

ASSESSMENT OF SEX OFFENDERS WITH DEVELOPMENTAL DISABILITIES

By

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To my cousin Danny, the strongest person I know

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Abstract of Dissertation Presented to the Graduate School  
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ASSESSMENT OF SEX OFFENDERS WITH DEVELOPMENTAL DISABILITIES

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This series of studies focused on the behavioral assessment of sex offenders with developmental disabilities (DD). Studies 1 through 4 focused on the use of arousal assessments with DD offenders from a behavioral perspective. Study 1 investigated the utility of using a penile plethysmograph in the assessment of arousal for sex offenders with DD. Study 2 primarily served as a replication and extension of study 1 with additional data analysis. Study 3 involved an evaluation of 2 different types of pre-session factors, masturbation and arousal suppression, that may affect responding during an arousal assessment. Study 4 primarily served as a technical study which involved the development and initial evaluation of a portable plethysmograph to measure arousal outside of clinical settings. Results from studies 1 and 2 showed that differentiated outcomes were obtained using the penile plethysmograph with DD sex offenders. Further data analysis from study 2 yielded more detailed information about the arousal assessment outcomes in terms of hierarchical preferences among stimuli. Results from study 3 showed that both pre-session masturbation and suppression instructions decreased arousal levels. The results from study 4 showed that the portable plethysmograph was capable of capturing differential arousal in community settings, and the levels of arousal were similar to those obtained in clinical settings.

Studies 5 and 6 focused on assessing operant behavior related to sexual offending by applying standard behavioral procedures to offense related behavior. Study 5 involved observing how individuals responded under conditions considered to be high-risk when they did not know they were being assessed. Individuals were observed in the presence of magazines which contained pictures of children (considered to be high-risk) and other magazines which did not. Results showed that all of the individuals looked at the high-risk magazines on almost every available opportunity. Study 6 involved applying a standard behavioral preference assessment procedure to assess age and gender preferences. Results showed that specific preferences for age and gender were obtained, and the outcomes generally matched the preferences identified through the arousal assessments.

## CHAPTER 1 GENERAL INTRODUCTION

### **The Problem of Sexual Offending**

Behavioral approaches to the assessment and treatment of sexual offenders were once common but currently are rare. One possible reason for this change in direction could have been due to the fact that previous behavioral approaches tended to only focus on the respondent features of sexual offending, such as arousal, and failed to address other potentially important features that may be more operant in nature, such as engaging in offending-related behavior. As an alternative, cognitive behavioral therapies were considered to be more complete and are still considered to be among the most effective approaches in the assessment and treatment of sexual offenders (Hanson et al., 2002). Although some behavioral components are included in cognitive behavioral therapies, they seem to be disappearing (see Fernandez, Shingler, & Marshall, 2006), or sometimes are inconsistent with sound principles (e.g., methods, known influences on behavior, etc). The present series of studies is designed to apply modern behavior analytic methodology to the assessment of sexual offenders diagnosed with developmental disabilities (DD) that addresses both the physiological (i.e., arousal-based) features as well as operant-based features of committing a sexual offense.

Within the United States alone, approximately 83,000 children were victims of sexual abuse in 2005 (United States Department of Health and Human Services, 2008). Although children who were sexually abused only represent 9.3% of all children who experienced abuse or neglect, the consequences for victims of sexual abuse can be detrimental and long lasting (Wyatt, 2007). There has been a considerable amount of resources spent on efforts to reduce future occurrences of child sexual abuse, but the rate of victimization has been fairly constant since 2001, ranging from 12.0 to 12.5 per 1,000 children per year (United States Department of Health

and Human Services). Furthermore, it is likely that sexual abuse is not always reported or otherwise documented so these estimates of the incidence of child sexual abuse are conservative. In addition, some individuals who are caught offending once are known to have committed several offenses. Sometimes they commit further offenses even following incarceration or other legal intervention (Hanson & Bussiere, 1998). It is clear that effective approaches to the assessment and treatment of sex offenders are needed reduce the chance of future sexual offending.

### **Individuals who Commit Sexual Offenses**

A large portion of the work in the area of sexual offending has involved attempting to identify the types of individuals who commit sexual offenses. One issue, however, is that there are very few consistencies among these individuals and information is typically reported in terms of the percentages of individuals who fall within particular categories such as relatives, friends, neighbors, etc, (see United States Department of Health and Human Services, 2008). In addition, particular characteristics of individual sexual offenders, such as the individual's level of intellectual functioning, might influence assessment and intervention modalities and outcomes.

Most pertinent to the current dissertation, information on DD sex offenders is limited compared to information on typically developing offenders (Day, 1994; Lund, 1992). Although comparatively few studies have been conducted directly investigating DD sex offenders, some general consistencies have been noted. Studies report that the types of offense and victim selection are similar for DD and non-DD sex offenders (Day, 1994; Haaven, Little, & Petre-Miller, 1990). Other studies have reported more specific offense characteristics among the DD population, such as a higher proportion of male victims and a higher likelihood of re-offense (e.g., National Clearinghouse on Family Violence, 1998), but these findings have not been consistently reported in the literature. One of the few consistent factors that has been reported is

that assessment and treatment methods that are commonly used for typically developed offenders have also been used for DD sex offenders, although the effectiveness of such practices have not been explicitly evaluated by research (Johnston, 2002).

### **Trends in the Assessment of Sex Offenders**

The assessment of sex offenders has been the focus of research encompassing numerous different approaches and conceptual frameworks. One consistent theme, however, has been to assess an individual's sexual preferences. A variety of different assessment techniques have been designed to measure whether or not individuals show greater preference for deviant rather than non-deviant stimuli (e.g., children versus adults; rape scenarios versus non-violent sex). Some approaches to the assessment of sexual preferences have focused on self-report measures, but it is generally accepted in behavioral research that self-report measures are of limited utility as an assessment tool (Miltenberger, 2004), and it seems likely that problems identified in other areas of research could occur in assessing sexual preference via self-report measures. For example, it seems likely that individuals would be highly motivated to give inaccurate information on their sexual preferences rather than admitting a sexual preference for children. Furthermore, self-reports of sexual preferences can become more complicated when taking into consideration the intellectual functioning of the individual (i.e., taking self report measures may be impossible in cases where an individual does not have the requisite skills to respond to questions about sexual preference). Despite potential complications, some studies point to the utility of using self-report measures with DD sex offenders; however, these studies tend to focus on measuring constructs thought to be related to sexual offending such as mood (Day, 1994), or cognitive distortions (Lindsay, 2002), instead of measuring sexual preferences or actual behavior.

The most common way to assess an individual's sexual preference has been, and continues to be, through the use of the penile plethysmograph, which measures changes in the

circumference of the penis as an indicator of sexual arousal. This type of assessment methodology has been one of the most widely studied and yet controversial topics in the area of sexual offending. The use of the penile plethysmograph continues to be a source of debate in terms of its overall utility in the assessment and treatment of sexual arousal (Launay, 1999). Despite its controversy, however, change in penile circumference, as measured by the penile plethysmograph, is considered to be one of the most sensitive and reliable indicators of sexual arousal (Howes, 1995; Murphy & Barbaree, 1994). Furthermore, showing arousal to deviant stimuli consistently has been shown to be one of the best predictors of re-offense (e.g., Barbaree & Marshall, 1988; Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004; Quinsey, Chaplin & Carrigan, 1980),

The research using the penile plethysmograph has primarily focused on sex offenders without DD and only a few published data sets exist that show the use of penile plethysmography with DD sex offenders. For example, two data sets were shown in a chapter by Murphy, Coleman and Haynes (1983). One case involved a juvenile who had committed a sexual offense against a child and the other case involved an adult male who had raped an adult woman. One additional study involved assessments outside of clinical settings (e.g., Rea, DeBriere, Butler, & Saunders, 1998), and another occurred in the context of a treatment evaluation (e.g., Rosenthal, 1973). According to Murphy et al., some literature has suggested possible problems in using phallometric assessments with individuals diagnosed with DD, but there are no data to support the claim.

### **Assessment Issues**

Criticisms of using the penile plethysmograph in general tend to focus on issues related to a lack of standardization among procedures as well as its reliability and validity as an assessment tool. A typical assessment situation involves exposing an individual to both deviant and non-

deviant stimuli and measuring arousal levels with the penile plethysmograph. Within the assessment process, however, there can be a great deal of procedural variability. For example, there has been variation in the types of stimuli that have been used in arousal assessments and very little consistency exists across institutions that conduct these types of assessments (Howes, 1995). Variability also exists in data analysis, although there generally seems to be somewhat more consistency in this area (Howes).

Most often, phallometric assessments are criticized in terms of their test-retest reliability, but not many studies have conducted empirically sound evaluations of test-retest reliability. Furthermore, it is not clear if any such evaluations have included sex offenders with DD. In general, however, phallometric assessments have not been found to have good test-retest reliability when the reliability coefficients have been compared to standards for other psychological tests (Marshall & Fernandez, 2003). A study specifically evaluating test-retest reliability for sex offenders who committed their offense against a child, also found unacceptable reliability coefficients (see Marshall & Fernandez).

A major consideration with test-retest reliability involves the potential problem of habituation to the stimuli used in the phallometric assessments. Habituation can be defined as a decrease in the strength of a response after repeated presentations of a stimulus that elicits the response (Mazur, 2006). For example, a participant may show lower levels of arousal on the second exposure to the stimuli as a function of already having seen those stimuli. Moreover, habituation potentially could be a serious issue when attempting to evaluate treatment effects only using a pre-and post-measure. Lower arousal levels on the post measure could be due to habituation and not a function of the treatment effects. Whereas the potential for habituation is a valid concern, evaluations of habituation have yielded mixed results. In some cases,

investigators have reported decrements in arousal levels after repeated exposures to the same stimuli both within and across sessions (e.g., Koukounas & Over, 1993; O'Donohue & Geer, 1985; O'Donohue & Plaud, 1991), while other studies have reported no habituation or minimal levels of habituation (e.g., Eccles, Marshall, & Barbaree, 1988; Julien & Over, 1984).

It is important to note that a majority of phallometric habituation studies involve non-sex offenders exposed to sexually arousing stimuli utilizing varying modalities (e.g., slides, videos, etc), different rates of exposure to the stimuli, and varying amounts of time between exposures. It is possible that some of the variability observed across studies could be due at least in part to these differences. Furthermore, habituation has been seldom evaluated in sex offenders in general or sex offenders with DD in particular. From the limited amount of data on sex offenders with DD, habituation of sexual arousal does not appear to be a powerful phenomenon. For example, Rea et al. (1998) is the only published study to have evaluated repeated arousal measurements with sex offenders with DD. In this investigation, possible evidence of habituation was observed with only 1 out of 5 participants.

One of the most serious potential limitations to measuring arousal with the penile plethysmograph involves whether or not these assessments accurately measure sexual preferences or whether individuals have the capacity to alter the arousal assessment outcomes by either suppressing arousal to deviant stimuli, increasing arousal to non-deviant stimuli, or both (Murphy & Barbaree, 1994). For example, an individual who has committed a sexual offense against a child may attempt to suppress arousal in a phallometric assessment when presented with stimuli containing children, while at the same time attempting to become aroused to more appropriate stimuli containing adults.

A large majority of the investigations of control of arousal have occurred with both hetero- and homosexual non-sexual offenders, and for the most part, they all reported the ability of the participants to suppress arousal when given instructions (e.g., Abel, Barlow, Blanchard & Mavissakalian, 1975; Henson & Rubin, 1971; Freund, 1963, Freund, Watson & Rienzo, 1988; Golde, Strassberg & Turner, 2000; Lalumière & Earls, 1992; Laws & Rubin, 1969; Mahoney, & Strassberg, 1991; McAnulty, & Adams, 1991; Quinsey & Bergersen, 1976). Other studies have focused on evaluations of suppression in individuals who have committed a sexual offense and have found similar outcomes (e.g., Laws & Holmen, 1978; Malcolm, Davidson & Marshall, 1985; Wydra, Marshall, Earls & Barbaree, 1983) including a study by Hall, Proctor, and Nelson (1988) in which 80% of the participants were able to suppress arousal. Other studies, however, have shown mixed results of participants' abilities to suppress arousal (e.g., Avery-Clark & Laws, 1984). In addition to investigating suppression, many of the studies in this area have also shown that individuals can generate high levels of arousal under conditions where they may not otherwise show arousal (Freund et al., 1988; Laws & Rubin; Quinsey & Bergersen, 1976).

Although the control of erectile responses appears to be a robust finding in the literature for both sexual offenders and non-sexual offenders, to date, there are no published investigations involving adult male sex offenders with DD. There is one published data set (Murphy et al., 1983) involving an adolescent child sex offender with DD in which penile responses were measured to audiotape descriptions of aggressive sexual interactions with children, with and without instructions to attempt to suppress his arousal. The outcomes of this investigation showed that the individual displayed high levels of deviant arousal in both conditions, thereby indicating that he did not successfully suppress arousal. Other data shown in Murphy et al. highlighted an adult male with DD who was accused of raping an adult woman and these

outcomes showed high levels of deviant arousal (to rape-related stimuli) even when given instructions to suppress arousal. It is clear that more research is needed in this area to better determine the capability of both suppression and increasing arousal to non-deviant stimuli with DD sex offenders.

### **Behavioral Approach to Assessment**

From a behavioral perspective, the information provided by phallometric assessments can be useful on a number of levels. Similar to the assessment methodology developed by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994), which is designed to determine the conditions under which targeted behavior is likely to occur, phallometric assessments help to identify the conditions under which an arousal response is more likely to occur. By isolating the variables responsible for arousal, phallometric assessments help point to a more specific treatment focus. For example, the outcomes of a phallometric arousal assessment may indicate that a particular individual is differentially aroused in the presence of males ranging in age from 6-7 years of age. With this information, interventions can then be specifically designed to target a particular demographic category.

It does not appear, however, that the use of the penile plethysmograph has been used in accordance with some common features of behavior analytic methodology. Furthermore, it is possible that many of the aforementioned limitations would not pose problems when phallometric assessments are conducted within the framework of behavior analytic methodology. For example, many criticisms of phallometric research focus on the lack of standardization across several components of the assessment process as discussed previously (e.g., scoring of phallometric data, stimulus variability, etc.). However, these issues pose the most significant problem when making comparisons across studies. Whereas standardized assessment protocols would likely serve to strengthen the area of phallometric testing, it does not diminish the utility

gained from individualized (within-subject) demonstrations of deviant arousal. Moreover, studies could focus on attempting more direct replications utilizing the same stimulus sets and any other more specific procedural details rather than continuing to add to the existing level of procedural variability.

Another advantage of behavior analytic methodology involves the use of within-subject rather than group analyses. The majority of studies within the sex offender literature involve group comparisons across offenders and non-offenders or among different types of offenders (Marshall & Fernandez, 2003). Behavior analytic research typically avoids such comparisons, given the many limitations involving the assumptions of group homogeneity and lack of individualized information (see Johnston & Pennypacker, 1993). Adopting a within-subject approach, however, would necessitate changes to some of the typical arousal assessment practices. For example, the majority of group comparison studies in this area do not involve repeated measurement and generally only involve a limited number of exposures to the stimuli involved in the assessments. In some cases, the individuals are exposed to multiple stimuli within a particular age category but are still typically only exposed to each stimulus on one occasion and the average level of responding to that category is measured (e.g., Lalumière & Harris, 1998; Laws & Osborn, 1983). Multiple exposures to the stimuli are typically done in the context of either a pre- or post-treatment evaluation or in order to assess test-retest reliability. There are many potential limitations involved with evaluating outcomes based on few exposures to assessment stimuli and this may also be related to the problem of the generally reported poor test-retest reliability scores. For example, there are many variables that could affect how an individual responds during an arousal assessment. In addition to possible factors such as suppression, other physiological factors such as illness, lack of sleep, recent ejaculation, and so

on, could affect responding. Having only a limited number of exposures to each stimulus could potentially skew interpretations given that the arousal assessment outcomes could have been affected by any number of extraneous variables. Such factors could contribute to the lack of correspondence when using only two sessions to evaluate test-retest reliability. In light of these considerations, it is not surprising that such poor test-retest reliability outcomes have been obtained. Utilizing a repeated measures approach to arousal assessments would not control for the influence of extraneous variables, but it would allow for a more complete picture of an individual's level of arousal across time and any outlying data points would be more clearly visible. As stated previously, however, the use of repeated measures also has the potential to produce habituation of the arousal response and remains a potential limitation of assessments conducted in this manner.

Overall, it appears that an integrated methodology involving the use of the penile plethysmograph and behavior analytic methodology is needed and could be a potentially useful direction in the assessment of sexual offenders with DD. In order to ensure that a newly proposed behavioral approach does not succumb to the same previous criticisms (i.e., only focusing on arousal), however, a complete assessment would need to include aspects related to both the operant and respondent features of the behavior. Focusing only on sexual preferences generally assumes that offenses are sexually motivated to a large degree, and research has validated that point showing that sexual preferences for children is an important factor in committing a sexual offense against a child. The operant features of this behavior can be considered to be of similar importance in committing a sexual offense as well. For instance, individuals may engage in particular types of behavior, such as approaching or coaxing children, that may increase the likelihood of being able to commit a sexual offense against a child.

Furthermore, any sexual gratification gained from a sexual encounter with a child is likely to serve as a reinforcer, increasing the likelihood of offense related behavior. There also appears to be a fundamental difference in the type of behavior engaged in by sexual offenders and non-sexual offenders while in the presence of an arousal inducing stimulus. Non-sexual offenders may encounter an individual who elicits an arousal response, however, they do not engage in behavior to attempt a coercive sexual interaction. Sexual offenders, on the other hand, at least sometimes commit sexual offenses when aroused. Thus, because arousal per se cannot be considered solely responsible for offending it would be important to evaluate operant features. It is important to note that this is only one possible way in which the respondent and operant features can interact in the commission of a sexual offense. It is also possible that other environmental factors can play a role in sexual offenses that may not be directly related to arousal.

### **Current Studies**

The purpose of the current series of studies is to evaluate the use of the penile plethysmograph with DD sex offenders and to evaluate assessments techniques that may address the operant features of sexual offending. Specifically, these studies will focus on DD sex offenders who have committed an offense against a child. Studies 1-4 will address the arousal features of sexual offending, and studies 5 -6 will attempt to assess some of the operant features of sexual offending. More specifically, study 1 will focus on the utility of applying behavior analytic methodology involving repeated measurement to previously conducted assessments involving the penile plethysmograph (Study 1 has been published as Reyes et al., 2006). Study 2 will involve attempting to replicate the findings from study 1 in addition to exploring additional data analysis techniques. Study 3 will focus on examining pre-session factors, such as masturbation and suppression instructions, that may affect how individuals respond during

arousal assessments. Study 4 is a technological study that will evaluate the utility of a portable plethysmograph for conducting assessments outside of clinical settings and highlight issues related to generalization and maintenance. Study 5 will involve assessing individuals under conditions considered to be high-risk, and study 6 will evaluate the use of traditional preference assessment methodologies to assess age and gender preferences towards males and females.

It initially may seem questionable to conduct the previously mentioned evaluations with DD sex offenders. It is important to note, however, that these procedures would have occurred independently of the current dissertation. These investigations were approved by the treatment facility and our involvement in helping to design and conduct the evaluations occurred at the request of the administration and staff. In other words, these investigations were not conducted for the purposes of research. The evaluations of the *outcomes* of each investigation, however, were conducted for the purposes of research and served to determine the efficacy of the procedures.

### **General Method**

**Participants.** All of the participants included in the current dissertation were selected from a state residential treatment facility for DD offenders. The participants were assigned numbers by the clinical staff so that the results could be reviewed without identifying information. All of these individuals were accused of committing one or more sexual offenses and were found incompetent to stand trial. As a result, the charges were dismissed and they were placed in a state residential treatment facility. Table 1-1 shows the demographic characteristics for all of the participants. All of these individuals consented to participate in standard assessment procedures conducted at their unit including assessments of arousal in both clinical and community settings, observations via video cameras (even when they may not be aware of the observation), miscellaneous evaluations of preference, and assessments and treatments involving masturbation.

At any time, participants could refuse to participate in an assessment without penalty. In addition, Institutional Review Board (IRB) approval was obtained from the facility IRB, University IRB, and the IRB used by the Florida Department of Children and Families and Agency for Persons with Developmental Disabilities to evaluate the results from the assessments (note: the assessments have been a standard component of the evaluation process at the residential facility and, therefore, were not conducted for the purposes of research; the evaluation of assessment results was conducted for research purposes).

Table 1-1. Demographic characteristics for participants

Participant	Age	IQ	Diagnosis	Offense	Study
0001	34	60	Mild MR	6 counts of sexual battery on a child under the age of 12; 1 count of sexual performance by a child under the age of 12	1
0005	34	62	Mild MR	Kidnapping a child under the age of 12; attempted sexual battery on a child under the age of 12	2,3,4a-4d, 5, 6
0007	27	60	Mild MR	Attempted sexual battery and lewd assault on a child under the age of 16	1
0019	34	67	Mild MR	Sexual battery on a minor under the age of 12	1
0022	38	69	Mild MR	2 counts of sexual battery on a child; 2 counts of performing a lewd act on a child	1, 5
0027	42	53	Mild MR	Capital sexual battery on a child under the age of 12	1
0034	29	53	Mild MR	Sexual battery on a child under the age of 12	1
0037	42	60	Mild MR	Kidnapping a child under the age of 13; 2 counts lewd and lascivious assault on a child under the age of 16	1, 2
0038	55	73	Mild MR	2 counts of battery on a child under the age of 12	1
0043	29	47	Moderate MR	Sexual battery on a child under the age of 12	2, 3, 4d, 5
0044	26	64	Mild MR	6 counts of sexual battery on a child under the age of 12	1
0047	53	57	Mild MR	Multiple counts of rape and murder involving children ranging in age from 12-18	1
0049	25	60	Mild MR	Kidnapping and attempted sexual battery on a child under the age of 13	4a
0051	24	66	Mild MR	Lewd and lascivious molestation and lewd and lascivious exhibition towards a child under the age of 12	3, 4d, 5, 6
0054	44	54	Mild MR	4 counts of sexual battery on a child under the age of 12	5, 6

## CHAPTER 2 STUDY 1

### **Introduction**

Assessing DD sex offenders is considered to be a great challenge across the United States and in other countries (see Gardner, Graeber & Machkovitz, 1998). The treatment facility in the current study focuses on rehabilitating individuals with DD that have committed some felony offense, which in most cases was a felony sexual offense. One component of a very large and complex assessment and treatment package for these individuals involves arousal assessments utilizing the penile plethysmograph. Furthermore, the arousal assessments conducted at this facility are unique in that they involve the use of repeated measures. Each individual who participates in these assessments is exposed to the stimulus materials several times across days or even weeks, with the results being used to help make decisions regarding treatments, appropriate placements, and discharge decisions.

By collecting repeated measures of arousal, the information gained is potentially more valuable in that the assessments can provide a comprehensive picture of an individual's arousal by assessing changes in or determining the stability of arousal patterns across time. For example, variables that could affect an individual's arousal on any given day (e.g., lack of sleep, emotional responding, masturbation practices, etc), would be less likely to distort the overall outcomes in that the assessments are conducted across multiple days.

### **Purpose of Study 1**

The purpose of the present study was to evaluate results from arousal assessments conducted at the residential treatment facility to determine if any clear or informative outcomes were obtained.

## **Method**

### **Participants**

The results from 10 individuals from the state residential treatment facility were included in the current study.

### **Arousal Assessments**

The arousal assessments involved measuring an individual's arousal to various types of stimuli through the use of the penile plethysmograph. The penile plethysmograph consists of a penile strain gauge, which is worn around the penis, with an output to a computer that allows a technician to track real-time changes in penile circumference. A change in penile circumference is taken as an indication of an individual's arousal and is measured in the presence of different stimuli considered to be both appropriate (non-deviant) and inappropriate (deviant). All of the arousal assessments reported in the current study were originally conducted by or supervised by a certified penile plethysmograph technician/clinician.

The assessments involved the use of a circumferential mercury-in-rubber strain gauge (D.M. Davis Inc.) connected to a computerized interface. The stimuli used were commercially available and produced by Northwest Media Inc. These stimuli were designed specifically to be used in the assessment of sexual arousal. The stimulus package consisted of 10 video clips that were each exactly 2.5 minutes in duration, and contained either a male or female of a particular developmental age (kindergarten, 6-7, 8-9, teen or adult) engaging in a range of behavior (not intended to be sexually explicit) while wearing a bathing suit. For example, each individual was shown reading a magazine, walking, eating a piece of fruit, sitting on the edge of a pool with their feet splashing in the water, and drying off with a towel. The package also contained an additional stimulus designed to be neutral and involved scenes of boating and fishing. In some

early cases, the participants were exposed to a sexually explicit adult stimulus; however, due to state-level recommendations such material was not used in later cases.

Before beginning the assessment, each individual was required to take a measure of the circumference of his penis in order to ensure that the appropriate gauge size would be selected. The participants were also instructed on how to apply the gauge and where it should be located on the penis. The sessions were conducted in a 7 by 7.5 ft room which contained a recliner, a 27 in. television screen used to present the video clips, a camera which provided a live video feed of the participants from above the shoulders, and a metal lap tray. The technicians were in an adjacent room that contained a computer, a video monitor showing the live feed of the participant, and a video cassette recorder to present the stimuli.

Before each session, the technician was required to calibrate the penile strain gauge in order to ensure accurate measurement. This involved systematically measuring changes in the range of each gauge and matching the measurements with the computer readings. The technician also placed a disposable absorbent pad on the recliner and placed the gauge on top of the pad. At the beginning of each session, the participant was prompted to use the bathroom and given an opportunity to do so if necessary. Additionally, the participant was asked when they last masturbated and the technician recorded the information. Once inside the session room, the participant was instructed to pull his pants and underwear down to his ankles, sit down in the chair and apply the penile strain gauge. Once the gauge was applied, the participant was instructed to place the metal tray over his lap and place his hands on the tray. The purpose of the tray was to eliminate any visual feedback of arousal and to decrease the likelihood that the participant would interfere with the gauge. To ensure privacy, the live video feed remained off until the participant reported that he was ready to begin the session. If the participant attached

the gauge incorrectly or if any other problems occurred during a session (i.e., the gauge broke), they were easily detectable based on the pattern shown in the data stream.

During the session, the technician monitored the real time changes in penile circumference via the computer screen. The video clips were presented one at a time in one of three predetermined orders. Before the presentation of each clip, a detumescence and stability criterion of no changes greater than 5 mm for a period of 1 min had to be met. The technician recorded the circumference of the penis in mm at the beginning of the stimulus presentation and the circumference at the highest point during the stimulus presentation. The difference in these two measures served as the change in penile circumference during each video clip. After all of the clips had been presented, the participant was instructed to remove the gauge, get dressed, wash his hands, and exit the room. One session was conducted per day, and each session involved one presentation of each stimulus for a total of 11 total presentations per session. Sessions were typically conducted 3 to 5 times per week. The total number of sessions conducted with each participant varied, but each assessment involved multiple sessions.

