation procedures (outcome measures or hidden cameras) could be applied to these problem behaviors as well.

Reducing food-stealing behavior is just one component of a well-rounded weight management program for individuals with PWS. Additional research is needed in the areas of

healthful food selection and exercise behavior. An important consideration for researchers interested in PWS is the role of prevention. Much is known about the behaviors that result in weight gain, and it would be beneficial to circumvent these behaviors early, such that individuals with PWS maintain healthy weights and are able to live longer, more productive lives.

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BIOGRAPHICAL SKETCH

Amanda Rone graduated from the University of Florida with a B.S. in psychology in 2003. Her first course in behavior analysis as an undergraduate student sparked her interest in that field, and, after graduation, she began working as a behavior therapist at the Marcus Institute in Atlanta, Georgia to gain additional clinical experience. Working at the Marcus Institute further fueled Amanda's desire to pursue a career in applied behavior analysis, and she began her graduate studies at the University of Florida in 2005. Since beginning graduate school, Amanda has had the opportunity to work with individuals with developmental disabilities in clinical and research settings, and she has greatly enjoyed these experiences. Following graduation, Amanda intends to pursue a career in applied behavior analysis, with her goal being to teach and continue to conduct research.