### **Data Analysis**

The results from the repeated measures were retrospectively analyzed to evaluate whether the arousal assessments produced any reliable and informative outcomes. The raw data from the assessments were organized and plotted on a session-by-session basis utilizing a multielement design. Additionally, the data were plotted so that comparisons could be made across gender and age stimuli. Visual inspection was used to determine if the results showed any consistent patterns or trends. Although clinical assessments may have actually included additional sessions, all of the raw data were plotted sequentially as they occurred in time until clear results were evident.

## Results and Discussion

Figure 2-1 shows an example of the real time data obtained from a single arousal assessment session. The solid bars along the bottom of the graph indicate the presentation of each video clip. The numbers on the right side of the figure represent mm. The relevant points of comparison in this figure involve the changes in mm circumference of the penis during the stimulus presentations. For example, the change during the presentation of the male kindergarten stimulus (2<sup>nd</sup> bar) is less than the change in mm during the female kindergarten stimulus (4<sup>th</sup> bar).

Representative results from the arousal assessments are shown in figures 2-2 through 2-7. All of the data are plotted in terms of mm change in penile circumference across successive presentations of the deviant and non-deviant stimuli used in the assessment. Figure 2-2 shows the results from the arousal assessments for participant 0038. The upper panel of Figure 2-2 shows the results for all stimuli. The middle and lower panels show the same results separated by gender. Arousal levels to the male stimuli (middle panel) were generally low, except for the male 8-9 category which was consistently higher than the other age groups and consistently higher than the neutral stimulus. Higher overall levels of arousal were evident to the female stimuli (lower panel), but the arousal was differentially higher in the presence of the female 8-9 stimulus and to the female adult stimulus. In most cases, arousal in the presence of these stimuli was higher than in the presence of any of the other stimuli and consistently higher than in the presence of the neutral stimulus in all cases.

Figure 2-3 shows an example of some of the additional data analyses that were conducted, again using results from participant 0038. In this case, comparisons were made between gender at each age category as well as with the neutral stimulus. Across the majority of sessions, arousal to the female stimuli was higher than to the male stimuli and to the neutral

stimulus. In the 8-9 category, arousal levels to the male stimulus were higher than in other age categories; however, arousal levels to the female stimulus remained higher in all but one instance. Overall, results for 0038 show differential arousal to females, for both deviant and adult stimuli, and arousal to males in the 8-9 category.

Figure 2-4 shows the arousal assessment results for participant 0037. In the upper panel, high levels of arousal were evident for the female 6-7, female 8-9, and the sexually explicit adult stimulus (labeled "Adult X" on the figure). Arousal levels in the presence of these stimuli were higher than to the neutral stimulus in all cases. Furthermore, arousal levels to the female 8-9 stimulus were higher than to all of the other stimuli (aside from the sexually explicit adult stimulus) in all but one session when arousal levels to the female 6-7 stimulus reached similar levels. The lower panel of Figure 2-4 shows a gender comparison between the two age categories that produced the highest levels of arousal grouped together plotted against the neutral stimulus. Arousal levels to the female 6-9 category (created by combining data from the 6-7 and 8-9 age groups) were generally higher than arousal levels to the males and consistently higher than the neutral stimulus. Therefore, in this case arousal to females ranging in age from 6-9 was differentiated from other age and gender categories, as well as from the neutral stimulus.

Figure 2-5 shows the arousal assessment results for participant 0034. The upper panel shows the results to the male stimuli and the explicit adult stimulus. In this case, arousal to all of the male age categories was undifferentiated from the arousal occurring in the presence of the neutral stimulus, and the highest levels of arousal occurred in the presence of the sexually explicit adult stimulus. The middle panel shows the arousal to the female stimuli compared to neutral and compared to the sexually explicit adult stimulus. Arousal to all but one category of the female stimuli (female 8-9), reached higher overall levels and was differentiated from arousal

to the neutral stimulus. Also for this participant, a decreasing trend was evident in the arousal levels to the sexually explicit adult stimulus and to all of the female stimuli. The lower panel shows a comparison between males and females from the age categories kindergarten and 6-7 grouped together and plotted against the neutral stimulus. Although the overall arousal levels are generally low (relative to other arousal levels seen with some individuals), arousal to the female stimuli was higher than to the male stimuli and the neutral stimulus in all cases while arousal to the male stimuli (or lack thereof) matched the neutral stimulus.

Figure 2-6 shows the results of the arousal assessment for participant 0044. Arousal levels to the male stimuli are displayed in the upper panel. Low overall levels of arousal were evident to the male stimuli with the exception of two high points to the male 6-7 stimulus and one high point to the male 8-9 stimulus. Arousal levels to the other stimuli fluctuated around the same levels as the neutral stimulus. Arousal levels to the female stimuli are displayed in the middle panel. Higher overall levels of arousal were evident to the female stimuli, and arousal to the majority of the female stimuli, except for the female kindergarten stimulus, was higher than to the neutral stimulus. The lower panel shows arousal to the three deviant female stimuli that generated the highest levels of arousal plotted against neutral. Arousal was differentially higher to the female stimuli, but among the female stimuli, arousal reached similar levels among the female kindergarten, 8-9, and teen stimuli.

Figure 2-7 shows the results of the arousal assessment results for participants 0022 (upper panel), 0001 (middle panel), and 0027 (lower panel). The results for participant 0022 show high levels of arousal to both deviant and non-deviant stimuli. The highest levels of arousal occurred in the presence of the sexually explicit adult stimulus. Arousal to the deviant and non-deviant stimuli was evident, but no systematic differentiation occurred between the various age

categories or the neutral stimulus. The assessment results for participant 0001 also showed the highest levels of arousal in the presence of the sexually explicit adult stimulus. No clear differentiation among the other stimuli compared with each other and with the neutral stimulus was apparent. This figure also shows a decreasing trend in the overall arousal levels to the stimuli (except for the sexually explicit adult stimulus) during the first part of the assessment, after which the levels stabilized. Assessment results for participant 0027 did not show arousal to any of the deviant or non-deviant age categories. There is no clear separation among the gender or age categories or the neutral stimulus. High levels of arousal only occurred in the presence of the sexually explicit adult stimulus. Results for 0027 are representative of three other outcomes showing no deviant arousal (0007, 0019, and 0047).

Overall, three general patterns of results from the arousal assessments were evident: differentiated deviant arousal, undifferentiated deviant arousal, and no deviant arousal. Four of the participants (0037, 0038, 0034, 0044) showed differentiated deviant arousal. Differentiated deviant arousal was characterized as showing arousal in the presence of a particular age and gender category that was higher than the arousal to other categories and to the neutral stimulus. In all four of these cases, levels of arousal were consistently higher to particular age categories, gender categories, or both. Furthermore, the differentiated arousal patterns were also consistently higher than arousal levels to the neutral stimulus.

Two of the participants (0022, 0001) showed undifferentiated deviant arousal patterns. Undifferentiated deviant arousal was characterized as showing similar arousal levels to deviant and non-deviant stimuli that was higher than the arousal in the presence of the neutral stimulus. For these participants, arousal levels to both the deviant and non-deviant stimuli reached similar levels and were higher than to the neutral stimulus in most cases. However, the arousal levels to

the deviant stimuli were not higher in the presence of any particular age or gender category (aside from the sexually explicit adult stimulus).

Four of the participants (0007, 0019, 0027, 0047) did not show any arousal to the deviant stimuli. In these cases, arousal levels in the presence of the child stimuli were similar to the levels shown in the presence of the neutral stimulus. All of these individuals did, however, show arousal to the sexually explicit adult stimulus. Only the results from participant 0027 were presented because they showed representative patterns for the other participants who fell into this category.

Despite the issues surrounding the predictive validity of arousal assessments, the current analysis suggests that such assessments can yield clear outcomes with sex offenders who are developmentally disabled. Furthermore, by utilizing repeated measurement, more definitive conclusions can be drawn. For example, treatment decisions based on only one or two sessions of the assessment for participant 0038 would likely have been different from decisions based on the complete assessment. By the second session, the highest levels of arousal occurred in the presence of the appropriate female stimulus and other levels of arousal were mixed. By the end of the assessment, it was clear that high levels of arousal also occurred in the presence of the female 8-9 stimulus.

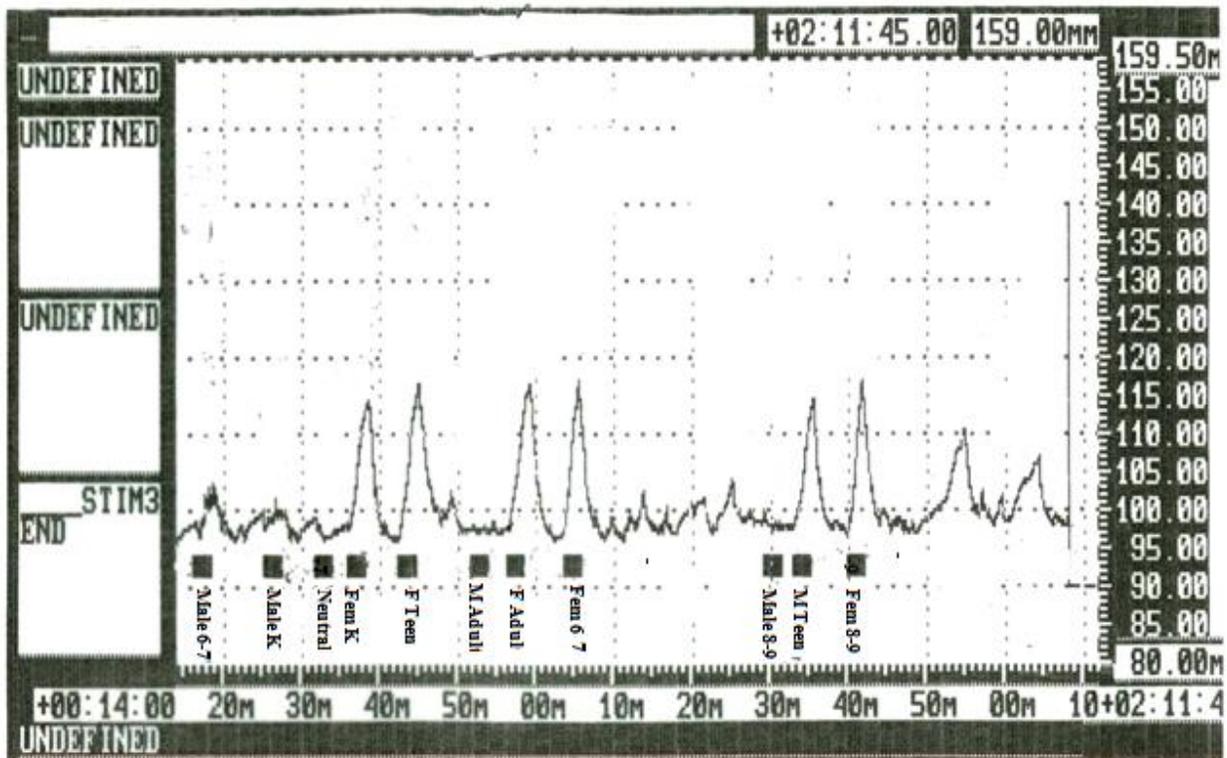
The results for participants 0034 and 0001 are unique in that they show a decreasing trend in arousal across repeated exposures to the stimuli. This may illustrate a possible limitation of conducting assessments using repeated measures. Repeatedly exposing individuals to the same stimuli may lead to habituation of their arousal response. Alternatively, this decreasing trend may also be a product of respondent extinction resulting from the repeated presentation of the visual stimulus in the absence of any sexual stimulation. In this study, only 2 of 10

participants exhibited this pattern of responding, which suggests that it may not be a widespread problem. Regardless, future studies utilizing repeated measures should take into account this possibility.

Taken as a whole, the arousal assessments showed not all of the participants were differentially aroused by the deviant stimuli. The participants who did not show any arousal to the standard stimuli included in the package (i.e., all the stimuli except for the sexually explicit adult stimulus) are perhaps the most difficult to interpret. Numerous possibilities could produce such an outcome. For example, in some cases, individuals may not be able to become aroused under the assessment conditions. In other cases, the participants may not find any of the stimuli sexually stimulating, or they may find the stimuli arousing but have learned to suppress arousal during the assessment. Because arousal occurred in the presence of explicit material, it is clear that participants were capable of becoming aroused under the assessment conditions and that the equipment was working properly. In other cases, testing arousal to sexually explicit stimuli can be useful in determining an individual's maximum level of arousal and how that compares to arousal generated by other stimuli. However, due to the controversial nature of showing sexually explicit stimuli they are typically no longer in use (Scott, 1997).

The methodological approach taken in this study highlights a potential contribution of single-subject methodology for the assessment of sex offenders with developmental disabilities. Other researchers in the field of sex offender assessment may benefit from a working knowledge of single-subject experimental logic. For example, it is conceivable that modest effects that are statistically significant reported in prior studies, are a result of pronounced effects with some individuals mixed with non-effects with other individuals. Conversely, noneffects may wash out important effects in some evaluations. Single-subject methodology allows for an analysis at the

level of individual behavior and, of course, does not require that the evaluation is limited to one subject only.



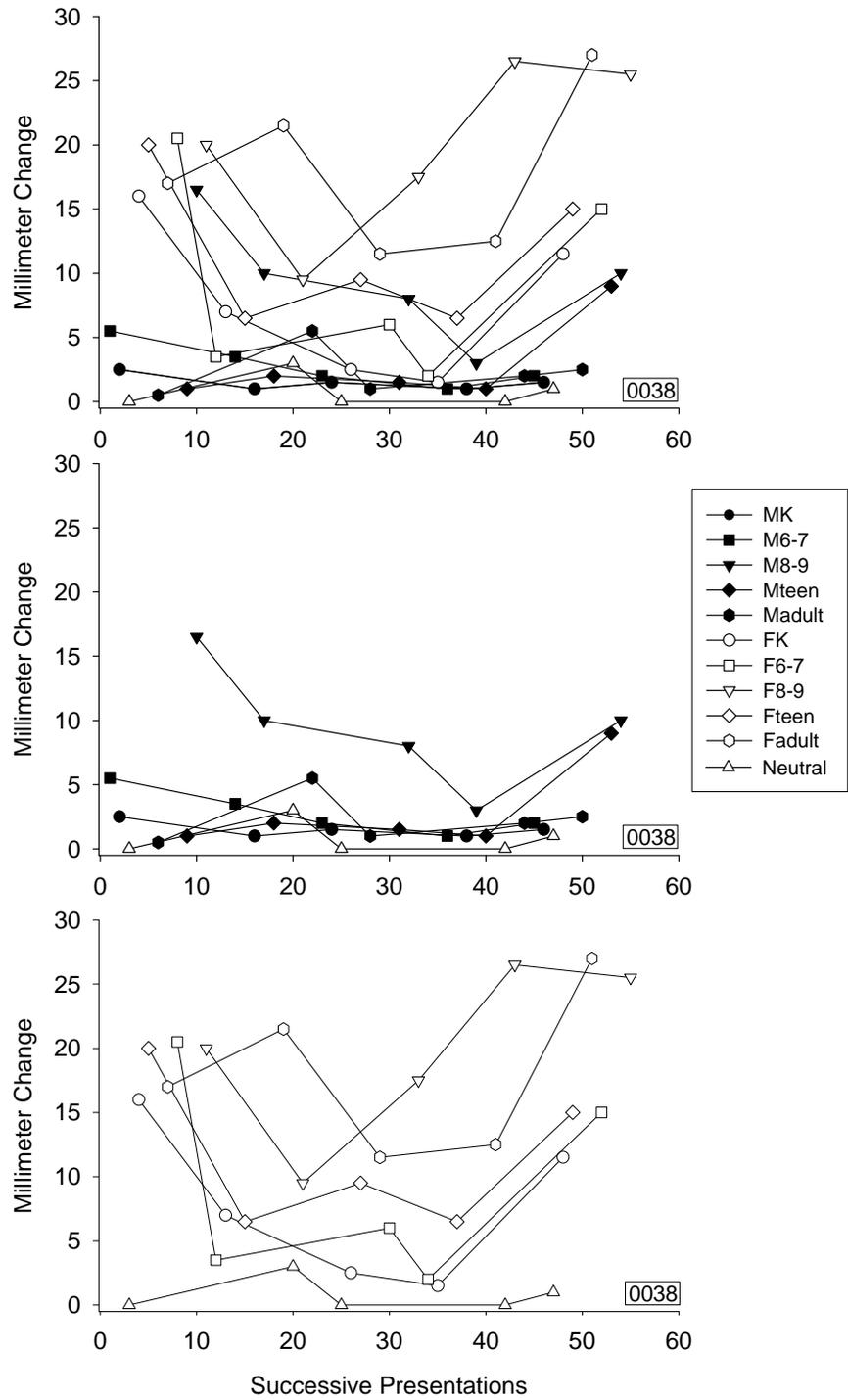


Figure 2-2. (Upper Panel) Assessment results for participant 0038. The middle and lower panels show the same assessment results grouped by the male stimuli (Middle Panel) and the female stimuli (Lower Panel).

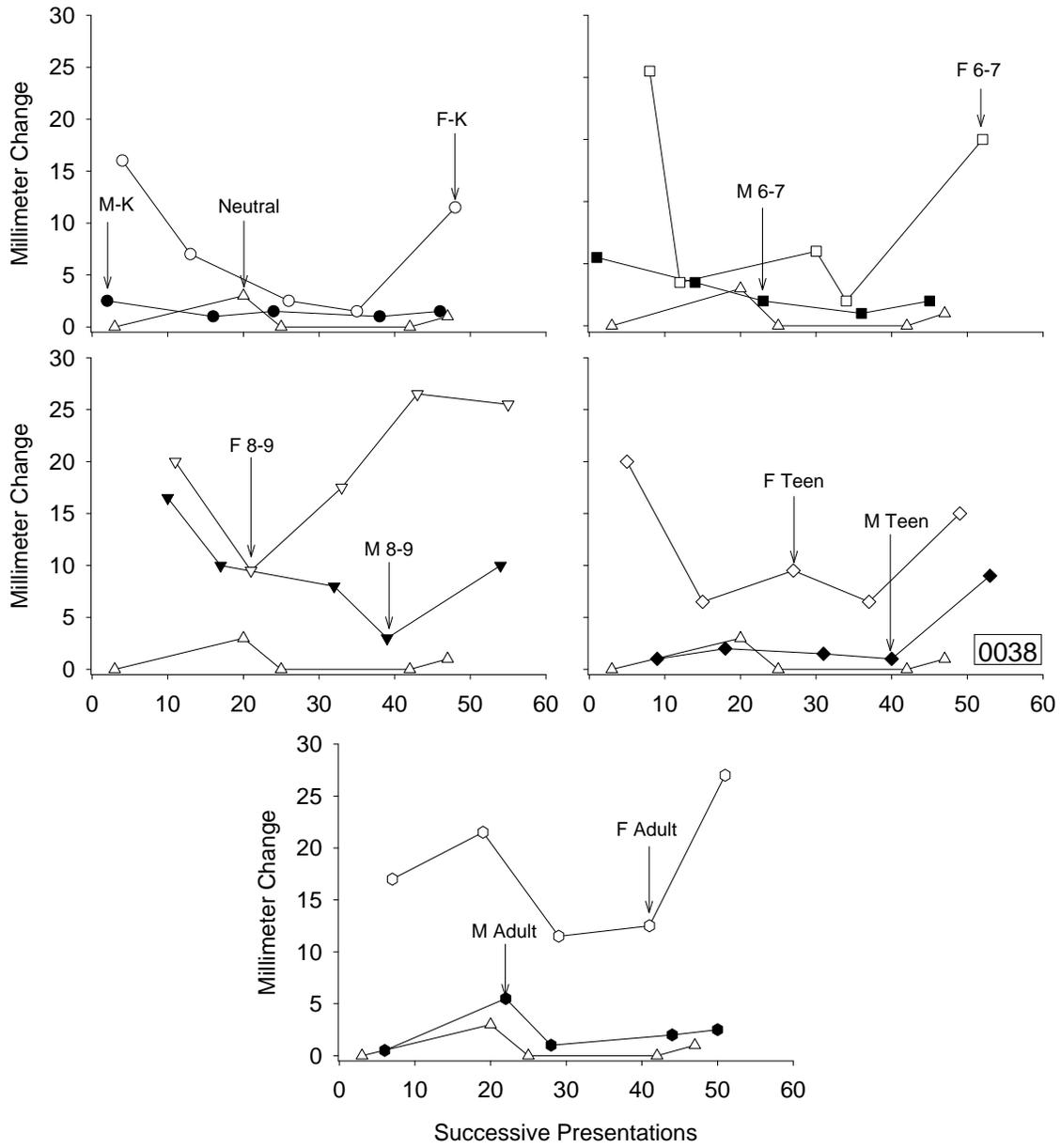


Figure 2-3. Assessment results for participant 0038 separated by age and gender.

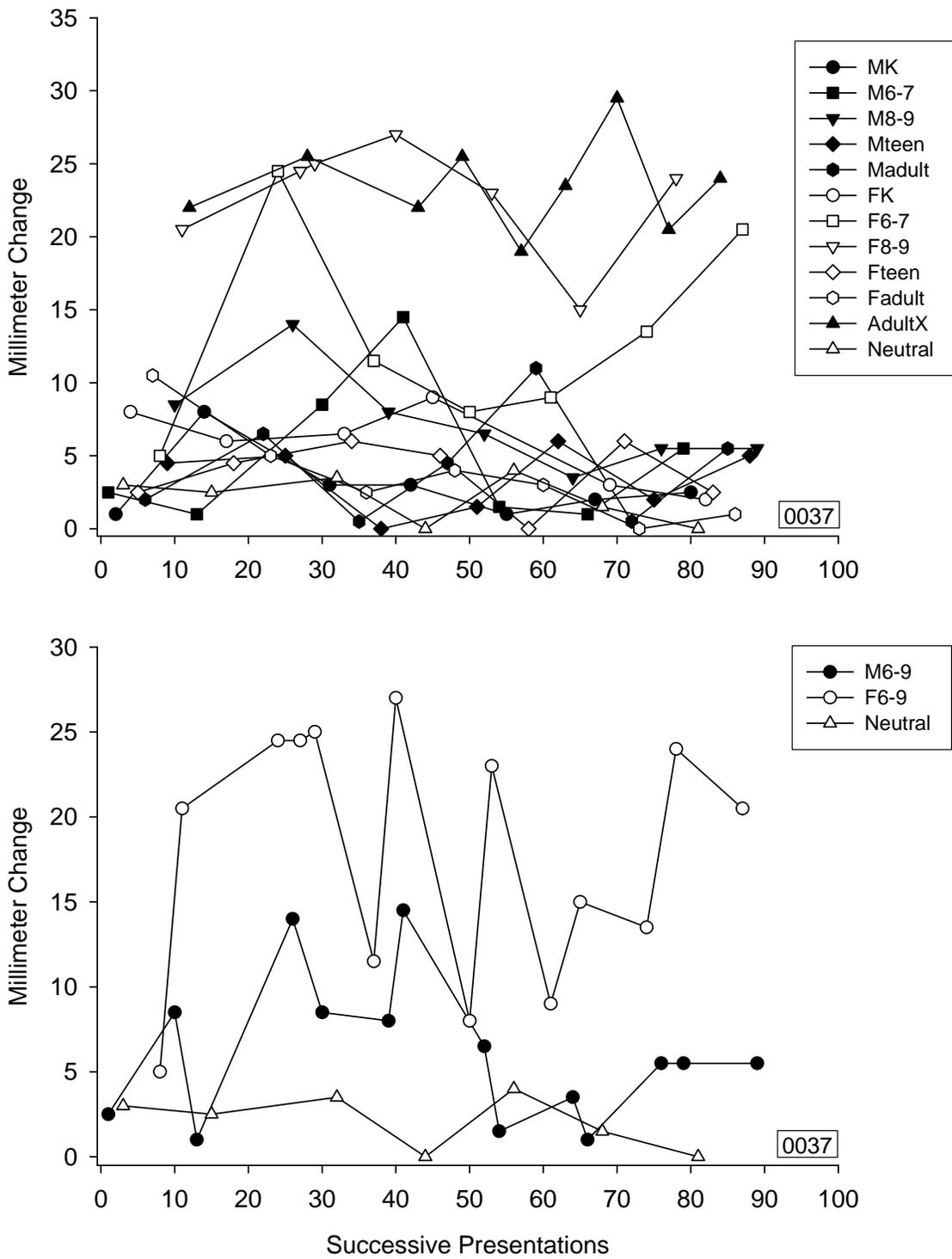


Figure 2-4. (Upper Panel) Assessment results for participant 0037. (Lower Panel) Assessment results grouped together by age categories 6-9.

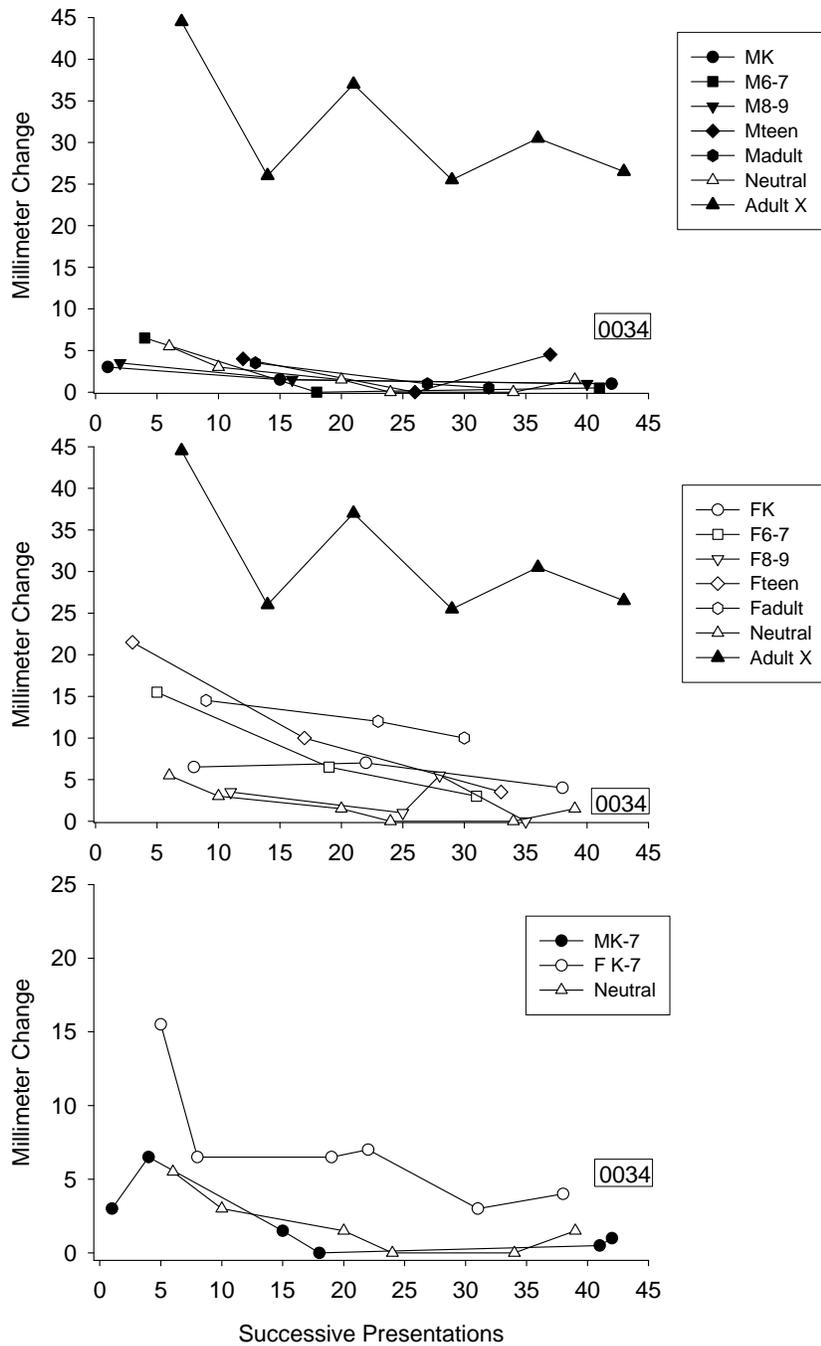


Figure 2-5. Assessment results for participant 0034 to the male stimuli (Upper Panel) and female stimuli (Middle Panel). (Lower Panel) Comparison of assessment results between males and females ranging in age from kindergarten to age 7.

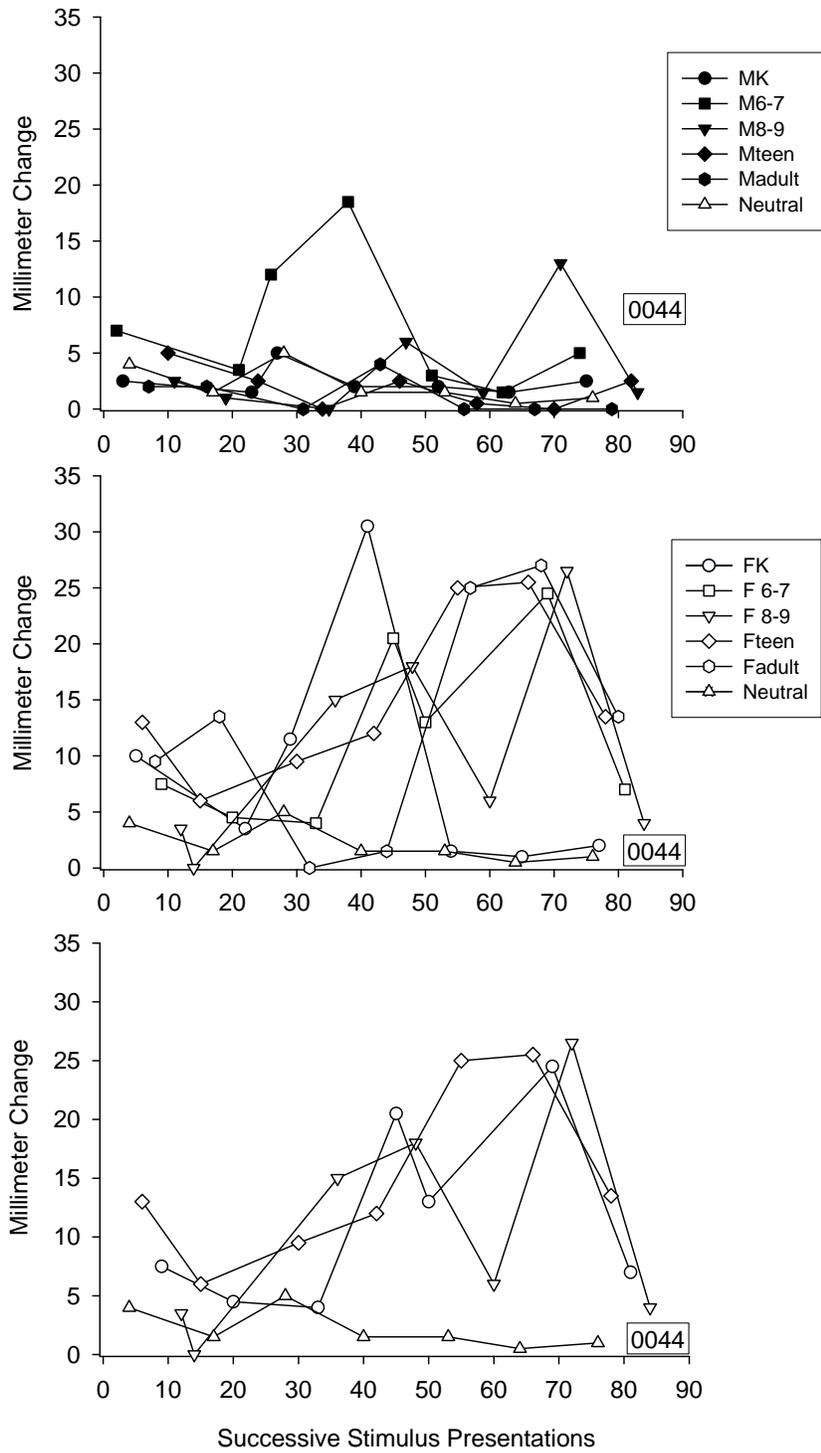


Figure 2-6. Assessment results for participant 0044 to the male stimuli (Upper Panel) and female stimuli (Middle Panel). (Lower Panel) Assessment results grouped together by the highest female age categories.

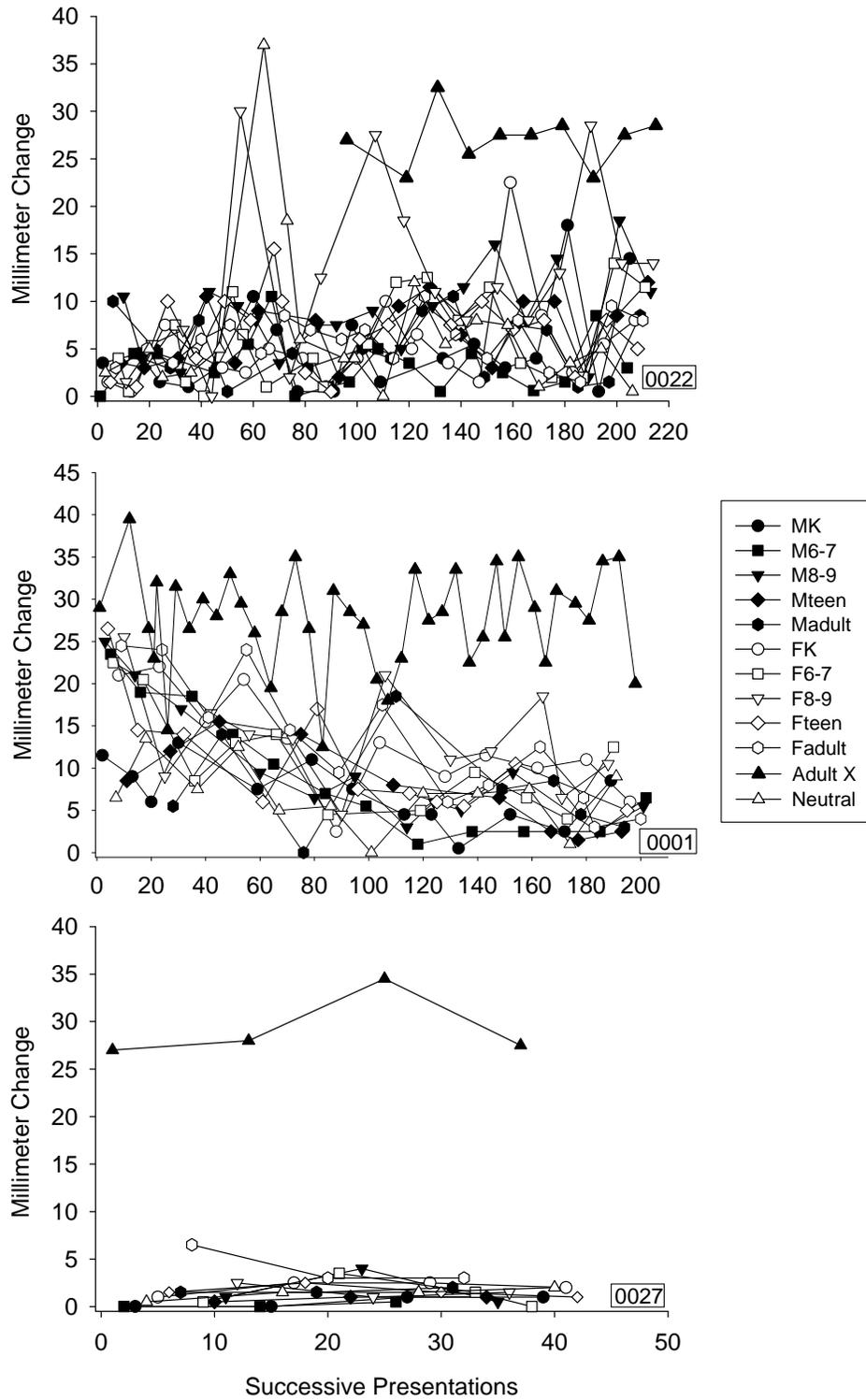


Figure 2-7. Assessment results for participant 0022 (Upper Panel), participant 0001 (Middle Panel) and participant 0027 (Lower Panel).

## CHAPTER 3 STUDY 2

### **Introduction**

Although the outcomes of study 1 pointed to potentially useful implications of a behavioral approach to assessing sex offenders with developmental disabilities, the methods involved evaluating previously existing data.

### **Purpose of Study 2**

The purpose of the present study was to replicate the general procedures used in study 1 with additional participants who were currently being assessed and to evaluate additional data analysis techniques.

### **Method**

#### **Participants**

Three individuals from the same state residential treatment facility for developmentally disabled offenders were included in the current study. One participant (0037) also participated in study 1.

#### **Procedures**

All of the procedures for the arousal assessments were identical to those used in study 1, however all of the assessments were conducted by the author (who was serving under contract to assist with assessments) under the supervision of a certified sex offender therapist. The assessments continued only until clear and informative outcomes were obtained.

#### **Data Analysis**

The results were analyzed as in study 1. The raw data were plotted using a multielement design and visual inspection was used to determine if the data showed any consistent patterns or

trends. In addition, the data were plotted in terms of the average level of arousal obtained for each stimulus across an entire assessment.

### **Results and Discussion**

The results obtained for all 3 participants are shown in figures 3-1 through 3-6. Figure 3-1 shows the results from the arousal assessments for participant 0043. Arousal levels to the male stimuli (upper panel) were lower than arousal levels to several of the female stimuli (middle panel). The lower panel shows a comparison between the female age categories that produced the highest levels of arousal and the same age categories from the male stimuli plotted against the neutral stimulus. Arousal levels to the female K-9 category were generally higher than arousal levels to the males and consistently higher than the neutral stimulus, thereby showing differentially higher levels of arousal to the females in these age categories.

Figure 3-2 shows a comparison between the overall levels of arousal obtained to the male and female stimuli across the entire assessment. The data are plotted as the average mm change obtained per age and gender category. The upper panel shows the results for the male stimuli. Although the overall arousal levels were low, the lowest arousal also occurred to the non-deviant adult male stimulus. The arousal levels to the other age categories are essentially undifferentiated from one another. The lower panel shows the outcomes for the female stimuli. Arousal levels were lowest to the non-deviant age category (female adult) and highest to the 3 youngest age categories with the highest levels of arousal occurring to the female kindergarten stimulus.

Figures 3-3 and 3-4 show the arousal outcomes for participant 0005. Figure 3-3 shows high levels of arousal obtained for several of the age categories for both the male stimuli (upper panel) and the female stimuli (lower panel). In general, the arousal levels were undifferentiated in both gender categories except for consistent low levels shown to the male teen stimulus in the

top panel and the female adult in the bottom panel. Figure 3-4 shows two distinct patterns of responding for the male (upper panel) and the female (lower panel) stimuli. Arousal levels for the male stimuli show increases as the age categories increase up until it peaks to the male 8-9 stimulus and then drops off for the male teen and male adult stimuli. The outcomes for the female stimuli show a dissimilar pattern of responding in that the arousal levels decrease as the age categories increase with the highest levels occurring to the female kindergarten stimulus and the lowest levels occurring to the female adult stimulus.

Figures 3-5 and 3-6 show the results for participant 0037. Figure 3-5 shows that arousal levels to both deviant and non-deviant age categories were low and undifferentiated from the neutral stimulus for both the male (upper panel) and female (lower panel) stimuli. Figure 3-6 also shows that no visibly different levels of arousal were obtained for any of the age or gender categories, although it shows that the highest levels of arousal were obtained to the female adult stimulus (lower panel).

Overall, the results of this study replicated the results obtained in study 1. Three patterns of arousal outcomes were obtained: differentiated deviant arousal, undifferentiated deviant arousal, and no deviant arousal. One participant (0043) showed differentiated deviant arousal, another participant (0005), showed undifferentiated deviant arousal, and the third participant (0037) did not show any arousal to the deviant stimuli. The fact that the same patterns of responding were obtained in this study provides additional support for the utility of using arousal assessments with repeated measurement for DD sex offenders. Furthermore, none of the arousal outcomes obtained in this study showed any evidence of habituation across repeated exposures to the stimuli. As discussed in study 1, habituation is considered to be a potential limitation of arousal assessments involving repeated measurement. These outcomes,

however, provide an additional demonstration that habituation may not be a prevalent feature of these types of assessments.

As in study 1, the outcomes of individuals who do not show arousal to any of the stimuli during an assessment can be the most difficult to interpret. Participant 0037 did not show any arousal to the deviant or non-deviant stimuli, however, what makes this case more difficult than those discussed in study 1 is that these assessments did not involve the use of any sexually explicit stimuli (recall their use was now prohibited). In previous cases, even though responding to the typical assessment stimuli was low there were high levels of responding to the sexually explicit stimulus (e.g., participant 0027 from study 1). This at least demonstrates that an individual is capable of achieving arousal under controlled situations. The fact that no such comparisons were available for participant 0037 (i.e., the use of sexually explicit stimuli was not allowed) increases the difficulty of interpreting the results. It is important to note, however, that participant 0037 also participated in study 1. The fact that this participant's outcomes in study 1 showed differentiated deviant arousal and currently showed no deviant arousal adds an additional level of complexity to potential explanations. Given that the assessments were conducted approximately 8 years apart, with no intervening assessments, it is possible that his sexual preferences had changed or that he was no longer aroused by deviant stimuli. It is also possible that he had similar sexual preferences but had better learned to suppress his arousal by the time he was assessed again for the present study.

The results from this study were also analyzed in terms of the average mm change per category across the entire assessment. Analyzing the results in this way offered additional information about an individual's sexual preferences. For example, figure 3-2 shows the overall outcomes obtained for participant 0043. Although arousal levels were differentially higher to

females ranging in age from kindergarten through 9, the analysis indicates that this individual may most prefer females of kindergarten age. Similarly, figure 3-4 shows the overall outcomes for participant 0005. These results are particularly interesting because they show two different patterns of arousal across gender. Arousal levels to the male stimuli continue to increase across age and then drop to much lower levels for the male teen and male adult stimuli. Arousal levels to the female stimuli, however, decrease as the age of the females increase. The analysis shows that different ages are preferred depending upon gender, as well as which of the particular age categories may be most preferred. For participant 0037, this type of analysis is less informative given that arousal levels were low across all of the stimuli. In terms of the female stimuli (lower panel of figure 3-6), however, the highest levels of arousal were shown to the adult female. Although the overall level was still low, it may point to potential changes in sexual preference that could have occurred since the previous assessment.

In general, it appears that there is enough evidence to suggest that informative outcomes can be obtained when using phallometric assessments with DD sex offenders. Furthermore, possible limitations of using repeated measures of arousal (i.e., habituation) do not seem warranted and are outweighed by the potential utility that such assessments provide. It is still possible, however, that some arousal assessment outcomes, particularly negative outcomes, could be the result of extraneous variables and not actually reflect an individual's sexual preferences. Study 3 was designed to investigate possible variables that could influence arousal assessment outcomes.

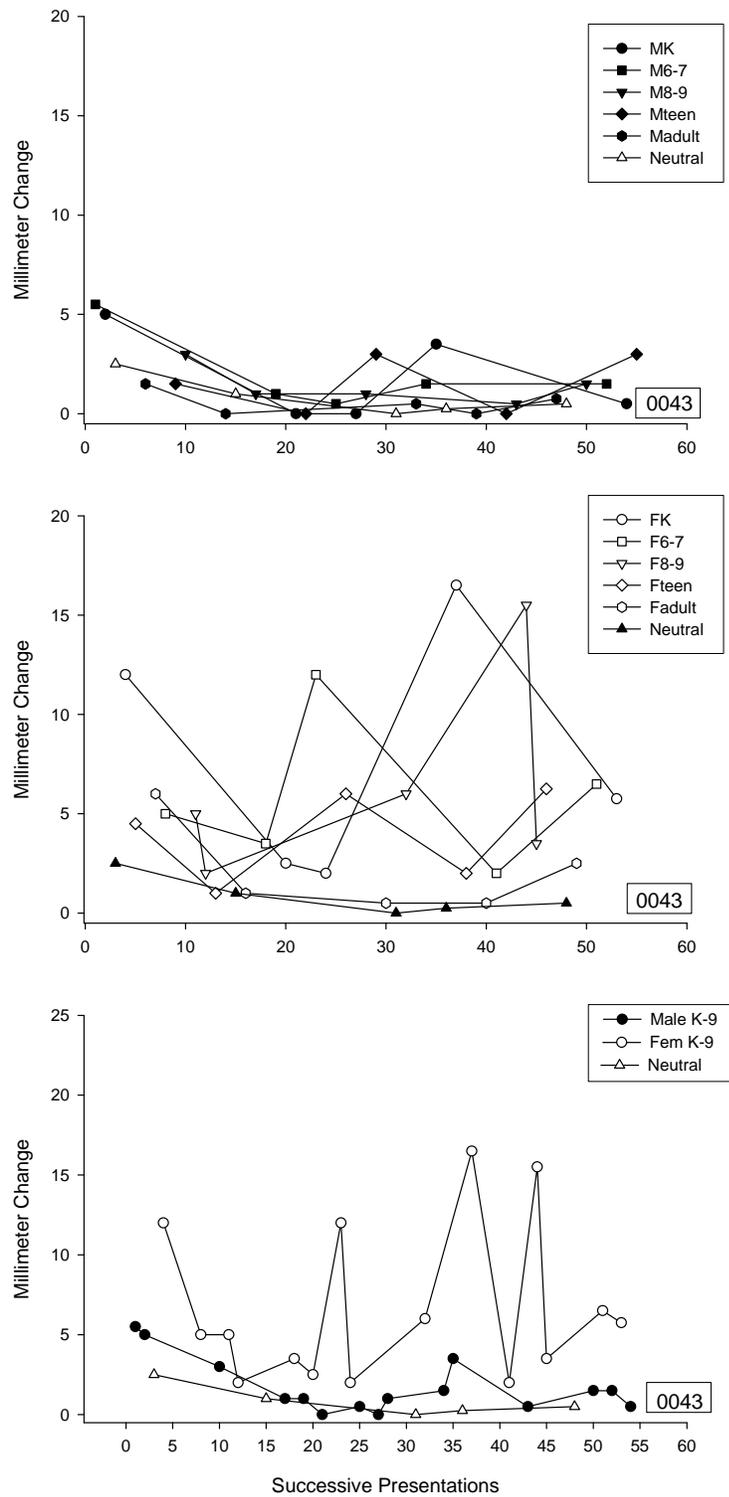


Figure 3-1. Assessment results for participant 0043 to the male stimuli (Upper Panel) and female stimuli (Middle Panel). (Lower Panel) Comparison of assessment results between males and females ranging in age from kindergarten to age 9.

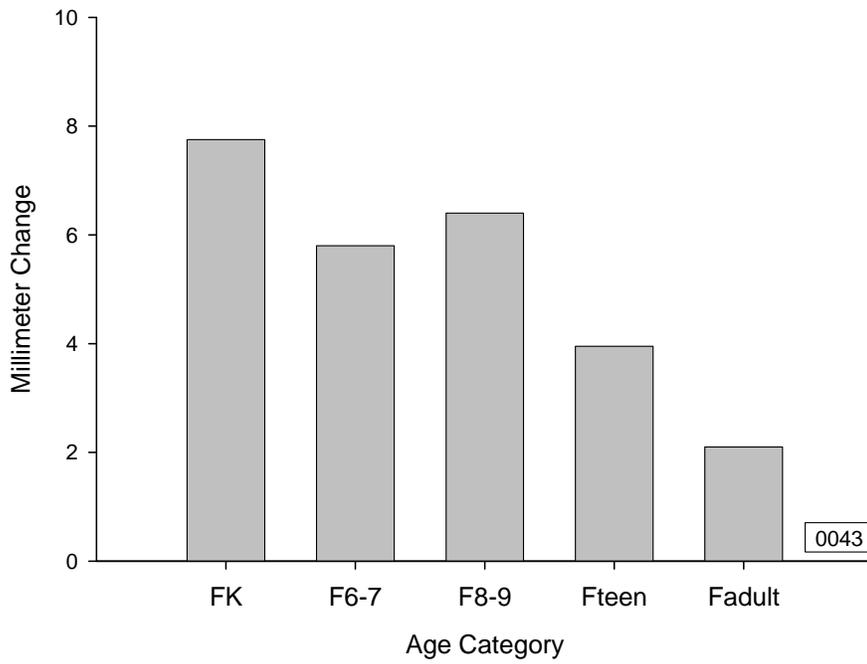
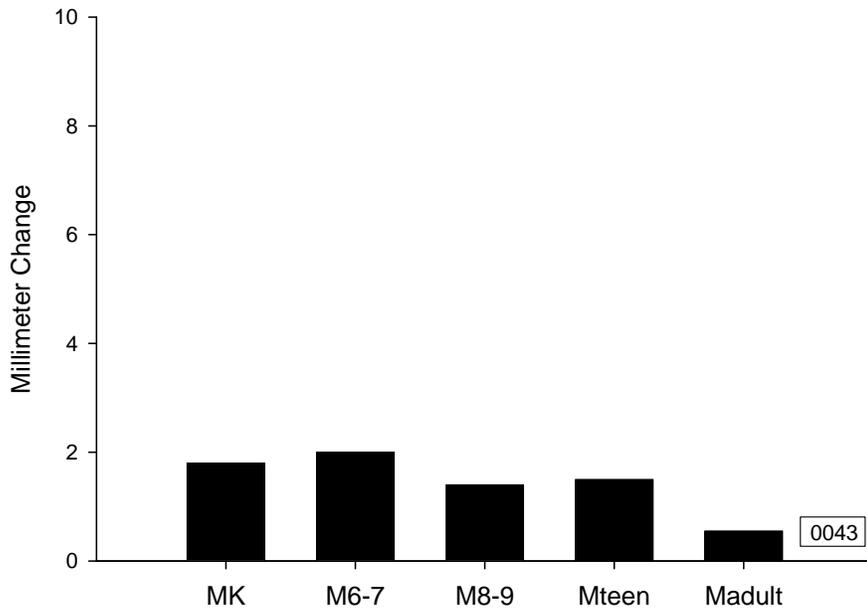


Figure 3-2. Overall arousal levels obtained for participant 0043 to the male stimuli (Upper panel) and the female stimuli (Lower panel).

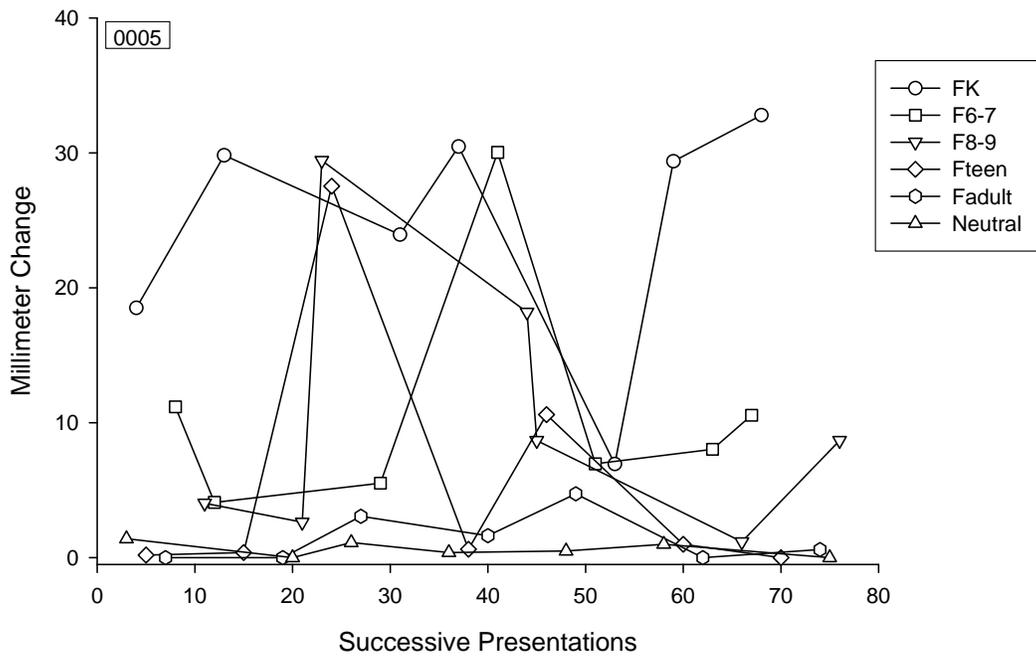
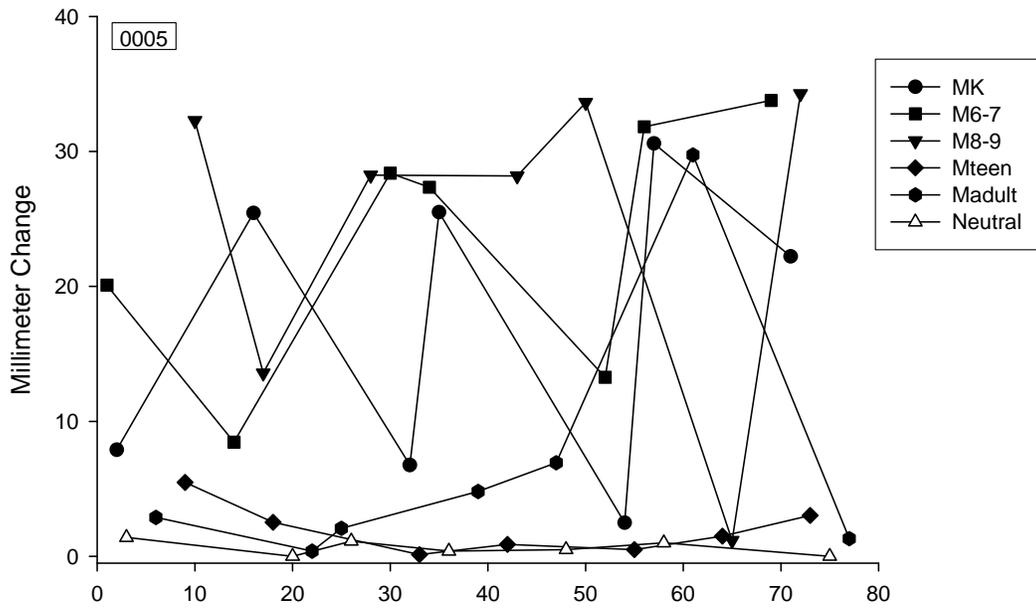


Figure 3-3. Assessment results for participant 0005 to the male stimuli (Upper Panel) and female stimuli (Lower Panel).

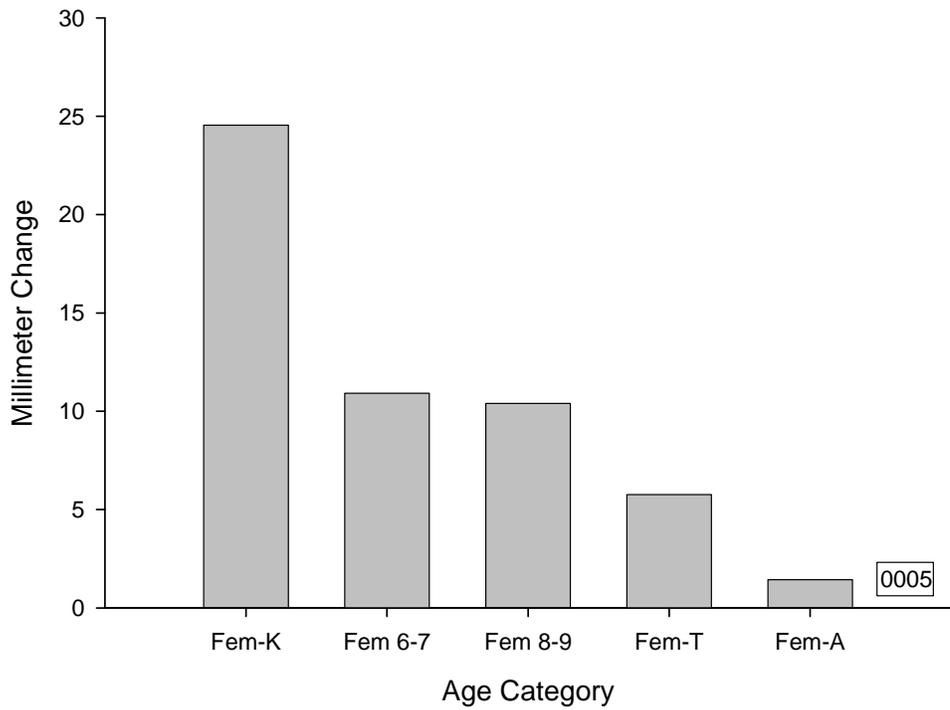
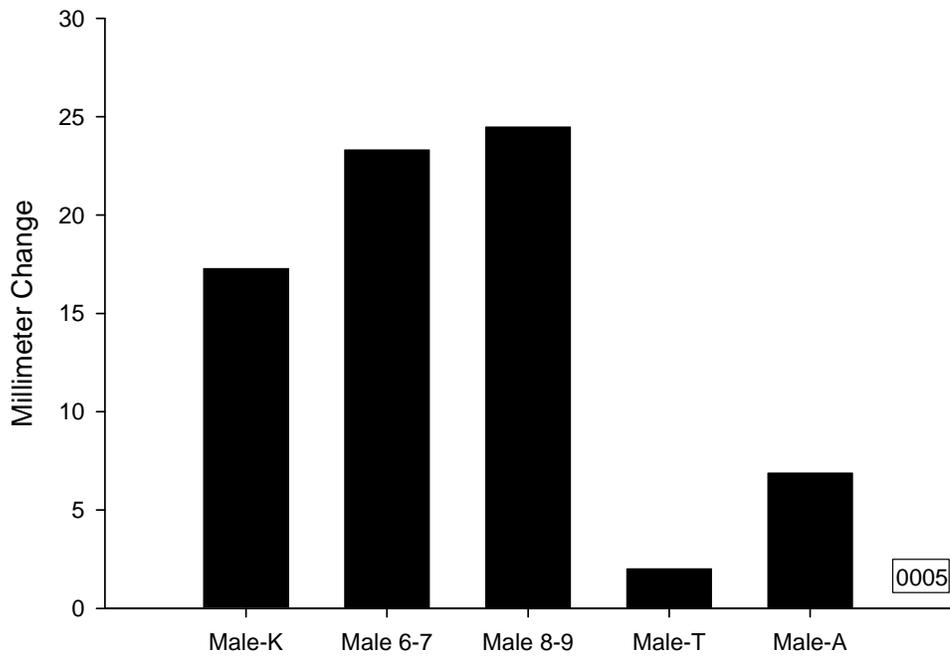


Figure 3-4. Overall arousal levels obtained for participant 0005 to the male stimuli (Upper panel) and the female stimuli (Lower panel).

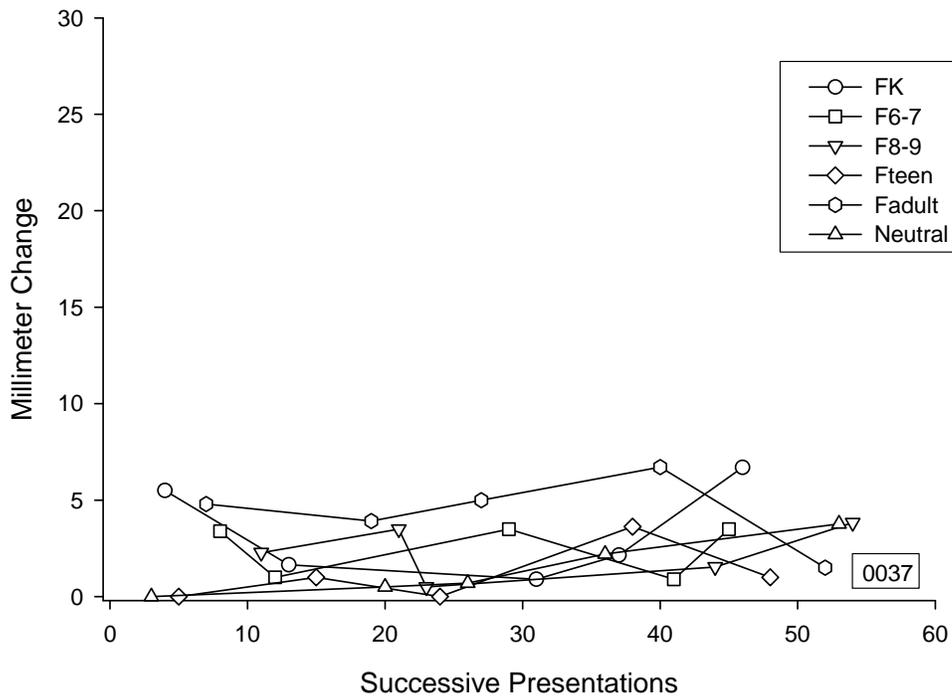
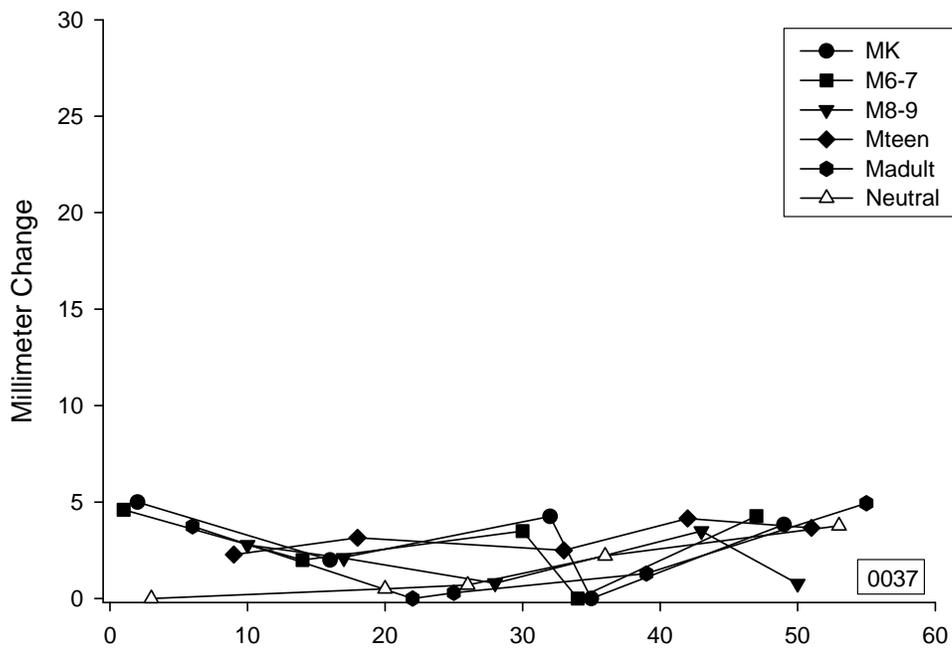


Figure 3-5. Assessment results for participant 0037 to the male stimuli (Upper Panel) and female stimuli (Lower Panel).

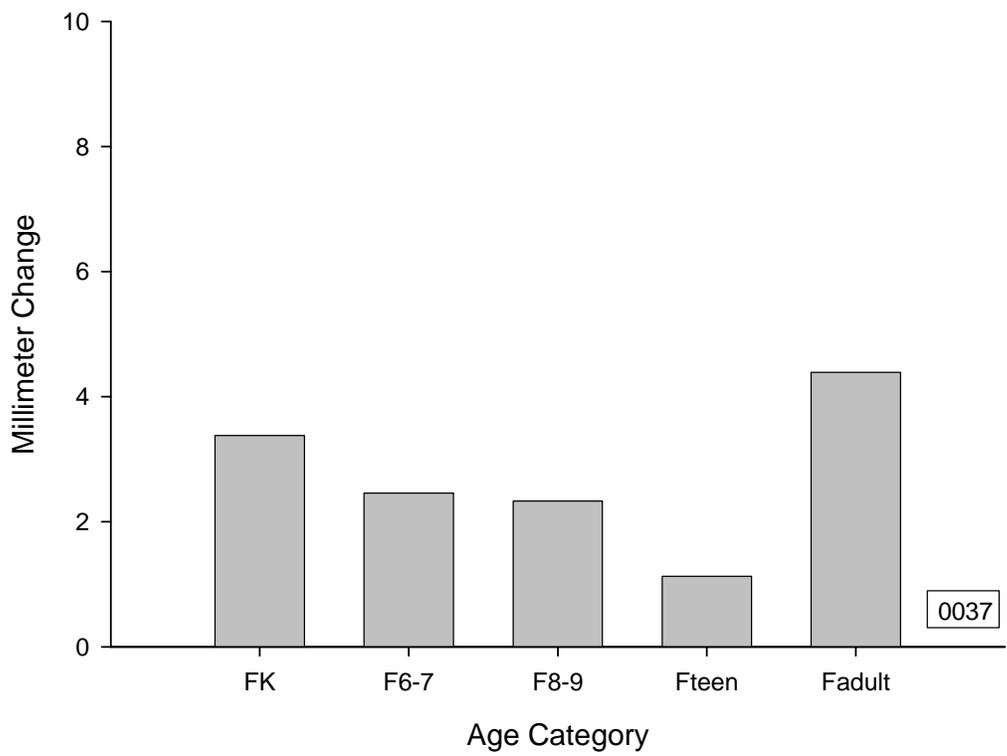
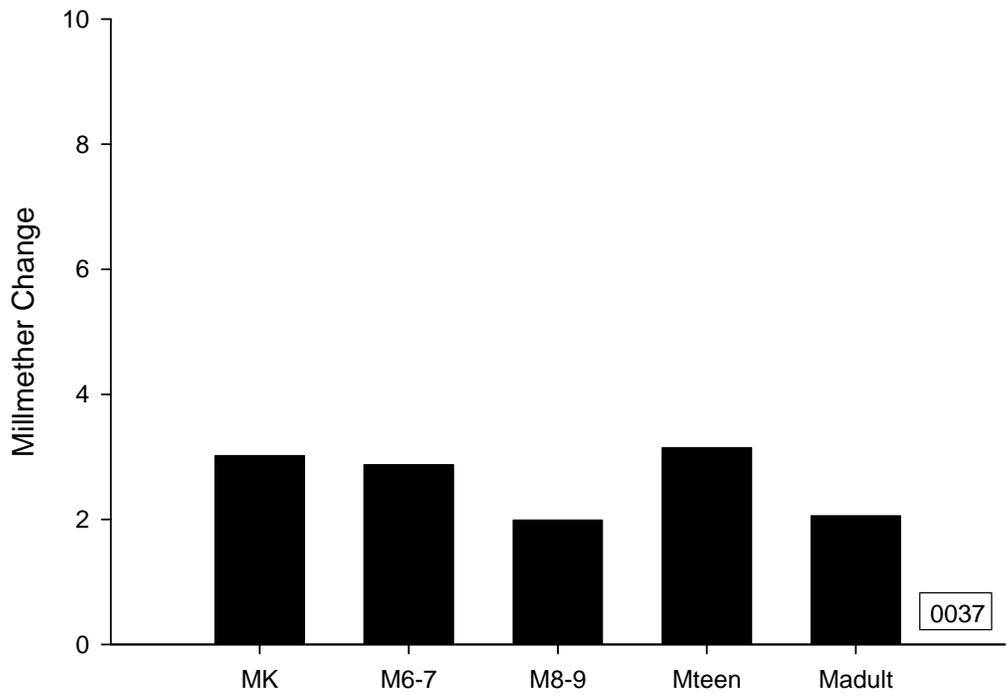


Figure 3-6. Overall arousal levels obtained for participant 0037 to the male stimuli (Upper panel) and the female stimuli (Lower panel).

## CHAPTER 4 STUDY 3

### **Introduction**

One of the most commonly cited concerns with the use of arousal assessments involves the potential for obtaining inaccurate outcomes due to extraneous factors. For example, the time since an individual last masturbated could affect responding during an arousal assessment due to the refractory period that occurs after ejaculation (Yilmaz & Aksu, 2000). If ejaculation affects the assessment outcomes, then masturbating some period of time before an arousal assessment could potentially lower the overall levels of arousal achieved during the assessment. Collecting repeated measures of arousal could potentially highlight any day to day idiosyncrasies that may result from occasionally conducting a session after an individual may have masturbated. Also, if an individual consistently masturbates before an assessment it could lead to erroneous conclusions about the individual's sexual preferences. Although a commonly discussed concern in clinical settings, it does not appear that the effects of pre-session masturbation have been investigated with DD sex offenders.

A more widely investigated issue involves the potential for an individual to control their erectile responding either by suppressing arousal to deviant stimuli or increasing arousal to non-deviant stimuli. Although there have been no empirical demonstrations showing that DD sex offenders can successfully control their arousal, it is reasonable that individuals with DD, especially those with mild to moderate levels of DD, might be capable of faking or otherwise controlling their arousal patterns.

### **Purpose of Study 3**

The purpose of the present study was to first investigate the effects of pre-session masturbation and then to investigate the potential to control erectile responding during an arousal assessment in sex offenders with DD.

### **Method**

#### **Participants**

Three individuals from the same state residential treatment facility for DD offenders were included in the current study. Two participants (0005 & 0043) had also participated in study 2. Participant 0043 participated in the masturbation evaluation and participant's 0005 and 0051 participated in the suppression evaluation.

#### **Masturbation Evaluation**

**Baseline.** Arousal assessments were conducted using the same procedures and stimuli used in studies 1 and 2.

**Pre-Session Masturbation.** Prior to each session, the behavior analyst discussed with the participant if he was able to participate in an arousal assessment for that day. If the participant agreed, the behavior analyst set-up the session and then briefly met with the participant to review instructions. The participant was instructed to go to his room and masturbate until he ejaculated. Upon having given a verbal report of completion, the arousal assessments were conducted. The arousal assessments were always conducted within 5-min of the verbal report of masturbation completion. If it was not possible to begin the session within 5-min, no session was conducted that day. Given the fact that arousal levels to the male stimuli for participant 0043 were low in baseline (figure 8), the effects of masturbation were only evaluated using the female stimuli. Furthermore, even though showing arousal to the adult female stimulus

is considered non-deviant, it was included as part of the evaluation given that baseline levels of arousal were high.

### **Suppression Evaluation**

**Baseline.** Arousal assessments were conducted following the same procedures and stimuli used in studies 1 and 2. Arousal assessment outcomes reported in study 2 for participant 0005 served as the first baseline for the current study. The second baseline involved instructing the participant to refrain from suppressing his arousal if arousal occurred.

**Phase 1.** Prior to each arousal assessment, the participant was given a set of instructions. The participant was told to try and stop himself from becoming aroused, but no particular suppression strategies were suggested. Specifically, the participant was told, "if you feel yourself becoming aroused, I want you to try and stop it." The participant was also told that he must watch the assessment videos and not attempt to close his eyes while they were being presented. All of the arousal assessment procedures and stimuli were the same as in studies 1 and 2.

**Phase 2.** If any participants were not capable of suppressing their arousal with the procedures used in phase 1, they participated in phase 2. These assessment sessions were conducted in the same manner as in phase 1, with the addition of a specific strategy for suppressing arousal. In this phase, the participants were told to begin counting backwards from 100 out loud as soon as each video clip started, with the exception of the neutral stimulus. The participants were instructed to count out loud so the researcher could ensure compliance with the task. The participants were also instructed to repeat the counting sequence if they finished while a video clip was still playing. Before beginning this phase, any relevant participants were first tested to ensure they were capable of emitting the target response. The participants were then reminded that they must watch the assessment videos and not close their eyes.

## Results and Discussion

The results of the masturbation evaluation were evaluated with an ABAB reversal design. Figure 4-1 shows the results obtained to the female kindergarten stimulus (upper panel) the female 6-7 stimulus (middle panel) and the female 8-9 stimulus (lower panel). In general, arousal levels to all three stimulus categories were lower during the pre-session masturbation sessions than during the baseline sessions. The overall level of arousal obtained to each stimulus category varied during the baseline sessions, but the pre-session masturbation still produced lower levels of arousal even when baseline levels of arousal were lower as with the female 6-7 category (middle panel). Although arousal levels were generally lower for the pre-session masturbation sessions, the first session of the second phase of the masturbation evaluation produced the highest level of arousal obtained for the female 6-7 stimulus (middle panel). Following this session, however, the arousal decreased to levels obtained during the previous pre-session masturbation phase. Figure 4-2 shows the outcomes obtained to the female teen (upper panel) and the female adult (lower panel) stimuli. Although overall arousal levels during baseline sessions were lower to both of these age categories than previous categories, the arousal levels obtained during the pre-session masturbation phases were generally even lower than those in the baseline sessions.

The results for the suppression evaluation are shown in figures 4-3 through 4-6. Suppression of arousal was evaluated utilizing an ABAB reversal design. Figure 4-3 shows the results with the male stimuli for participant 0005. In general, this participant showed lower levels of arousal when given the suppression instruction as compared to the baseline sessions when the instruction was not given. Arousal levels to the male kindergarten (upper panel) stimulus, the male 6-7 stimulus (middle panel), and the male 8-9 stimulus (lower panel) were all lower during the suppression phases, thereby demonstrating that this participant could effectively

suppress his arousal. Arousal levels to the male teen and male adult stimuli were low in baseline and were therefore not included in the suppression analysis. Figure 4-4 shows the results obtained to the female stimuli for participant 0005. Arousal levels during the suppression phases were lower for these stimuli when compared to the arousal levels obtained in the baseline phases. Specifically, arousal levels to the female kindergarten stimulus (upper panel), the female 6-7 stimulus (middle panel), and the female 8-9 stimulus (lower panel) were lower when the participant was given the instruction to suppress his arousal. Baseline levels of arousal to the female teen and female adult stimuli were too low to allow for any useful evaluation of the suppression instructions and were not included in the analysis. Furthermore, the more specific suppression instruction used in phase 2 of this procedure was not necessary for this participant given the outcomes obtained with the general suppression instruction.

Figures 4-5 and 4-6 show the results for participant 0051. This participant only showed high levels of arousal to the female stimuli and therefore, only the female stimuli were used to evaluate the effects of the suppression instruction. Furthermore, because high baseline levels of arousal were obtained to the female teen and female adult stimuli, they were included as part of the analysis. Figure 4-5 shows the results for the female teen and the female adult stimuli with the phase 1 suppression instruction. Arousal levels for both the female teen (upper panel) and the female adult stimulus (lower panel) were lower during the suppression instruction sessions than during the baseline sessions. Figure 4-6 shows the results obtained with the female kindergarten stimulus (upper panel), female 6-7 stimulus (middle panel), and the female 8-9 stimulus (lower panel). The results showed that the phase 1 suppression instruction was not effective in suppressing arousal to any of the three age categories. Arousal levels during the phase 1 suppression instruction phases were similar to the arousal levels obtained during the

baseline phases. Given the outcomes using the phase 1 suppression instruction, this participant was given the phase 2 suppression instruction. In this case, results showed lower levels of arousal when the participant used the specific suppression strategy compared to previous baseline levels of arousal and the arousal levels obtained when using the phase-1 suppression instruction. Although lower levels of arousal were obtained with the second suppression instruction, the levels were still somewhat elevated for all three age categories, but especially to the female 8-9 stimulus. In general, however, the lowest levels of arousal obtained for all of the categories occurred during the phase-2 suppression instruction sessions.

Taken as a whole, the results of study 3 indicated that both pre-session masturbation and suppression are capable of altering arousal assessment outcomes. Furthermore, using within-subject methodology allowed for evaluations of these procedures and demonstrations of their effects. These outcomes might have important implications given that arousal outcomes that do not accurately reflect an individual's sexual preferences can lead to erroneous treatment decisions. For the pre-session masturbation evaluation, the results indicated that individuals who masturbate before a session may artificially lower arousal levels to deviant stimuli. Although these results may be considered somewhat intuitive, they have never been empirically demonstrated with any sex offender population. Specifically controlling for when an individual masturbates could have a number of practical implications. It is possible that an individual could be monitored for a specified period of time before a session, but in other cases such monitoring may not be possible.

It is also important to note one particular limitation of the masturbation evaluation. The participant gave a verbal report of having masturbated to ejaculation and no direct measurement was conducted in the form of observation or collection of permanent products. Given the

potential embarrassment that observation could have caused the participant and the potential risk of handling human excretions, relying on verbal report data was considered acceptable. It is possible that the individual did not masturbate to ejaculation when instructed; however, this is not likely given the outcomes of this investigation. Failure to masturbate to ejaculation may explain what happened on the first session of the second pre-session masturbation phase where the highest level of arousal to the female 6-7 stimulus was obtained (figure 4-1), but this did not occur on any other session. Another possibility is that the low levels of arousal obtained during the pre-session masturbation phases could have been the result of another variable (e.g., suppression), but the current information does not allow for this determination.

Additional replications are needed to evaluate the overall robustness of the effects. Furthermore, future evaluations should investigate the relationship between masturbation completion and the beginning of the session. It is likely that the period of time following ejaculation before another erection can be achieved would vary from individual to individual. Therefore this time interval could be investigated parametrically where the length of the interval could be systematically lengthened to determine the maximum possible amount of time, following ejaculation, where reduced levels of arousal would still be obtained.

The results of the suppression evaluation showed that DD sex offenders can effectively suppress their arousal. Although this effect had been demonstrated in previous studies, it had not been demonstrated with DD sex offenders nor with repeated measures and reversal designs. In fact, previous suppression evaluations with DD sex offenders showed an inability to suppress arousal (e.g., Murphy, et al., 1983). These outcomes are important given that assessments can be influenced by suppression even with DD sex offenders.

Varying levels of suppression were obtained with the different suppression instructions. For participant 0005, only the non-specific suppression instruction was necessary to achieve low levels of arousal across all the categories of stimuli. For participant 0051, however, the non-specific suppression instruction only produced low levels of arousal to the female teen and female adult stimuli. Only after receiving a more specific suppression instruction was this participant able to reduce his arousal levels, but arousal levels remained somewhat elevated especially to the female 8-9 stimulus. Showing such a pattern of arousal may be an indicator of the strength of an individual's sexual preferences. For example, the fact that this participant was not able to suppress his arousal to the 3 younger female age categories with the first instruction may suggest a stronger sexual preference for these categories than to the female teen and female adult stimuli. Future research in this area could investigate additional techniques for suppressing arousal. For example, in addition to providing specific strategies, reinforcing consequences could be provided for participants who are able to keep their arousal levels below a certain pre-determined level.

Although the primary purpose of study 3 was to evaluate pre-session variables that might influence assessment outcomes, there may also be implications for intervention. In fact, from the standpoint of the facility, masturbation and suppression instructions were considered specifically because of the implications for treatment. Both the masturbation and the suppression strategies could be potentially useful treatment components of an overall larger comprehensive treatment package. For example, individuals could be taught to masturbate before going into community settings and have reduced levels of arousal when encountering potentially high-risk situations, such as being in the presence of children. For this to be effective, specific individualized assessments, as mentioned earlier, would need to be conducted to determine the duration when

an individual's arousal levels would be reduced. Similarly, an individual could utilize any suppression strategies taught during an assessment when out in community settings. For example, if an individual felt himself becoming aroused, he could engage in the appropriate responses and reduce the chances that he would become aroused and potentially be less likely to engage in dangerous behavior. It is important to point out again that these procedures would likely only be effective as part of a more comprehensive treatment program and it is premature to recommend them for use as treatment procedures in isolation.

Even as treatment components, however, there are some potential limitations of both the masturbation and suppression procedures that should be discussed. To begin with, an individual would have to be motivated to use these procedures. Because ultimately the procedures are not administered by other individuals, it is likely that some additional contingencies might have to be introduced to increase the likelihood that the procedures would be followed. Other individuals might be responsible for giving the instructions, but there is no guarantee that they would be followed. Another limitation stems from the fact that these procedures have only been tested in clinical settings and it is not known whether they would produce the same results out in community settings. It would be important to test the effectiveness of these and other procedures outside of clinical settings before they could be considered as possible treatment components.

In general, being able to measure arousal outside of clinical settings would provide essential information not only in terms of assessing the generalization and maintenance of potential treatment outcomes, but also simply in terms of determining the conditions under which arousal occurs in naturalistic settings and how that compares to what happens in clinical settings. Therefore, study 4 was a technical study designed to evaluate arousal outside of clinical settings.

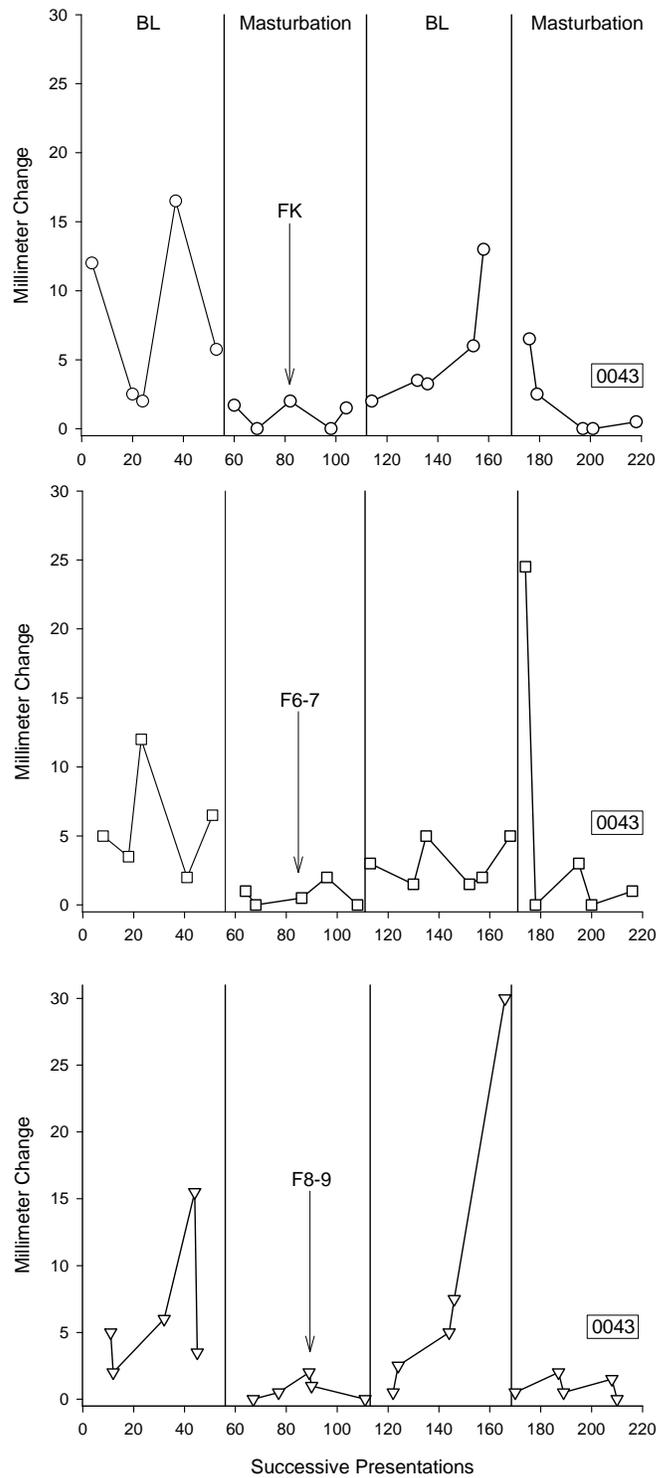


Figure 4-1. Pre-session masturbation results for participant 0043 to the female kindergarten stimulus (Upper Panel), the female 6-7 stimulus (Middle Panel) and the female 8-9 stimulus (Lower Panel).

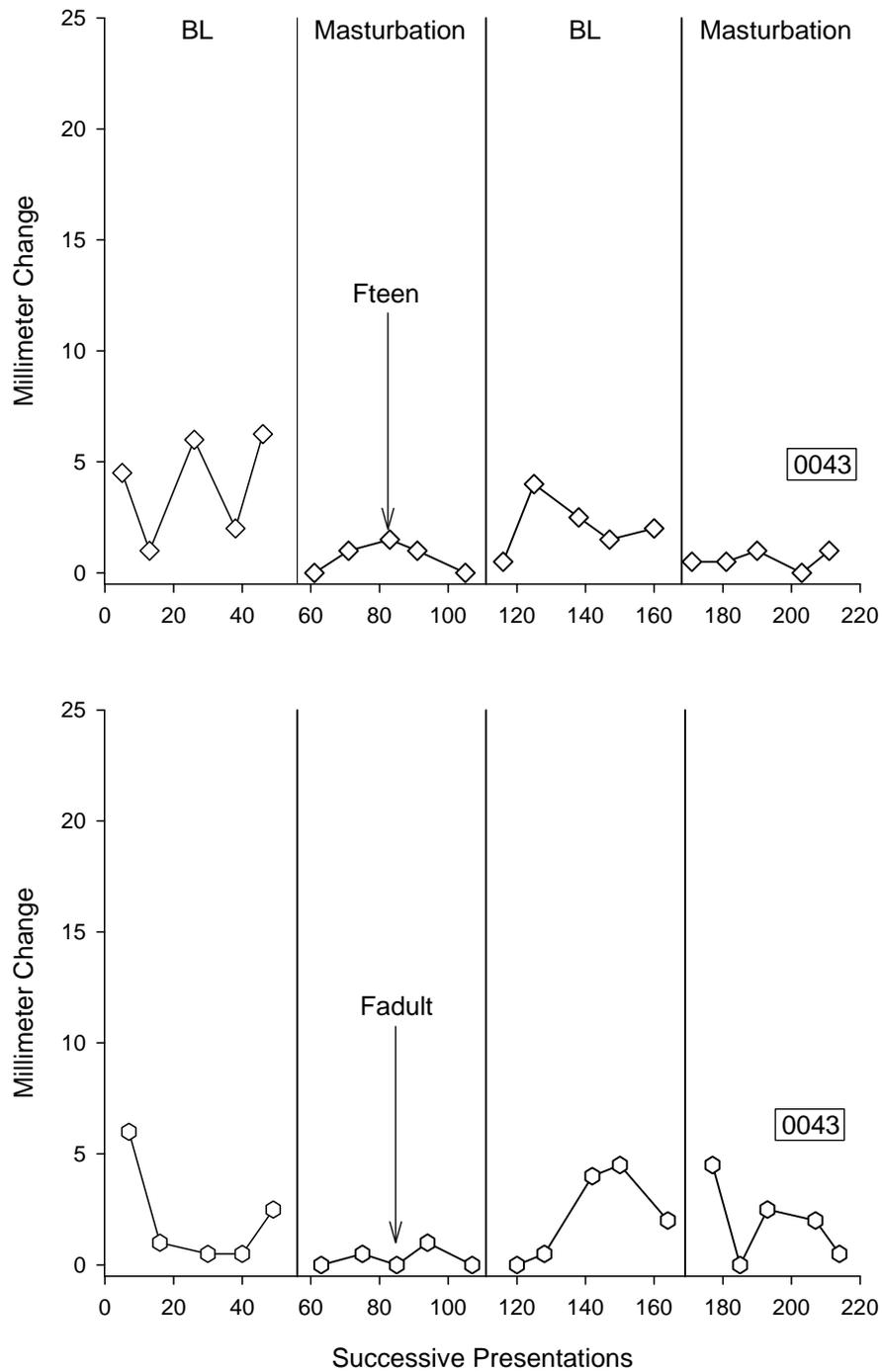


Figure 4-2. Pre-session masturbation results for participant 0043 to the female teen stimulus (Upper Panel), and the female adult stimulus (Lower Panel).

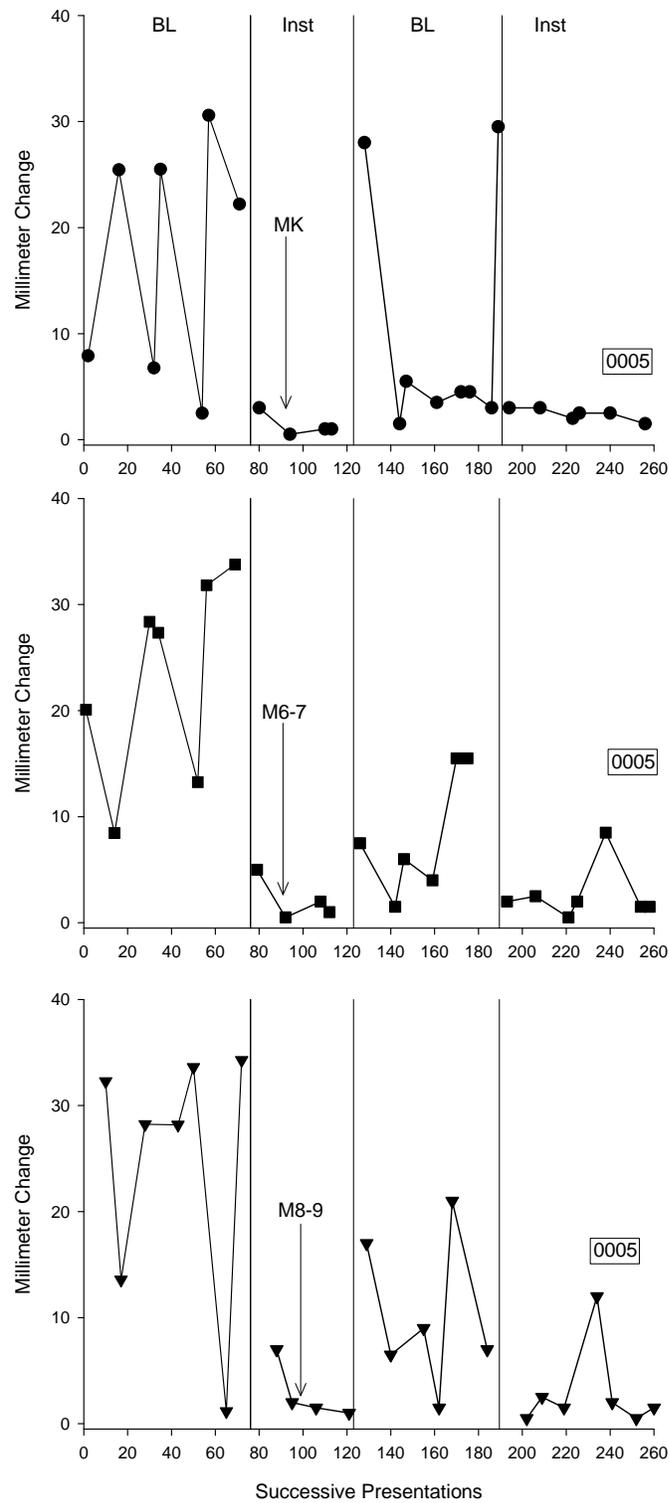


Figure 4-3. Suppression evaluation results for participant 0005 to the male kindergarten stimulus (Upper Panel), the male 6-7 stimulus (Middle Panel), and the male 8-9 stimulus (Lower Panel).

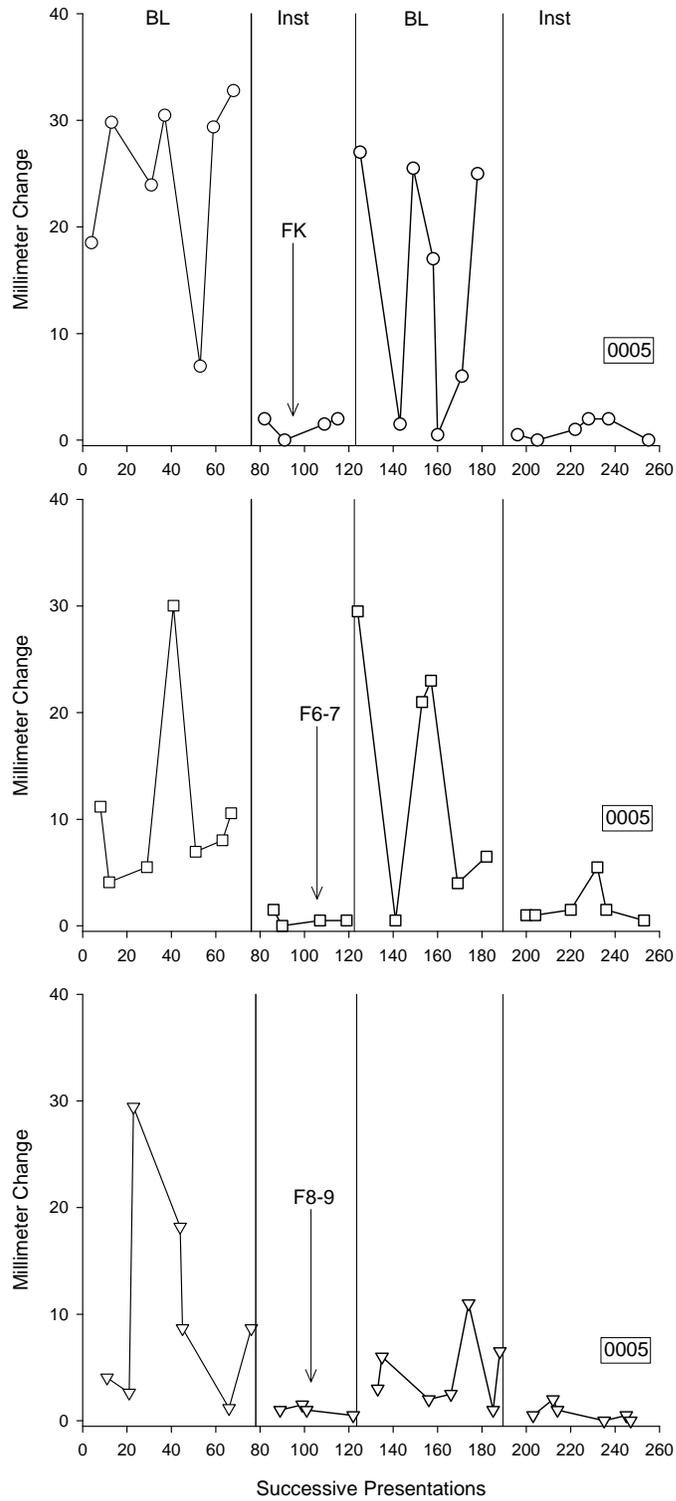


Figure 4-4. Suppression evaluation results for participant 0005 to the female kindergarten stimulus (Upper Panel), the female 6-7 stimulus (Middle Panel), and the female 8-9 stimulus (Lower Panel).

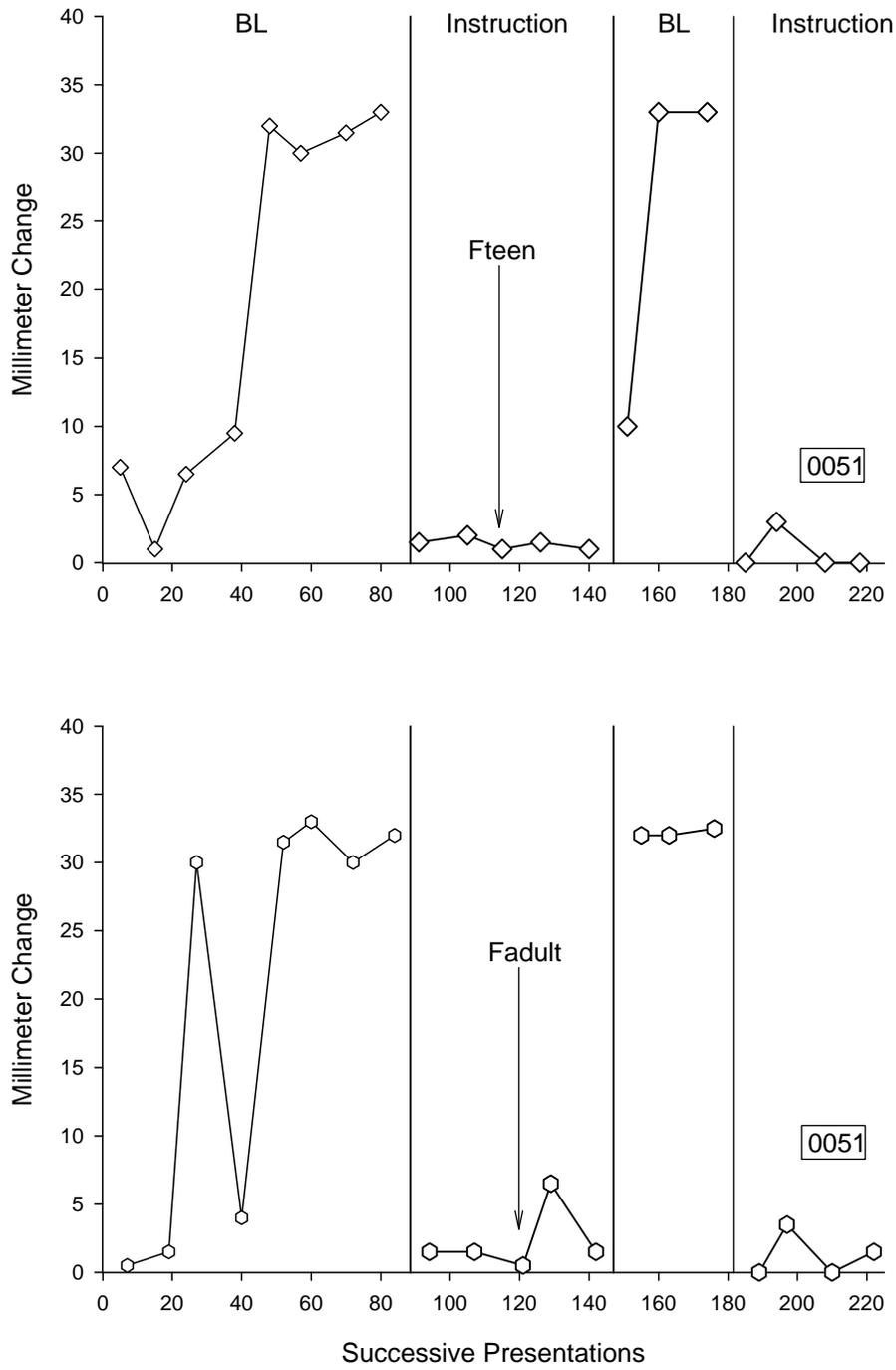


Figure 4-5. Suppression evaluation results for participant 0051 to the female teen stimulus (Upper Panel), and the female adult stimulus (Lower Panel).

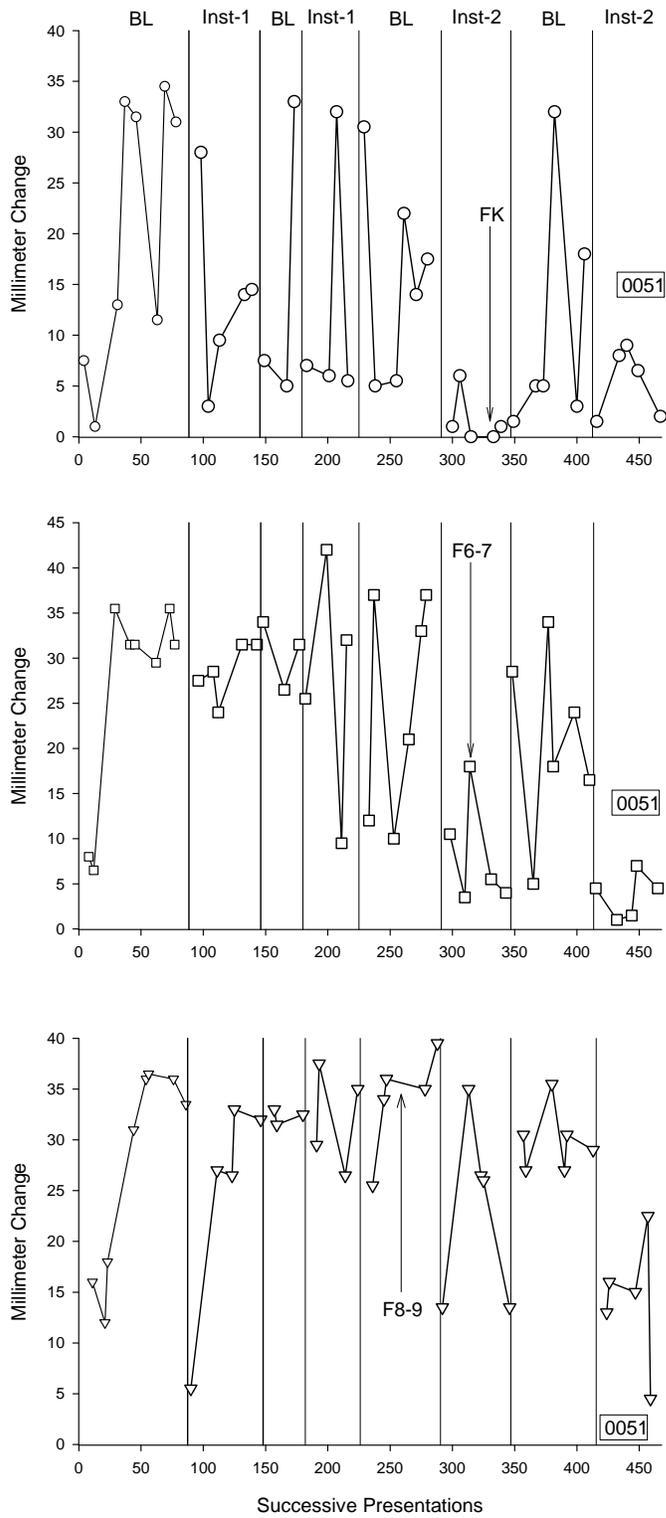


Figure 4-6. Suppression evaluation results for participant 0051 to the female kindergarten stimulus (Upper Panel), the female 6-7 stimulus (Middle Panel), and the female 8-9 stimulus (Lower Panel).

## CHAPTER 5 STUDY 4

### **Introduction**

Although the measurement of arousal outside of clinical settings has potentially important implications, only one study using a portable plethysmograph has been published (i.e., Rea et al., 1998). The ability to conduct arousal assessments in naturalistic environments would help to provide a more thorough assessment of an individual's arousal sensitivity given that some community settings would better approximate the conditions under which they have committed offenses or could commit future offenses. Aside from the utility as an assessment tool, naturalistic assessments would be essential to evaluate generalization and maintenance of treatments. As discussed earlier, any procedures that are found to decrease deviant arousal in a clinical setting would need to be evaluated outside of a clinical setting in order for the intervention to have any practical utility.

Rea et al. (1998) evaluated arousal in five adult males with DD. In addition to being the first investigation of arousal in a natural environment, this also appears to be the first published study involving DD sexual offenders using repeated measures of arousal. The investigation consisted of 2 studies to evaluate the portable plethysmograph developed by the authors. Study one involved determining the extent to which the device captured arousal levels under conditions when the participant was fully clothed. In clinical arousal assessments, the participants do not wear pants or underwear which would not be possible to replicate in a community setting. In order for a portable plethysmograph to be useful, it would have to perform effectively while an individual was wearing pants and underwear. The authors evaluated the effects of pants and underwear using a multi-element design in which pants-on and pants-off conditions were

alternated across sessions. The results of study one showed similar levels of arousal in the two conditions.

The second study involved (a) measuring arousal in three different natural environment settings and (b) investigating the effects of the presence and proximity of staff. The assessment settings consisted of either a location where people were not likely to be present (e.g., a vacant parking lot), an area where adults would primarily be located (e.g., a college campus) and an area where children were likely to be present (e.g., a playground, pool, and a school). For almost all of the assessments, the participants sat in a parked car approximately 30-100 feet away from the individuals in the assessment settings. The assessments involved a 5-min recording session in all three settings and 1-4 sessions were conducted per day. Another variable was that the data collector and experimenters were either positioned 3-5 feet away from the participant or approximately 50-80 feet away. Results of this second study showed that the arousal levels obtained in the natural environments closely matched arousal levels obtained in the clinic when the participant had been presented with pictures of individuals of the same gender and approximate age encountered in the natural setting. Furthermore, the highest arousal levels corresponded to individuals with similar characteristics as the offender's victims. Results also showed that the majority of the participants showed higher levels of arousal when the staff were positioned at a greater distance.

Several limitations of Rea et al (1998) should be addressed. First, the assessment sessions were only 5 min. Typical clinical assessments are much longer and it is likely that more information could be obtained with longer naturalistic assessments. Second, the data collectors only recorded the presence or absence of the target population at each assessment location (e.g., male and female adults and children). No attempt was made to match arousal levels during

particular times with the presence of particular individuals. In fact, it is not clear how the investigators discriminated between what an individual was becoming aroused by and how it was determined that they were being aroused by the same stimuli as during the clinical assessments.

#### **Purpose of Study 4**

The purpose of the present technical study was to develop a new portable plethysmograph, using current technology, so that arousal could be evaluated outside of clinical settings, in real time, and under naturalistic conditions. Furthermore, the present study was designed to attempt to address some of the limitations noted with the Rea et al. (1998) study such as the duration of the sessions, as well as attempting to better match arousal to specific individuals present in the assessment environments. The evaluation consisted of four components and should be considered primarily a technical study in that it involved the development of a new device and the majority of the studies were designed to test how it functioned under a series of conditions. Study 4a consisted of comparing arousal outcomes obtained with the new portable plethysmograph with those obtained with the clinical equipment. Study 4b involved a pants-on and pants-off comparison as in Rea et al. (1998). Study 4c consisted of measuring arousal outside of the clinical setting but still within the secure facility. Finally, Study 4d involved measuring arousal levels in community settings.

#### **Study 4a**

#### **Method**

#### **Participants**

Two individuals from the same state residential treatment facility for developmentally disabled offenders were included in the current study. Participant 0005 had previously participated in studies 2 and 3.

## **Portable Plethysmograph**

The portable plethysmograph was designed with the primary purpose of being compact so that it could be discretely carried in either a participant's pocket or a waist pouch. Furthermore, it was designed to be used with the same type of gauge used in the clinical assessments. The dimensions of the device were 5 in. long by 3 in. wide and 1.5 in. thick. It contained a liquid crystal display (LCD) on the front which continually showed the time of day, the date, and the current penile circumference meter in mm. The penile strain gauge was connected via two input plugs on the side of the device. The software for the unit allowed for gauge size selection and calibration procedures as with the clinical equipment. During a session, the device collected penile circumference readings every second and saved the data to a removable memory card inside of the device.

## **Procedure**

Standard arousal assessments were conducted utilizing the previously described procedures and stimuli. These arousal assessment outcomes served as the comparison for the arousal assessments involving the portable plethysmograph. For participant 0005 previous baseline data (shown in figure 3-3) served as the comparison. Arousal assessments were then conducted using the portable plethysmograph device following the same general procedures. For these assessments, arousal was monitored through the LCD display on the portable unit.

## **Results and Discussion**

The results obtained with the portable plethysmograph were analyzed in the same way as with the clinical equipment. Figure 5-1 shows the results for participant 0049. The results obtained with the clinical equipment are shown in the top panel and those obtained with the portable plethysmograph are shown in the bottom panel. In both cases, arousal levels were differentially higher to the female 8-9 stimulus. With the clinical equipment (upper panel), high

levels of arousal were also obtained to the female adult stimulus, however, this only occurred during one session. Fewer sessions were conducted with the portable plethysmograph given the fact that differentiated outcomes were obtained earlier than with the clinical equipment.

Figure 5-2 shows the arousal assessment outcomes for participant 0005 using the clinical equipment (top panels) and the portable plethysmograph (lower panels). In general, comparable levels of arousal were obtained to the male stimuli (left panels) across the clinical equipment and the portable plethysmograph. In some cases, arousal levels to particular male stimulus categories were lower with the portable plethysmograph, but the same general undifferentiated deviant arousal pattern was obtained. Similar outcomes were also obtained with the female stimuli (right panels) across both types of equipment, although arousal patterns to the female kindergarten stimulus were lower during the portable plethysmograph assessments than with the clinical equipment. Overall, however, both of the assessments produced undifferentiated deviant arousal patterns.

In general, the arousal outcomes obtained with the portable plethysmograph were similar to those obtained with the clinical equipment for both participants. For participant 0005, even though arousal levels to some of the age categories during the portable plethysmograph assessments were sometimes slightly lower or higher than those obtained with the clinical equipment, the overall patterns of arousal were the same. The outcomes obtained with both participants successfully demonstrated that the portable plethysmograph was a viable method for measuring arousal under controlled clinical conditions. Given that the portable plethysmograph was designed to measure arousal outside of clinical conditions, it was necessary to test its capability in measuring arousal while the participant was fully clothed. Therefore the purpose of study 4b was to measure arousal using the portable plethysmograph under clinical conditions

when the participant was not wearing pants and underwear (as in a typical assessment) compared to sessions where he would be wearing pants and underwear.

## **Study 4b**

### **Method**

#### **Participants**

One individual from the same state residential treatment facility for developmentally disabled offenders was included in the current study. Participant 0005 had previously participated in studies 2, 3, and 4a.

#### **Procedure**

**Baseline (Pants-off).** Arousal assessments were conducted with the portable plethysmograph following the standard protocol reported in the previous studies. The assessment outcomes for participant 0005, shown in the bottom panel of figure 5-2, served as the baseline data for the first phase of this evaluation.

**Pants-on phase.** During these sessions, the participant was instructed to remove his pants and underwear and attach the gauge as in previous sessions. After attaching the gauge, the participant was then instructed to carefully put on his underwear and pants so that the gauge wire would exit above the waist of his pants. After checking the reading on the portable plethysmograph to ensure the gauge was still placed correctly, the session was conducted following the previously mentioned protocol.

### **Results and Discussion**

Figure 5-3 shows the results for participant 0005. Overall, the levels of arousal across the pants-on and pants-off conditions were similar, but some differences were evident. Arousal levels to all of the male stimuli as well as to the female kindergarten stimuli (upper panel) were generally more consistent across the phases, with the exception of the last phase of the study

where arousal levels to both the male and female kindergarten stimuli were slightly lower overall. Arousal levels to the female 6-7 (middle panel) and female 8-9 stimuli (lower panel) were lower following the initial baseline phase, but levels were generally consistent across the pants-off and pants-on phases. As with the kindergarten stimuli, the lowest levels of arousal for the female 6-7 and female 8-9 stimuli also occurred during the final phase of the study. In all cases, however, differentiated levels of arousal occurred during the pants-on phase thereby demonstrating the capability of the portable plethysmograph to measure arousal when the participant is fully clothed.

It is possible that the lower levels of arousal to some of the stimuli shown in the last phase of the study were a result of habituation. However, with the exception of the arousal levels to the male kindergarten stimuli in the final phase, arousal levels to the male stimuli were generally consistent across phases. It could be the case that the participant only habituated to the female stimuli, even though the numbers of exposures to the male and female stimuli were kept constant. Habituation could also potentially explain the overall lower levels of arousal shown to the female 6-7 stimuli and the low levels of arousal shown to the female 8-9 stimuli following the first baseline phase. The low levels of arousal in this study also could have been the result of suppression, although it is not clear why the participant would suppress arousal to some stimuli and not others. Overall, it is important to point out that although there was some variation in arousal levels, it did not seem to be a function of whether or not the participant was wearing pants. Furthermore, with the exception of the female 8-9 stimulus, comparable levels of arousal were obtained across the pants-off and pants-on phases.

The results of the current study demonstrated that the portable plethysmograph could be used while the participant is fully clothed. The purpose of study 4c was to conduct a controlled

test outside of clinical settings, but while still on the residential unit, before conducting assessments in the community. Having an intervening step to assess arousal outside of the clinic before introducing a number of uncontrolled variables was considered a potentially better next test of the equipment.

## **Study 4c**

### **Method**

#### **Participants**

One individual from the same state residential treatment facility for developmentally disabled offenders was included in the current study. Participant 0005 had previously participated in studies 2, 3, 4a, and 4b.

#### **Setting**

Sessions were conducted in a conference room located directly outside of the clinical setting. During the sessions, signs were placed at both doorways in order to prevent any other people from entering the general area. The conference room contained a table with several chairs, a television, and a VCR which was used to present the stimuli.

#### **Procedure**

Given that sessions outside of clinical settings could only be conducted while the participant was wearing pants, these sessions were conducted following the final clinic pants-on session, and the results from study 4b served as the comparison for the outcomes obtained in the current study. The participant entered the normal session room and was instructed to attach the gauge and then put his underwear and pants back on as described in the other pants-on sessions. After attaching the gauge, the participant sat at the end of the conference table facing the television screen. The behavior analyst monitored the session from approximately 5 ft away and started and stopped the video clips via remote control.

## **Results and Discussion**

The results are shown in figure 5-4. Overall levels of arousal tended to be lower during these sessions than in the previous pants-on and pants-off sessions, with the exception of the first exposure to the female 6-7 stimulus (middle panel). However, the general patterns of arousal are similar to those obtained in study 4b. With the exception of one exposure to both the female kindergarten stimulus (upper panel) and the female 6-7 stimulus (middle panel), the levels of arousal were higher to the male stimuli.

The low levels of arousal obtained in the current study may have resulted from several factors. As with study 4b, habituation to the stimuli or suppression could have been responsible for the overall low levels of arousal. In addition, the low levels of arousal could have been a function of being in a novel environment. It is possible that higher levels of arousal may have been obtained with additional sessions, given the increasing trends evident with the male kindergarten and male 8-9 stimuli; however, given that the conference area is normally a fairly high traffic area (i.e., staff and residents coming in and out), it was only possible to run three sessions. Closing off the conference area was disruptive to ongoing activities of the other staff members and it was not possible to run additional sessions. Taken as a whole, the results indicated that differential arousal was measured outside of the clinical setting. The purpose of study 4d was to measure arousal in community settings.

### **Study 4d**

#### **Method**

##### **Participants**

Three individuals from the same state residential treatment facility for developmentally disabled offenders were included in the current study. Participant 0005 had previously

participated in studies 2, 3, and 4a-4c. Participant 0051 had previously participated in study 3, and participant 0043 had previously participated in studies 2 and 3.

### **Settings**

The community assessments occurred in a shopping mall or on a college campus. The shopping mall was selected because it was likely that children would be present, and the college campus was selected because it was unlikely that children would be present. All of the assessments occurred while seated at the food court of either the shopping mall or the college campus.

### **Video Recording Equipment**

In order to obtain more precise information during community outings, the participants wore video recording equipment. The recording equipment consisted of a small camera hidden inside of a baseball cap connected to a wireless transmitter that sent the images to a full-sized video camera which then recorded the images. The transmitter was worn by the participant inside of a waist pouch and the video camera was carried by the researcher inside of a backpack. Additionally, the recording equipment was linked to the portable plethysmograph which allowed for the gauge readings to be projected onto the recorded images during a session. During playback of the session, the gauge readings were shown in the upper left corner of the screen which allowed for an additional way to determine individuals in the community that may have been responsible for increases in arousal.

### **Data Collection**

During the assessments, the portable plethysmograph continuously recorded changes in penile circumference. In addition, the behavior analyst collected data on the presence or absence of individuals in the immediate environment. Data were collected using a handheld computer with software that allowed for the recording of various age categories and the duration of time

during which they were present. The behavior analyst also noted whether or not the participant appeared to be staring at any particular individuals in the environment. Following each session, the behavior analyst reviewed the video collected during the assessments to compare the information collected during the assessment.

## **Procedure**

As part of their treatment plans, the residents of the current facility take regular trips into the community to purchase items, eat at restaurants, attend sporting events, etc. All of the arousal assessments were scheduled to coincide with a participant's normally scheduled trip into the community. In some cases, an individual may have been scheduled for multiple trips within a single week, but the assessments occurred only once per week. In addition to the behavior analyst, another staff member was always present to assist with the assessments. If the participant engaged in any potentially dangerous behavior during an assessment, such as attempting to approach a child, the session would have been terminated immediately, but this never occurred.

Before leaving the facility, the participant attached the gauge and was instructed to put his underwear and pants back on. The participant was then instructed to put on the hat that contained the hidden video camera and then the portable device was connected to the video equipment and placed inside of a waist pouch. Only a small black wire coming from the back of the hat to the top of the shirt collar was visible when all of the equipment was connected. Before leaving for the assessment, the behavior analyst checked the equipment to ensure that everything was recording properly. After arriving at the location, the behavior analyst ensured that the portable plethysmograph, the video equipment, and the handheld data collection computers were all started at the same time so that the data from the handheld device and the portable equipment could be matched. Upon entering the location, the participant was instructed to walk in front of

the behavior analyst and the staff member until reaching the food court area. Once at the food court, the participant was instructed to sit in a particular location and the other two individuals sat approximately 2-ft away. The participant was instructed that he did not have to avoid looking at children and he could look wherever he preferred. After approximately one hour, the participant ate lunch, and then all of the individuals exited the location. Interactions during the assessments were kept to a minimal level.

### **Data Analysis**

After each session, the data recorded by the portable plethysmograph were plotted in terms of real-time changes in penile circumference across time. Using the data collected during the session, as well as any information that could be ascertained from the video equipment, the behavior analyst attempted to identify the presence and absence of individuals at different points throughout the session. If the data showed any peaks in the level of arousal, the behavior analyst more specifically attempted to determine target individuals in the environment that may have been associated with the arousal. In some cases, the data contained thin vertical lines that extended above the data path that did not represent penile circumference readings and were not included in any calculations (see figure 5-5 for an example)

### **Results and Discussion**

The results for all of the participants are plotted in terms of real-time changes in penile circumference across the entire session plotted in real-time. The scale for the Y-axis varied according to the overall levels of arousal observed in each session. Presence of target individuals and environmental events are labeled and the horizontal lines under the data represent the duration that an individual or individuals were present or the duration of the environmental event (e.g., lunch). Any age ranges given for individuals in the environment should be considered to be an approximation given that it was not possible to precisely identify their ages. Furthermore,

the presence or absence of individuals during periods of walking was not collected given the variability shown in the data as a result of the equipment moving while walking.

Figure 5-5 shows the results for participant 0005. These data were collected during his first session at the shopping mall. Overall, the highest levels of arousal occurred in the presence of three male children between the ages of 5 and 8 years old. Other peaks in arousal occurred in the presence of the same young male children as well as 2 females of approximately kindergarten age. Only one session is shown for this participant due to technical difficulties that occurred during other sessions.

The results for participant 0051 are shown in figure 5-6. The two sessions conducted at the shopping mall are shown in the upper and middle panels. During the first session (upper panel), high levels of arousal occurred in the presence of both kindergarten and pre-kindergarten aged females. Another peak in arousal was shown to a female between the ages of 6-8, but the level of arousal was lower than to the kindergarten and pre-kindergarten aged females. During the second session at the shopping mall (middle panel), high levels of arousal were seen to females ranging in age from 6 to 9 years old. The first peak in arousal was shown to a female between the ages of 6 and 7 and the second peak occurred in the presence of 2 females; one between the ages of 6 and 7 and another between the ages of 8 and 9. Even given the information obtained from the hidden video camera, it was not possible to determine if one of the particular females was more associated with the increases in arousal.

The bottom panel of figure 5-6 shows the results obtained from the first session conducted on the college campus setting. Although the likelihood of children being present in this location was generally low, one male child approximately 6-7 years of age was present during a portion of the session. As evident in the results, the only high levels of arousal (other

than the "noise" created by walking) occurred in the presence of the male child. Male and female adults were present during the entire session, but no increases in arousal were evident in their presence.

Figure 5-7 shows the results for participant 0043. These data were collected from this participant's first session conducted at the shopping mall. Despite being in the presence of many male and female adults, teens, and children, no high levels of arousal were evident (note that the scale only shows a range of 10 mm).

Overall, 2 out of 3 participants showed arousal in community settings, and the levels of arousal were comparable to those previously obtained in clinical settings for both participants. In addition, the individuals thought to be responsible for the arousal were consistent with patterns of arousal obtained in clinical settings. For example, participant 0005 showed high levels of arousal to young males in clinical settings and showed high levels of arousal to the same age group in the community. Furthermore, this participant showed some arousal to females of kindergarten age while in the community, although not to the same extent as the males. This pattern is consistent with the levels of arousal that the participant had shown toward the conclusion of the clinical and controlled portable plethysmograph sessions.

Similar patterns of arousal were obtained for participant 0051. All of the high levels of arousal observed in the community were in the presence of young female children. In the clinical setting, high levels of arousal occurred to the young female children, but also to the female teen and adult stimuli. It is interesting to note that none of the peaks in arousal shown in the community were associated with older female age categories. It is possible that such findings could be taken as an additional measure of the strength of particular sexual preferences, especially when combined with the information obtained from the suppression evaluation in

study 4b, which showed that extra instructions were not required to obtain suppression to the older female age categories.

The results for participant 0043 are more difficult to interpret. This participant did not show any arousal in the community even when in the presence of target individuals similar in age to those in the clinical assessment videos. Several different factors could have been responsible for this result. It is possible that he was suppressing his arousal, he did not find any of the individuals encountered in the community sexually arousing, or even that he had masturbated before the assessment. It is also possible that he was unable to become aroused given that the situation was novel (i.e., walking around the mall while wearing a penile plethysmograph). Future sessions may yield different results which are more compatible with clinical evaluations. Additional sessions are needed to better determine how this participant may respond in community settings.

Several limitations of the current study should be discussed. One unexpected challenge involved the fact that the data were extremely variable while the participant was walking. The sessions were initially designed to consist of having the participant walk around the location, but the initial results proved unusable given the variability. Essentially, it was not possible to separate arousal from peaks in the data produced by walking. The sessions were then redesigned to have the participant seated.

Even after the procedures were changed, one of the most difficult aspects of conducting the community sessions was attempting to determine the individuals responsible for the arousal. An additional unforeseen complication involved the images recorded from the video camera in the hat worn by the participant. In some cases the angle of the hat camera was too high to be able to see the individuals who were in the environment, thereby making it difficult to accurately

identify who the participant was watching. Furthermore, the ubiquitous presence of male and female adults at the mall only added to this complication. Therefore, although every effort was made to accurately identify target individuals, it is possible that the arousal was associated with other individuals. Regardless of the difficulties, however, the current procedures represented an attempt to address one of the main limitations noted from the Rea et al. (1998) study in which it was not possible to determine how arousal was matched to individuals in the environment.

Another limitation stems from the constraints of conducting assessments in community settings. Given the nature of the assessments, it was not possible to control for the presence or absence of certain individuals in the community settings. Therefore, it may not be possible to expose an individual to all relevant stimuli throughout the course of an assessment. In addition, this lack of control affects the conclusions that can be drawn from the data. Even under conditions where the individuals associated with the arousal can be identified, the data are still correlational. The closest approximation to controlling the individuals present in the environment involved conducting an assessment on a college campus. The purpose was to compare responding when children would not be present (although one child did happen to be present in this case).

Taken as a whole, this series of studies showed that the portable plethysmograph is a viable assessment tool and is capable of measuring arousal of DD sex offenders in community settings. Although more data are needed to fully explore the potential utility of the portable plethysmograph, the present data can be considered a successful demonstration of its use. Future studies are needed to extend and improve upon the issues and limitations discussed previously.

Additional community assessments need to be conducted in a variety of different locations. These added sessions will not only serve as further tests of the equipment but will also

allow for the refinement of data collection techniques. Future studies should also explore alternative video camera options. Given that the angle of the hat camera was problematic in many cases, other cameras could be utilized that may more accurately capture what the participant is actually looking at. For example, video cameras placed inside of sunglasses are currently being manufactured and may be a viable alternative to the hat camera.

One possible future use of the portable plethysmograph is to evaluate the generalization and maintenance of treatments. For example, arousal in community settings could be measured after the individual had masturbated or when instructed to suppress his arousal. Another area for future investigation involves collecting data using non-sexual offenders as a control comparison. It might be important to observe whether or not typically developing males who are not sex offenders show arousal responses in community settings. If so, the ages and types of individuals could be compared and analyzed. If they do not show arousal, it could raise questions about why the sex offenders show arousal. For example, it may be a function of deprivation level due to the fact that the participants are taught to avoid looking at children in all other contexts, or perhaps offenders are generally more disposed to arousal.

Perhaps the most important future direction involves determining how the information gained from the portable plethysmograph relates to the probability of committing a future offense. As stated previously, arousal to deviant stimuli is one of the best predictors of re-offense (e.g., Hanson & Morton-Bourgon, 2004), but no such information exists for arousal in community settings at this point in time. It is possible that obtaining arousal measures outside of the clinical setting may function as a better predictor of re-offense given that some community settings would more closely approximate the conditions under which they have committed offenses or would commit future offenses. It is also possible that the information obtained from

community assessments is similar to or even inferior to the information obtained from clinical assessments.

Even though the potential of community assessments using a portable plethysmograph is promising, the nature of the assessments themselves raises some important ethical questions and may actually appear to be ethically questionable. For example, it could be argued that bringing sex offenders to community settings is unsafe and should not be done under any circumstances. Whereas this point may have some validity, it is important to point out several other issues. To begin with, the individuals who participated in study 4d are frequently taken to a variety of community settings as part of their regularly scheduled activities. These individuals are going to be in community settings regardless of the assessments, therefore, the assessments were designed to capitalize on this fact, and hopefully use the opportunities as a way of providing useful information. Even if these individuals were taken to community settings solely for the purposes of assessment, however, a convincing argument for continuing these assessments could be made. For example, it could be argued that these individuals may eventually live in community settings. In order to attempt to keep the public safe, information needs to be obtained on how sex offenders react while in the community. Furthermore, this information is being gathered under safe conditions where the individual would not have an opportunity to place anyone in the community in danger. Essentially, the choice becomes a matter of allowing clinicians to gather potentially important information that can be used to gauge one aspect of an individual's risk to the community, or deciding that the potential danger of obtaining such information is too great.

The previous 4 studies served to highlight the use of a behavioral approach to assess the arousal-based features of sexual offending. As stated previously, however, arousal-based responses may only address one component of sexual offending and studies are needed that

attempt to assess the operant features of sexual offending. Although applying behavior analytic methodology to arousal based responding can be challenging (as highlighted in the previous studies), applying such a methodology to operant based features of offending could be even more challenging given the difficulties in measurement. The previous studies utilized a direct measure of arousal through the use of the penile plethysmograph. Direct measures of behavior for operant features of offending, however, are impossible. For example, a sexual offense would never be directly observed without intervention, and under no circumstances would children ever be placed in potential harm for assessment purposes. Therefore, study 5 was designed to evaluate practical ways to assess how DD sex offenders may respond under high-risk conditions.

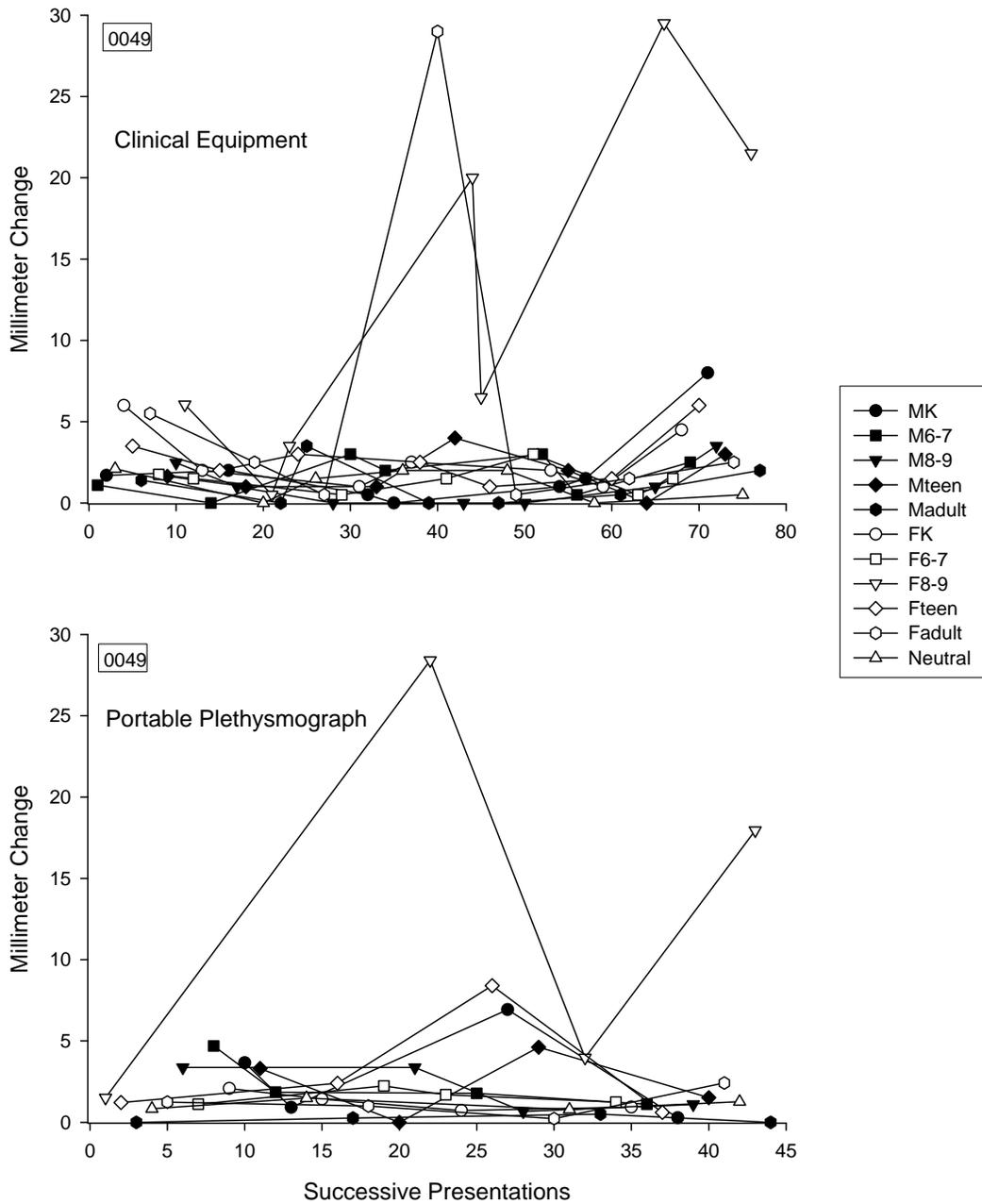


Figure 5-1. Arousal assessment outcomes for participant 0049 obtained with the clinical equipment (Upper Panel) and the Portable Plethysmograph (Lower Panel).

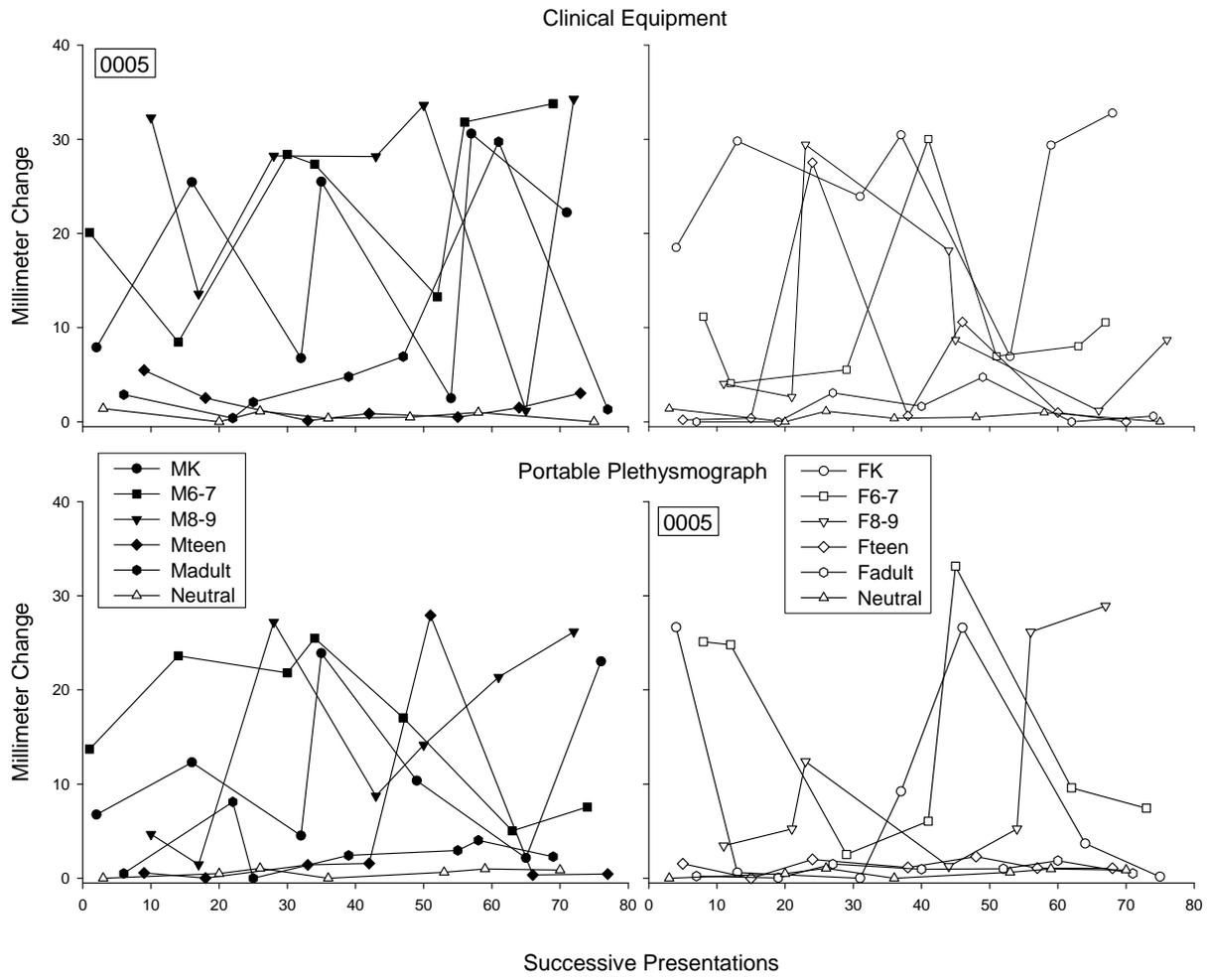


Figure 5-2. Arousal assessment outcomes for participant 0005 obtained with the clinical equipment (Upper Panel) and the Portable Plethysmograph (Lower Panel). The left panels show the outcomes to the male stimuli and the right panels show the outcomes to the female stimuli.

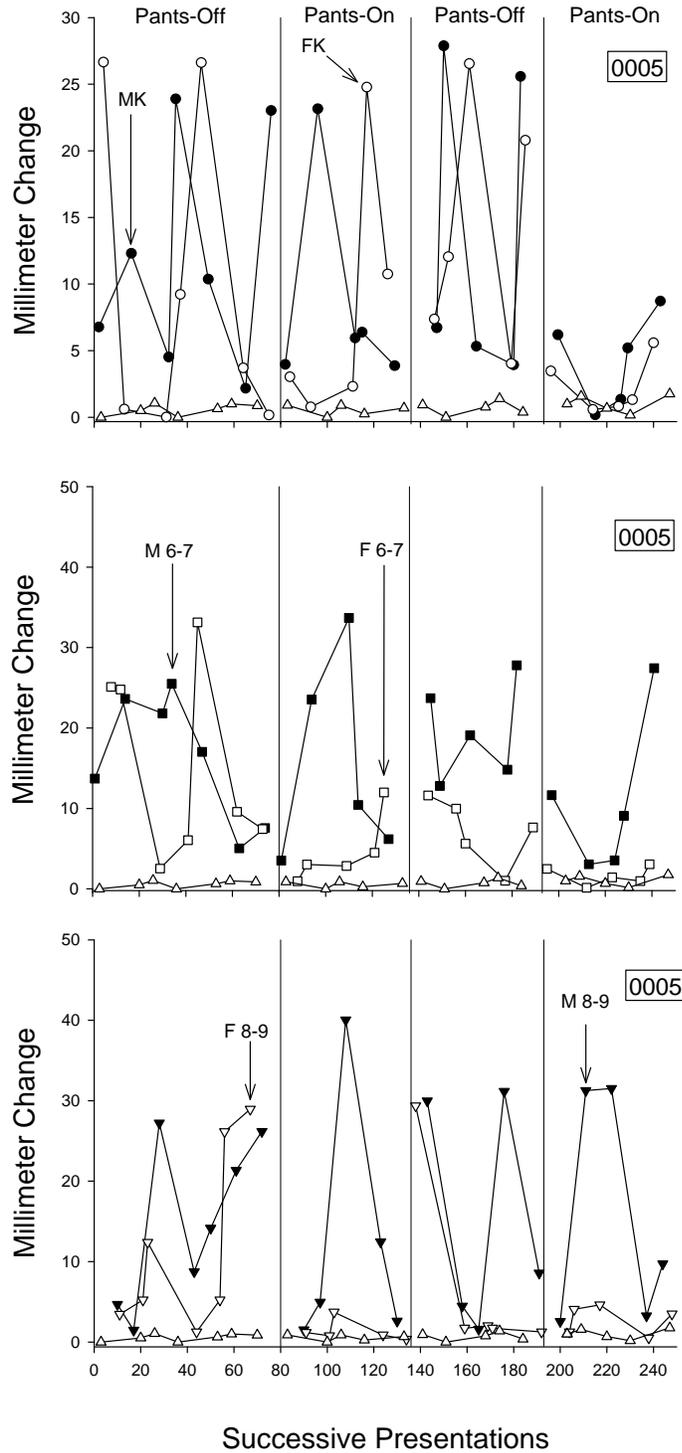


Figure 5-3. Pants-off and pants-on outcomes for participant 0005 to the male and female kindergarten stimuli (Upper Panel), the male and female 6-7 stimuli (Middle Panel), and the male and female 8-9 stimuli (Lower Panel).

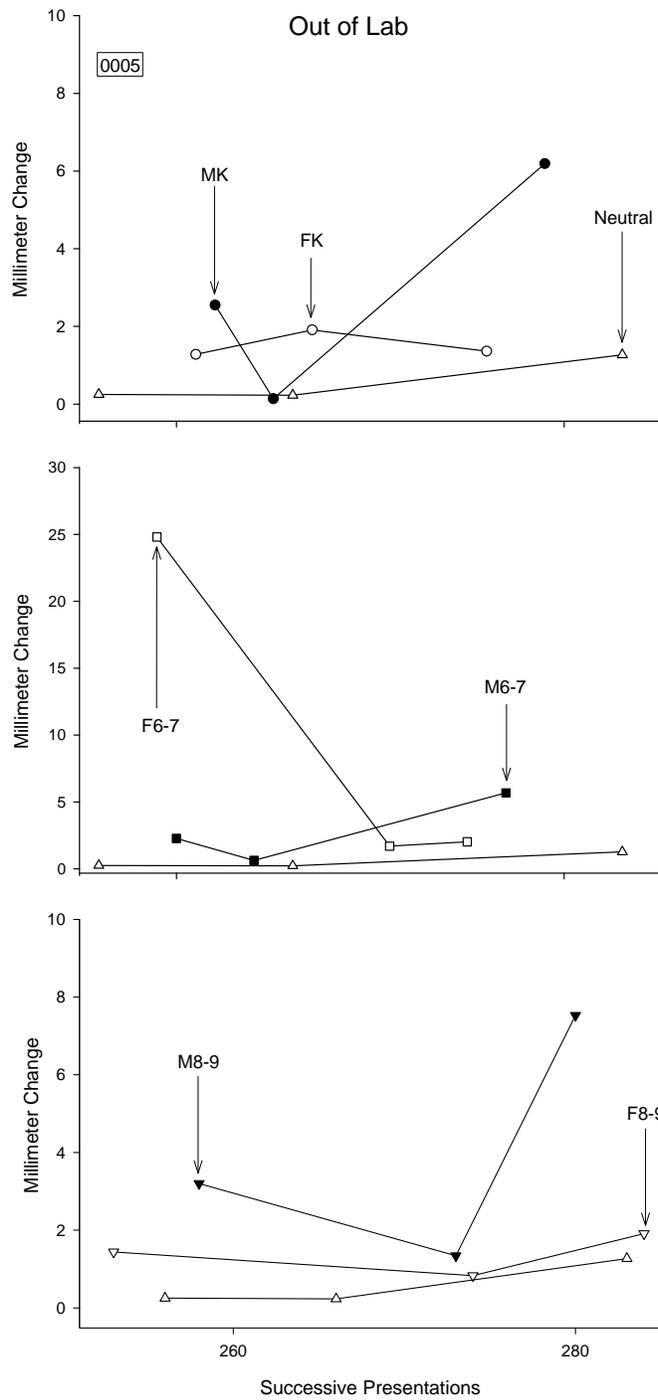


Figure 5-4. Arousal assessment outcomes outside of the clinic for participant 0005 to the male and female kindergarten stimuli (Upper Panel), the male and female 6-7 stimuli (Middle Panel), and the male and female 8-9 stimuli (Lower Panel).

# Shopping Mall - 1

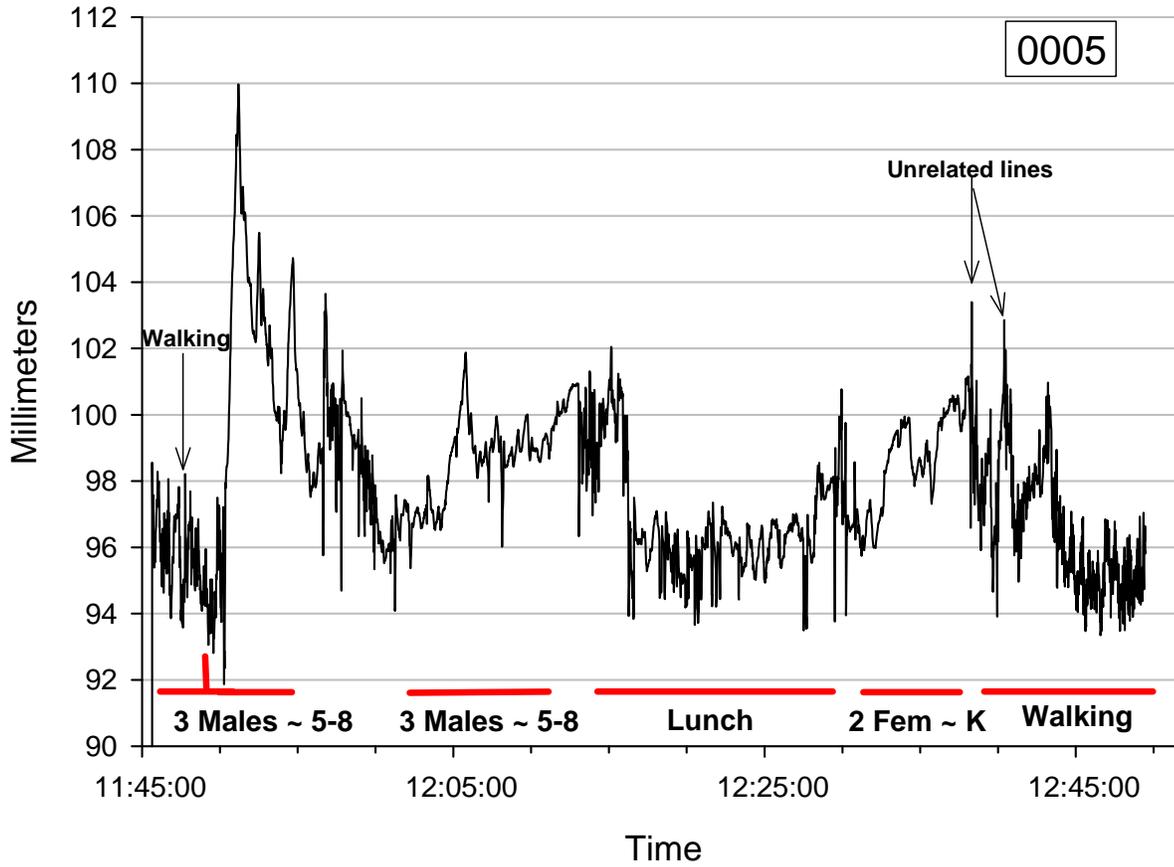


Figure 5-5. Arousal assessment outcomes obtained for participant 0005 during the first session conducted at a shopping mall. Duration of relevant stimuli and events are denoted by the horizontal lines.

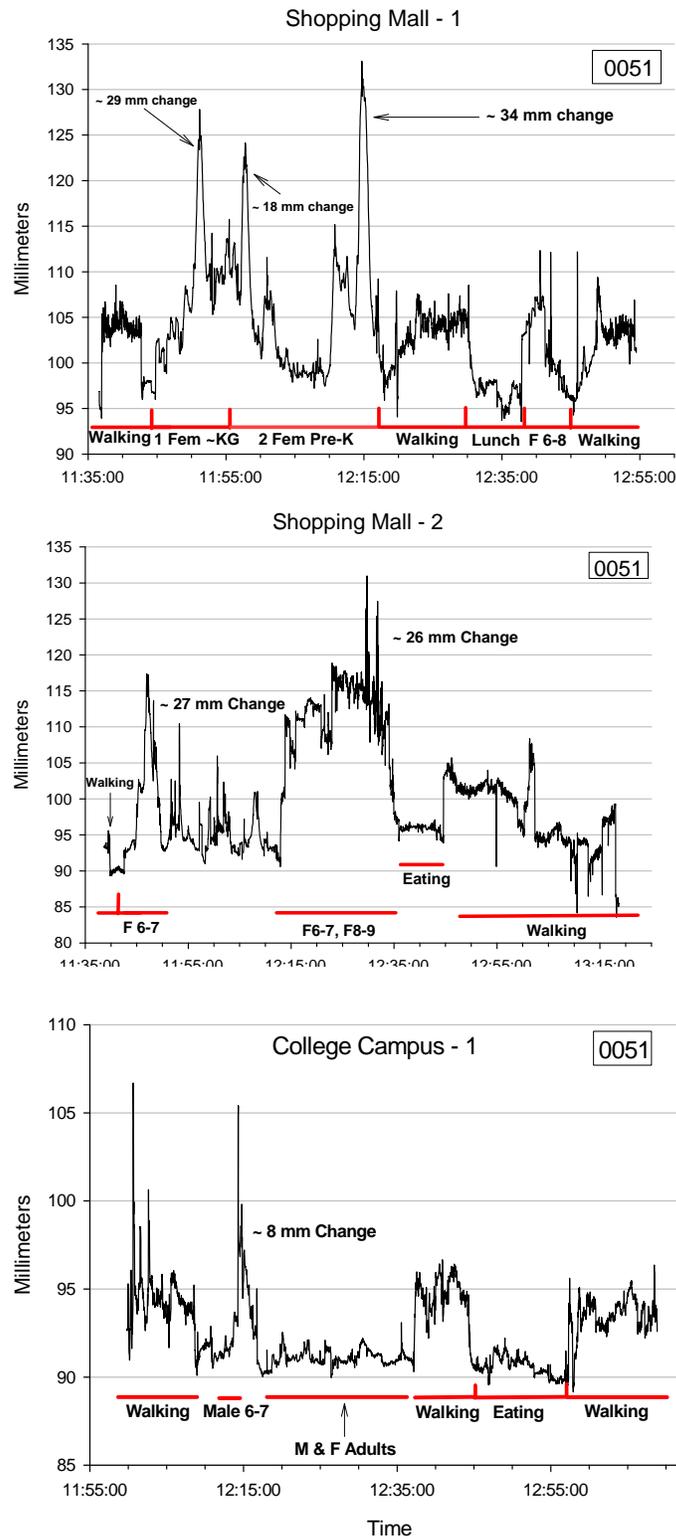


Figure 5-6. Arousal assessment outcomes obtained for participant 0051 during the first session conducted at a shopping mall (Upper Panel), during the second session at a shopping mall (Middle Panel), and during a session at a college campus (Lower Panel). Duration of relevant stimuli and events are denoted by the horizontal lines.

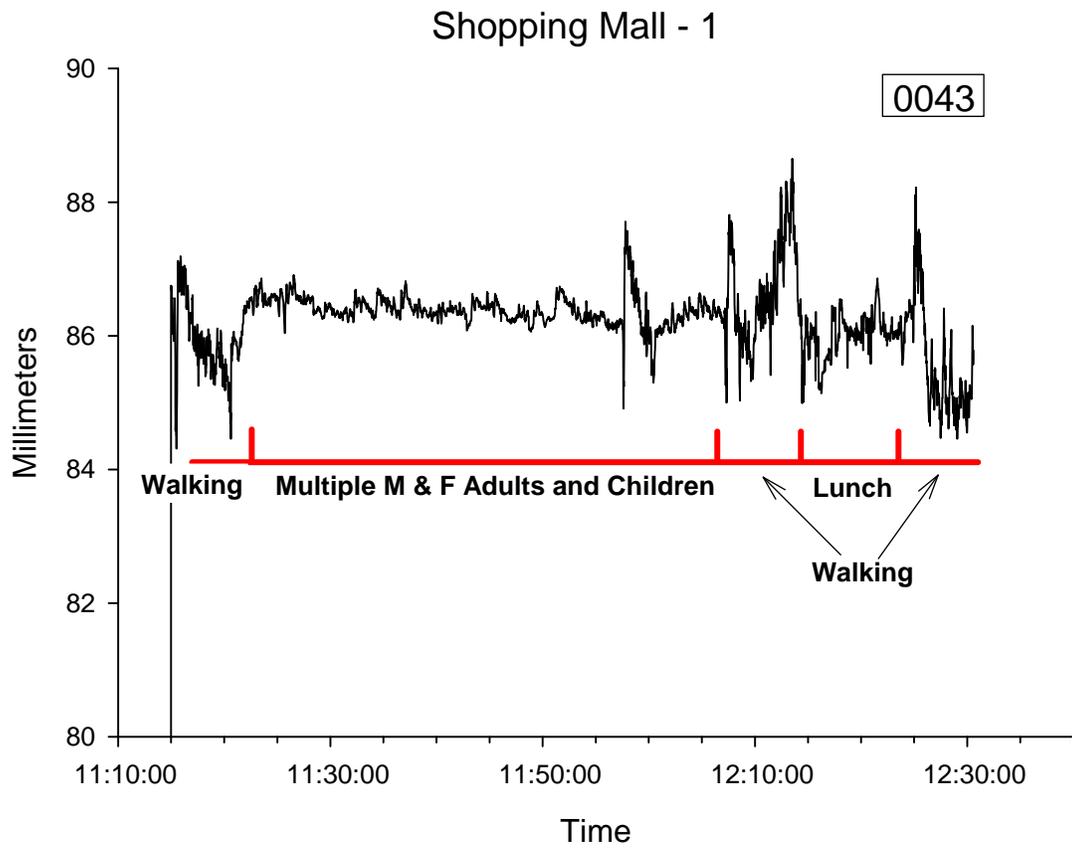


Figure 5-7. Arousal assessment outcomes obtained for participant 0043 during the first session conducted at a shopping mall. Duration of relevant stimuli and events are denoted by the horizontal lines.

## CHAPTER 6 STUDY 5

### **Introduction**

Given that the direct observation of a sexual offense is impossible, it may be possible to measure other responses related to sexual offending without endangering anyone in the community. For example, assessments of high-risk situations could take place under conditions where individuals were led to believe that they were not being observed. These types of assessments, typically called "in situ assessments" have been used previously in behavioral research. The information gained from these assessments is unique in that the situation most closely approximates how these individuals would respond under real-life circumstances.

In an early application of in situ methods, Poche, Brouwer, and Swearingen (1981) used in situ assessments in order to teach children necessary skills to protect them against potential child abductors. The children were taught specific responses to display when confronted with someone attempting to lure them away. In order to assess the effects of their training, the authors used confederates to act as the potential child abductor and recorded their responses when the child was left alone. By investigating what would occur under more natural conditions, the experimenters could be more confident in the results of the training. Simply having the child state the required response or even role play the response under controlled laboratory conditions can only provide a limited demonstration of the robustness of the training. Furthermore, by setting up a situation with a confederate, the child was never put in any danger while being assessed under very realistic conditions.

A more recent study by Himle, Miltenberger, Flessner, and Gatheridge (2004) also used in situ assessments to examine the effects of behavioral skills training. In this case, the researchers were interested in teaching children appropriate responses if they encountered a

firearm. The children were rated on their performance in terms of whether they touched the gun, or left it alone and notified someone that they had found a firearm. After training sessions, the children were left in a room alone with a firearm where they were observed through a hidden video camera. The firearms were non-functional but had been made to appear very realistic. This assessment format allowed the authors to observe how these participants may react under naturalistic conditions. The participant's behavior was assessed under realistic conditions while keeping them safe. Inappropriate responding during these sessions also allowed the experimenters to determine that more training was needed.

Adopting the in situ assessment methodology for sex offenders could be a useful way to measure how an individual might respond if he believed he was alone and in a high-risk situation. One such situation involves being alone in the presence of stimuli considered to be high-risk, such as magazines that contain pictures of children. Although, the effects of having access to or avoiding child related stimuli on arousal or future re-offending have not been systematically investigated, many treatment locations (including the facility discussed in the current dissertation) teach offenders to avoid all child-related stimuli. Whether or not what these offenders are taught actually occurs, however, is the critical question.

### **Purpose of Study 5**

The purpose of the current study was to conduct in-situ assessments to evaluate how DD sex offenders would respond in the presence of child-related material in the form of magazines containing pictures of children. Clients from the current treatment facility were driven to an off-campus location to meet with a behavior analyst who served as a confederate for the current assessments. The clients were observed covertly while in a waiting room containing the high-risk materials, after which they had an opportunity to speak with the confederate behavior analyst (see procedures).

## **Method**

### **Participants**

Three individuals from the same state residential treatment facility for DD offenders were included in the current study. Participant 0005 previously participated in studies 2, 3, and 4a through 4d, and participant 0043 previously participated in studies 2, 3, and 4d.

### **Setting and Materials**

All sessions took place in an office designed to look like a waiting room. It was equipped with a table, a chair, and a desk with an inactive computer and monitor. An additional office in the same building was used as the location for the confederate behavior analyst. The assessment materials consisted of six magazines considered to be appropriate or neutral, and inappropriate or high-risk. The three neutral magazines consisted of those that did not contain a high proportion of pictures of children, such as car magazines, sporting magazines, etc. The high-risk magazines were those contained pictures of children such as parenting magazines, child clothing magazines, etc. The magazines were arranged on the table so that the appropriate and inappropriate magazines were alternated with one another (i.e., an appropriate magazines was placed on the bottom, followed by an inappropriate magazine, etc.) and fanned out so that parts of each magazine could be seen.

### **Video Recording Equipment**

The recording equipment consisted of 2 small wireless video cameras and a transmitter connected to a converter that allowed for a live feed to be displayed and recorded onto a computer in an adjacent room. The cameras were placed inside of computer speakers that had been modified to allow the cameras to fit inside. When the speakers were fully assembled, it was not possible to see any part of the video camera. The speakers were placed on the desk next to the computer, across from where the participant was seated. Before each session the angle of the

video cameras was checked to ensure that any magazines the participant looked at could be identified.

## **Procedure**

Before each participant's first session, they were told that they would periodically have an opportunity to speak with a behavior analyst from the University of Florida. It was described as an opportunity for them to speak with someone about whatever they wanted to discuss. They were also told that this would require leaving the unit and it was their choice as to whether or not they would like to participate. If they agreed to participate, they were told of their appointment time at least 1 to 2 days before the appointment for all remaining sessions.

Each session involved driving a participant to an off-campus location to meet with the confederate behavior analyst. Upon arrival, the staff member and the participant entered through the mock waiting room and the staff member asked the participant to sit down in the chair and wait while he went to check if the behavior analyst was ready for the participant. Also upon arrival, the confederate behavior analyst began recording the video feed on the computer in the observation room. After approximately 30 s, the staff member entered the waiting room and informed the participant that the confederate behavior analyst was running late and would need 15 to 20 min before they could meet. The staff member would then inform the participant that he had to attend to some work in an adjacent room, but that he could come get him if needed. The staff member then shut the door to the waiting room and observed the session from the live feed in the adjacent room. As an added security measure, an additional staff member arrived after the participant and waited outside of the door leading to the exit in case the participant attempted to leave (this never occurred). After approximately 15 or 20 min, the staff member entered the waiting room and told the participant that it was time for his appointment and escorted him back to the confederate behavior analyst's office. The participant was then given an

opportunity to talk with the behavior analyst for about 15 minutes and then was driven back to the treatment facility. While the participant was meeting with the behavior analyst, the extra staff member left the premises and returned to the treatment facility.

Control sessions were conducted in an identical manner except the staff member told the participant that he did not have any work to do and would wait with the participant in the waiting room until the appointment began. Furthermore, interactions during this time were kept minimal and there were no programmed consequences if the participant looked at the high-risk magazines.

### **Data Analysis**

Each of the sessions were analyzed in a number of different ways. Similar to the Poche et al. (1981) and Himle et al. (2004) a rating system was devised to score an individual on how they responded during the session. The 3-point rating system was based on the way in which the participants were taught to respond in situations similar to those arranged in the current study. The participants could earn a score of 3 by avoiding looking at the high-risk magazines and leaving the room to notify the staff member immediately upon encountering the materials. A score of 2 was obtained by avoiding looking at the high-risk materials and notifying the staff member about their presence after the session was completed. A score of 1 was obtained if the participant avoided looking at the high-risk materials but did not notify the staff member about their presence. Finally, the participant earned a score of zero if he looked at the high-risk materials for more than 5 sec. In addition to the rating system, data were also collected on the duration spent looking at both the high-risk and the neutral magazines, and the frequency of stolen pages stolen from any of the magazines.

## Results and Discussion

All of the data were analyzed using a multi-element design. Figure 6-1 shows the results for participant 0005. During the first session, the participant earned a score of 1 (top panel), during which he did not look at the high-risk materials, but did not notify the staff member of their presence. Also during this session, no time was spent looking at the high-risk magazines (2<sup>nd</sup> panel), no pages were stolen (3<sup>rd</sup> panel), and no time was spent viewing the neutral magazines (bottom panel). For the remaining sessions (excluding the control sessions), the participant earned a score of zero (top panel) and spent approximately 20% to 60% of the sessions looking at the high risk materials (2<sup>nd</sup> panel). During these same sessions, the participant also stole one or more pictures from the high-risk magazines (3<sup>rd</sup> panel). The participant did not look at the neutral magazines during any of the remaining sessions (bottom panel). During the control sessions, however, the participant earned a score of 1 (top panel), did not look at the high-risk material (2<sup>nd</sup> panel) and did not attempt to steal any pages from the high-risk magazines (3<sup>rd</sup> panel).

Figure 6-2 shows the results for participant 0051. As seen in the top panel, this participant earned a score of zero for all of the sessions (excluding the control sessions) given that he spent a range of 60% to 80% of the sessions viewing the high-risk materials (2<sup>nd</sup> panel). During the first and third sessions, this participant also stole one page from the high-risk magazines, and only viewed the neutral magazines for approximately 35% of the second session. During the control sessions the participant earned a score of 1, did not spend any time viewing the high-risk materials or stealing any pages, but spent almost the entire session viewing the neutral magazines.

Figure 6-3 shows the results for participant 0054. This participant demonstrated a different pattern of results from the other participants. For the first two sessions, he earned a

score of 1, did not spend any of the sessions looking at the high-risk magazines, and did not steal any pages. Furthermore, he spent approximately 100% of these first two sessions looking at the neutral magazines. On the fourth session, however, the participant earned a score of zero given that he spent 40% of the session looking at the inappropriate magazines. Also during this session, this participant spent less than 2% of the session looking at the neutral magazines. During the control sessions, the participant earned a score of 1, and spent almost 100% of the sessions looking at the neutral magazines. During the third session, the participant did open one of the inappropriate magazines, but it was for less than 5 sec and did not qualify as a score of zero. It appeared that he did not initially notice the magazine's content, but immediately closed it after opening it. He did not steal any pages from the magazines during any of the sessions. It is important to note that his assessment was terminated after the last control session because there was evidence to suggest that he may have determined he was being observed (see discussion for details).

Taken as a whole, in situ assessments were successfully applied to the assessment of sex offenders with DD. In the current study, all 3 participants looked at the child related stimuli, and 2 out of 3 participants stole pictures from the magazines. It is important to reiterate the point that these individuals are specifically taught how to respond when in situations such as the one used in the current assessment. Without the use of in situ assessments in this case, it may have been impossible to show how these individuals might actually respond under similar conditions.

Even though the current assessment format appeared successful in evaluating how these individuals may respond when unsupervised, several issues should be addressed. To begin with, there is no empirical evidence to date that shows a relationship between looking at child related stimuli and the future probability of committing another offense. In other words, because an

individual looks at and steals pictures of children does not necessarily mean that he may be more likely to commit another offense if released back into the community. It does seem reasonable to assume that such individuals may be potentially more dangerous than individuals who do not look at and steal pictures of children, but future research is needed to determine whether that is true.

In the current study, an individual could receive the highest score by immediately leaving the room and informing a staff member about the presence of the high-risk materials. This was chosen as the most appropriate response in that this is what the participants are regularly taught to do in these types of situations. It is important to point out that none of the individuals received a score of 3 in the current study. Aside from how the participants performed, the response designated as most appropriate is questionable. Even though it is what these individuals are taught, it may not be the most appropriate response. In fact, the most appropriate response may involve being in the presence of such materials without looking at them, as shown in the first 2 sessions by participant 0054 who earned a score of 1. Having the participant leave the room and inform others that there are high-risk materials present would likely attract much more attention in a variety of situations, rather than simply being able to avoid looking at the material and remain in the location.

An additional issue resulting from the current assessment format involves the fact that some of the participants stole pictures from the high-risk magazines. Even though the ultimate effects of having child related material are not clear, having such material is against the policies of their treatment facility. Due to the covert nature of these assessments, however, the individuals were never confronted about the stolen pictures. Confronting them about the pictures would have compromised the assessments and it is very likely that they would be able to

determine that they were being observed. Aside from not being able to conduct more assessments with these participants, they likely would have told other clients in the facility and the assessments would essentially become worthless. Therefore, letting the participants keep the material was considered an acceptable side-effect.

Although in situ assessments were useful in assessing what could be considered offense-related behavior, children would never be placed in danger for assessment purposes. However, it may be possible to approximate such conditions in future applications of in situ assessments by creating a situation where it appears that children are present. For example, in the context of a waiting room, various cues could be left to indicate falsely that children may be present in an adjacent room such as the presence of toys, or even a tape recorded voice of a child. Information could be obtained on whether the individual attempted to move toward and enter the room, or if he left the area and notified someone that he was in a potentially dangerous situation.

It is always possible that some individuals may be able to figure out that they are participating in an assessment and that their behavior is being observed and recorded. Therefore, while they may be demonstrating the appropriate pattern of responding, their behavior may not be under the relevant sources of control. Evaluating an individual's pattern of responding under high-risk conditions would be most useful if repeated measures under varying conditions can be obtained. However, attempting to create new situations could potentially be very time consuming and increase the chances that an individual may become suspicious and/or identify the actual purpose of the assessment. In fact, it appears that one of the participants (0054) may have become suspicious of the assessments at some point during the fourth session. During the time spent with the confederate behavior analyst, this individual made several comments about the type of materials present in the waiting room and then began to discuss the fact that he felt he

should not be held to the same restrictions as the other individuals in the treatment facility regarding child related material (i.e., avoiding such material). Therefore, it was decided to have this individual participate in only one more control session before terminating his participation. Having additional sessions would have been preferable, but it would have increased the risk of damaging the integrity of the assessment procedures.

In addition, aside from providing important assessment information in situ assessments can be used as a way of determining skill deficits for training purposes. As mentioned previously, none of the participants engaged in the responses taught to them at their current treatment facility. These outcomes have obvious implications for the methods by which the individuals are taught. Future assessments can be used to evaluate potentially more effective means of instruction. In situ assessments could be used to assess social skill deficits as well. It is likely that many individuals (such as those included in the current dissertation) lack important social skills that could potentially improve their chances of succeeding if released back into a community setting. For example, if an individual did not know how to engage an appropriately aged male or female in conversation, the chances that he could develop an appropriate sexual relationship are very low. Having a lack of appropriate alternatives could then potentially increase the chances of attempting to target children. In an effort to address this potential problem, a basic in situ assessment format could be designed where an individual may encounter an adult male or female (confederate) who is of his approximate age. Depending on his particular skill deficits, he could be taught appropriate conversation techniques and topics that could then be tested when encountering the confederate adults and hopefully used when encountering other adults in community settings.

Overall, the use of in situ assessments represents a translation of a widely used behavioral methodology to the problem of sex offending among individuals with DD. Another widely used behavioral assessment methodology is the use of stimulus preference assessments. It is possible that a commonly used stimulus preference assessment format could be adapted to gain additional information about an individual's sexual preferences. For example, it may not only be important to determine to which individuals a sex offender shows high levels of arousal, it might also be important to show which of those individuals an individual may choose as being most preferred. Having such information may help to better predict which individuals a sex offender may target if given the opportunity. Study 6 was designed to develop an assessment using common behavioral preference assessment procedures to identify preferences for age and gender in DD sex offenders.

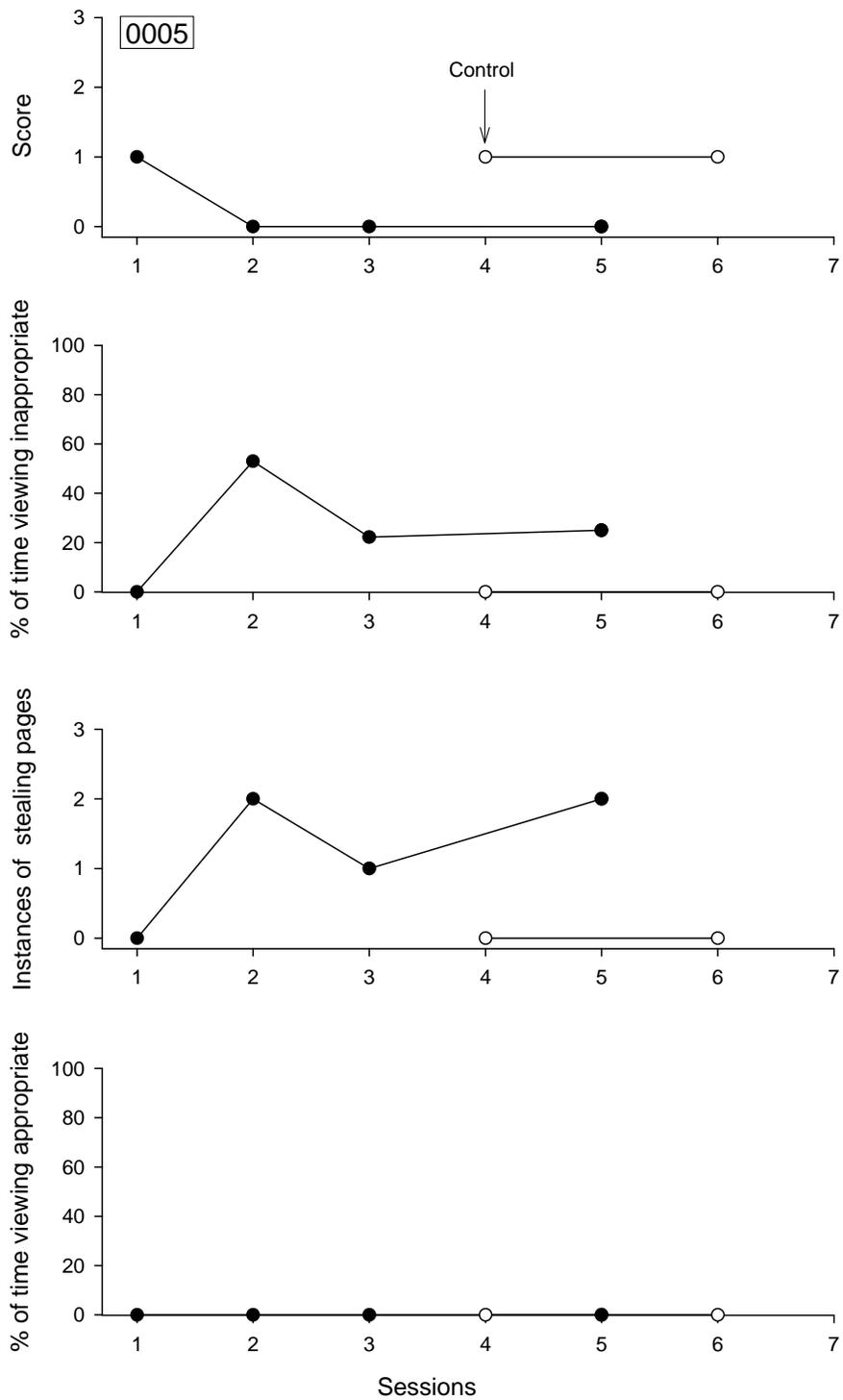


Figure 6-1. In situ assessment outcomes obtained for participant 0005. The score is shown in the top panel, percentage of time viewing inappropriate stimuli is shown in the 2nd panel, number of pages stolen is shown in the 3rd panel, and percentage of time viewing the neutral stimuli is shown in the bottom panel. Open circles represent the control sessions.

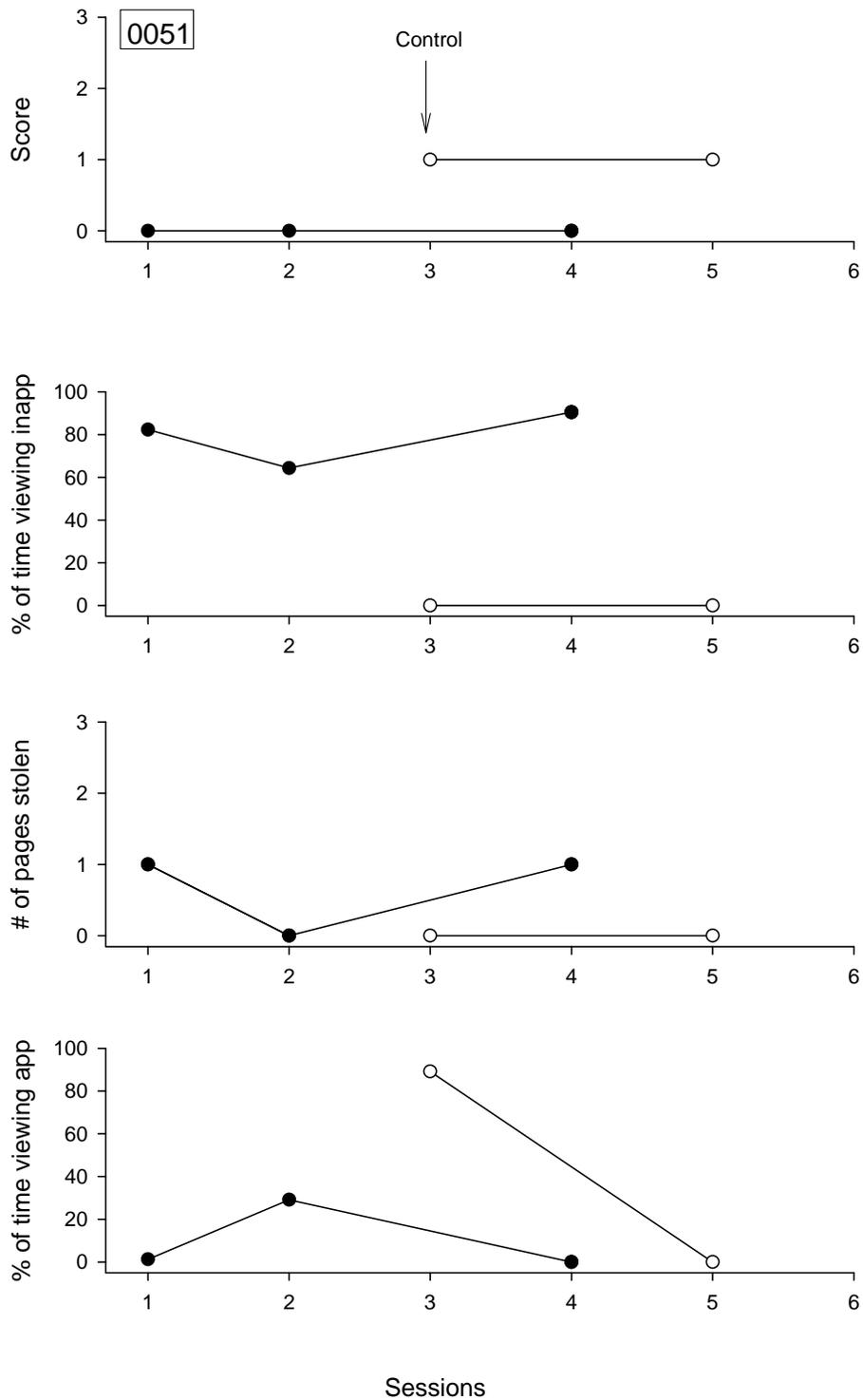


Figure 6-2. In situ assessment outcomes obtained for participant 0051. The score is shown in the top panel, percentage of time viewing inappropriate stimuli is shown in the 2nd panel, number of pages stolen is shown in the 3rd panel, and percentage of time viewing the neutral stimuli is shown in the bottom panel. Open circles represent the control sessions.

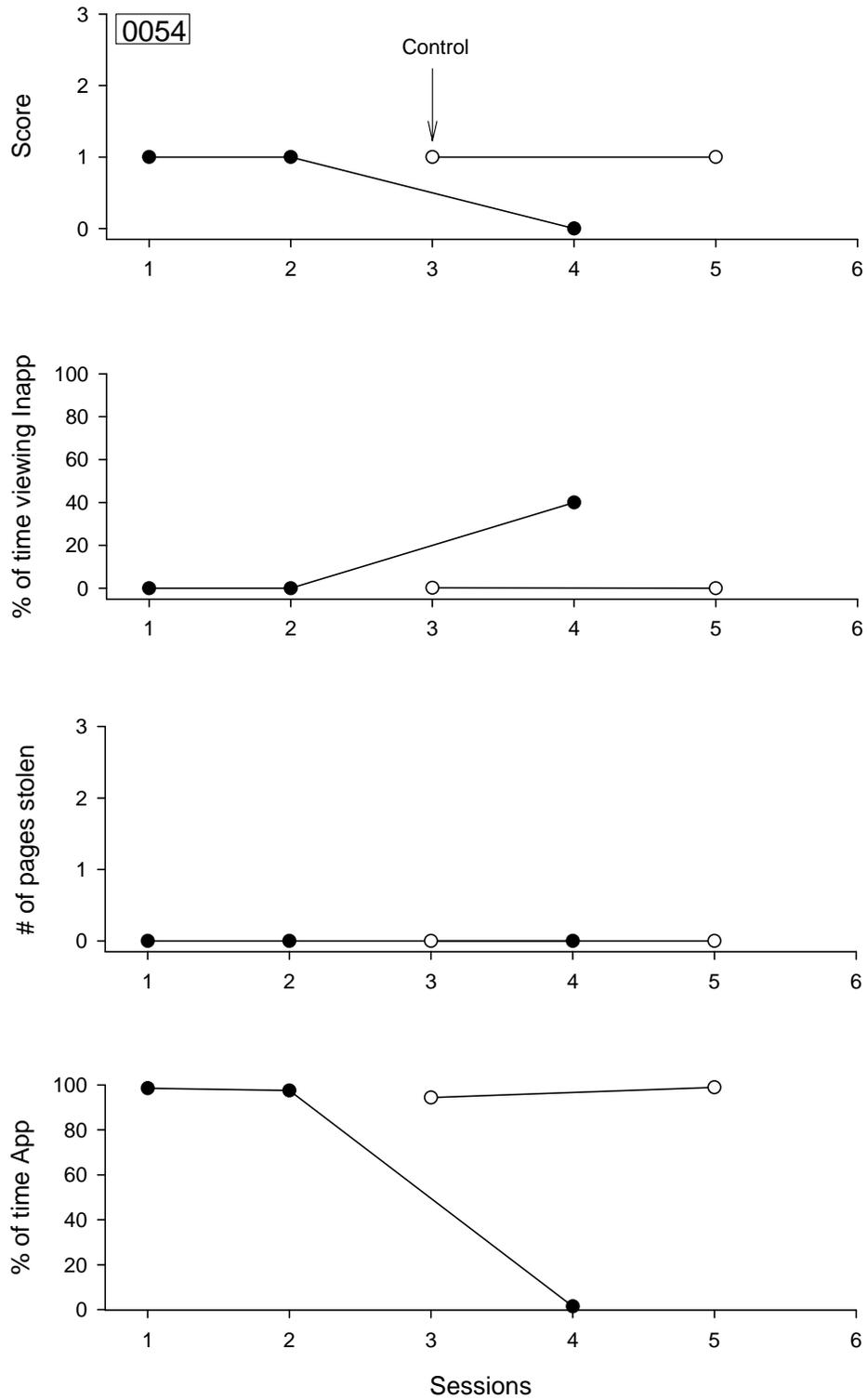


Figure 6-3. In situ assessment outcomes obtained for participant 0054. The score is shown in the top panel, percentage of time viewing inappropriate stimuli is shown in the 2nd panel, number of pages stolen is shown in the 3rd panel, and percentage of time viewing the neutral stimuli is shown in the bottom panel. Open circles represent the control sessions.

## CHAPTER 7 STUDY 6

### **Introduction**

Assessments designed to identify stimulus preferences in individuals with DD are well established and frequently used within the field of applied behavior analysis. Usually these assessments are used to identify possible reinforcers for skill acquisition procedures (such as shaping) or behavior reduction programs (such as differential reinforcement). Several assessment formats have been developed to identify preferred items and activities that may function as reinforcers. It is possible that some of these preference assessment formats could be modified to measure an individual's preference for males and females of different developmental ages (or any number of other physical characteristics). Furthermore, because the majority of preference assessment formats were designed to be used with individuals with DD, the transition for use with sex offenders with DD could be relatively straightforward. The idea is not to use these stimuli as reinforcers, but to use the information as a component of the assessment process.

By initiating a line of research on preference, specific physical features of possible victims could be identified. Identification of preferred physical features may help focus subsequent intervention efforts. Because the previous arousal assessments in this dissertation focused on age and gender as target physical features, the preference assessments also focused on age and gender as initial characteristics for evaluation.

### **Purpose of Study 6**

The purpose of the current study was to adapt a commonly used preference assessment known as paired-choice (Fisher et al., 1992) to evaluate age preferences for sex offenders. The method involved using pictures of the males and females from the plethysmograph assessment

videos (described in previous studies) and to evaluate the correspondence between preference assessment outcomes and previous arousal assessment outcomes.

## **Method**

### **Participants**

Five individuals from the same state residential treatment facility for DD offenders were included in the current study. Participant 0051 previously participated in studies 3, 4d, and 5. Participant 0005 previously participated in studies 2, 3, 4a through 4d, and 5. Participant 043 previously participated in studies 2, 3, and 4d. Participant 0022 previously participated in study 1. Participant 0054 had previously participated in study 5.

### **Stimuli**

The pictures used in the preference assessments were obtained by first deconstructing the video clips into individual frames, and then selecting one particular frame from each of the 10 videos to use as a picture. The frames chosen from each video were selected from a similar part in each video in order to make the pictures as similar as possible. Every attempt was made to select pictures only showing the individual's face, but some pictures also included parts of an individual's upper body as well.

### **Computer Program**

The preference assessments were conducted using a computer program written in Visual Basic®. The program was designed to follow the procedures used in a paired-choice preference assessment format (Fisher et al., 1992) which involves presenting items in pairs and having a participant select one of the items. Each item is presented with every other item and the individual is required to make a selection during every presentation. The paired-choice format was chosen given its widespread use in applied behavior analysis, the outcomes show a hierarchy

of preference among available choices, and it was the most practical in terms of programming requirements.

Each trial of the preference assessment involved the presentation of two pictures, one on the left side of the screen and the other on the right side of the screen. Each of these pictures measured approximately 1 in by 1 in. A picture was selected by using the computer mouse to click on the picture. Once a picture was selected, the other picture disappeared and the selected picture was enlarged to approximately 3 in by 3 in and appeared in the middle of the screen for 5-sec. After 5-sec, the picture disappeared and the computer screen remained blank for a period of 5-sec, after which two new pictures appeared. The computer program cycled through each of the pictures until each picture was presented with every other picture and counterbalanced for a total of 18 presentations per picture. If a participant failed to select a picture within 30-sec of the start of a trial, a pre-recorded vocal prompt to select one of the pictures was presented automatically.

The program began with a set of pre-recorded vocal instructions that described the procedures to the participant and what they would be required to do. The instructions were as follows:

The session is about to begin. When it starts, you will see two pictures. What I want you to do is to think about which one you like more and use the mouse to click on the picture. When you select a picture, you will be able to look at it for 5 seconds and then it will go away. After a little while 2 new pictures will appear and I want you to do the same thing, pick which one you like more. It is important that you really pick the one you like more. You will not get in trouble for picking any of the pictures. When you are ready to start,

click the green start button or click the other button to see demonstration of what the session will be like.

Before beginning the actual assessment, the participant was allowed to ask any questions and could participate in an optional demonstration. The demonstration consisted of an additional set of vocal instructions and guided the participant through each step of the procedure using 2 neutral pictures (i.e., pictures of apples). Upon completion of the demonstration, the participant was allowed to ask any additional questions before beginning the assessment.

### **Procedure**

Each individual was seated in a room with a laptop computer. The behavior analyst started the program and left the room. Upon completion of the vocal instructions, the behavior analyst re-entered the room and answered any questions the participant may have had and then left the room again. After the assessment was over, the behavior analyst entered the room again, thanked the participant, and escorted him out of the experimental room.

### **Data Analysis**

All of the preference assessment data were analyzed in terms of the percentage of times that each picture was chosen across the entire assessment. In addition, the arousal assessment outcomes for each participant were reanalyzed by calculating the average mm change shown to each stimulus category across the entire assessment. Arousal assessment outcomes were analyzed in this way in order to compare patterns with the preference assessment outcomes.

### **Results and Discussion**

Figure 7-1 depicts the results for participant 0051. The preference assessments outcomes are shown in the upper panel and the overall arousal assessment outcomes are shown in the lower panel. The order of stimuli on the x-axis for the arousal assessment outcomes was matched to the preference assessment outcomes in order to aid in the comparisons. The female 8-9 stimulus

was identified as the most preferred stimulus being selected 100% of the time when it was available. Preference was also high for the female 6-7 and the female kindergarten stimuli. A similar pattern of results was obtained with the arousal assessment outcomes. The highest levels of arousal were obtained to the female 8-9 stimulus, followed by the female 6-7 stimulus and the female kindergarten stimulus. Arousal levels were also high to the female teen and female adult stimuli, however, those stimuli were not identified as highly preferred during the preference assessments.

Figure 7-2 shows the results for participant 0005. The preference assessment outcomes (top panel) identified the male 6-7 stimulus as most preferred, followed by the male 8-9 and the male kindergarten stimuli. In the arousal assessment (lower panel) similar outcomes were obtained, although arousal levels were highest to the male 8-9 stimulus and the female kindergarten stimulus, followed closely by the arousal levels to the male 6-7 stimulus. Overall arousal levels to the male kindergarten stimuli were also high in comparison to arousal levels to the other remaining stimuli.

Figure 7-3 shows the results for participant 0043. In this case, the preference assessment outcomes (upper panel) showed the female kindergarten stimulus as most preferred, which was the same stimulus associated with the highest levels of arousal in the arousal assessment outcomes (lower panel). High levels of arousal were also obtained with the female 8-9 and female 6-7 stimuli; however, they were not ranked as highly preferred during the preference assessment.

Figure 7-4 shows the results for participant 0022. For this participant, the male 6-7 stimulus was most preferred during the preference assessments (upper panel). There was little correspondence between the preference assessment outcomes and the arousal assessment (middle

panel). The arousal assessment outcomes for this participant appear to be fairly undifferentiated overall. This participant, however, showed a unique pattern of responding throughout the arousal assessments. Arousal levels would generally remain low during the stimulus presentations, but would increase immediately following their termination. Because of these patterns of results, this participant's results were also analyzed by peak arousal following a stimulus presentation and before the next stimulus presentation. When the results were analyzed in this manner (lower panel), the highest levels of arousal occurred to the male 6-7 stimulus, which was ranked as the most highly preferred stimulus in the preference assessment.

Figure 7-5 shows the results for participant 0054. In this case the preference assessment outcomes (upper panel) identified the female adult and female teen stimuli as most preferred. Similarly, the arousal assessment outcomes for this participant (lower panel) showed that the female adult and female teen stimuli generated the highest levels of arousal.

Overall, the results demonstrated that preference assessment methodology can be utilized as an assessment component for DD sex offenders to identify age and gender preferences. Furthermore, given that arousal assessments using the penile plethysmograph are considered to be the most reliable indicator of sexual arousal, the fact that the preference assessment outcomes corresponded with the arousal assessment outcomes for 4 out of 5 participants provides additional support for using preference assessments for this purpose. Despite their potential utility, however, it is premature to recommend these types of preference assessments as a replacement for arousal assessments. Presently, preference assessments could be treated as one component of an overall assessment package that includes the use of arousal assessments.

One of the potential contributions these types of preference assessments may offer stems from the fact that they require an operant response to a set of stimuli to which a respondent

response (i.e., arousal) has already been evaluated. This can add to the information from arousal assessments in several ways. For example, the outcomes for participant 0051 showed high levels of arousal to the female adult and female teen stimuli in addition to the younger females. His preference assessment outcomes, however, showed that the female adult and female teen stimuli were rarely selected. Combining the information from the preference and arousal assessments shows that while this individual may become sexually aroused by older females, he would likely choose younger females if given the opportunity. Another potential use is highlighted with the outcomes for participant 0022. In this case, the initial arousal assessment outcomes were fairly undifferentiated among the stimuli. The preference assessment outcomes, however, showed a more specific preference for the male 6-7 stimulus. Furthermore, when the preference assessment outcomes were compared to the latent arousal analyses, the results corresponded more closely (at least for the most preferred stimulus). Therefore, preference assessment outcomes could potentially help to identify more specific preferences when arousal results are undifferentiated. One additional way these outcomes might be used involves situations where the overall levels of arousal are generally low throughout an assessment as was seen with participants 0022, 0043, and 0054. If the stimuli to which the highest levels of arousal are shown (even though they might be low) are also identified as most preferred during a preference assessment, the combination of the two assessments may aid in identifying an individual's sexual preferences.

Although the present results are promising, it is important to point out some potential limitations. To begin with, the nature of the task itself would make it easy to manipulate the outcomes. For example, an individual may actually prefer young children, but could select the older stimuli during the assessment thereby making the outcomes seem that adults are preferred.

Given the fact that these participants are in a treatment facility for committing a sexual offense against a child, they may be highly motivated to show that they prefer male or female adults to children. Somewhat surprisingly, however, this did not appear to be an issue in the current study. This result may have been due to a component of the instructions which encouraged them to pick honestly with no adverse consequences, but that possibility was not systematically evaluated.

An additional potential limitation stems from an inherent assumption involved in interpreting the outcomes. The differential selections are assumed to be a function of differential preferences across age and gender categories. Given the fact that the pictures differed in other ways such as hair and eye color, showing only an individual's face versus the face and part of the upper body, and so on, the results could have instead been a function of these characteristics. Future research could be designed to address this limitation as well as extend the use of preference assessments in order to identify more specific characteristics other than age and gender preferences. However, arousal assessments are often similarly limited and the current method could be used as a guide to evaluate other characteristics and physical feature preferences.

Future research could also be designed to test for the reinforcing efficacy of the images identified as preferred. Research evaluating preference assessments have shown that items identified as preferred may function as reinforcers under conditions where low effort is required to contact them, but may not function as reinforcers under conditions of higher response requirements. For the current purposes, access to the preferred image could be made contingent upon completion of some type of task in order to evaluate how much effort an individual would exert to gain access to the image. The reinforcing efficacy of the preferred image could also be

compared to other images to see if it generates more responding. Whether or not the participant responded more to one or the other would still offer potentially important information. For example, if high levels of responding were obtained for the preferred image, it might suggest that this individual may persistently seek out a child with a similar description if given the opportunity. If similar levels of responding were obtained across preferred and less preferred stimuli, it may suggest that although an individual may prefer children with particular characteristics, he may be just as likely to offend against another child if given the opportunity (i.e., children of different age groups may be highly substitutable, see Green & Freed, 1993). Furthermore, the effects of intermittent punishment could be tested (i.e., analogies to "getting caught").

Even though future research is needed to determine the overall utility of including the use of preference assessments in the assessment of sex offenders with DD, the initial outcomes are promising. Having assessment techniques that address operant features of sexual offending can hopefully lead to a more comprehensive assessment package that will aid in designing effective treatment packages for DD sex offenders.

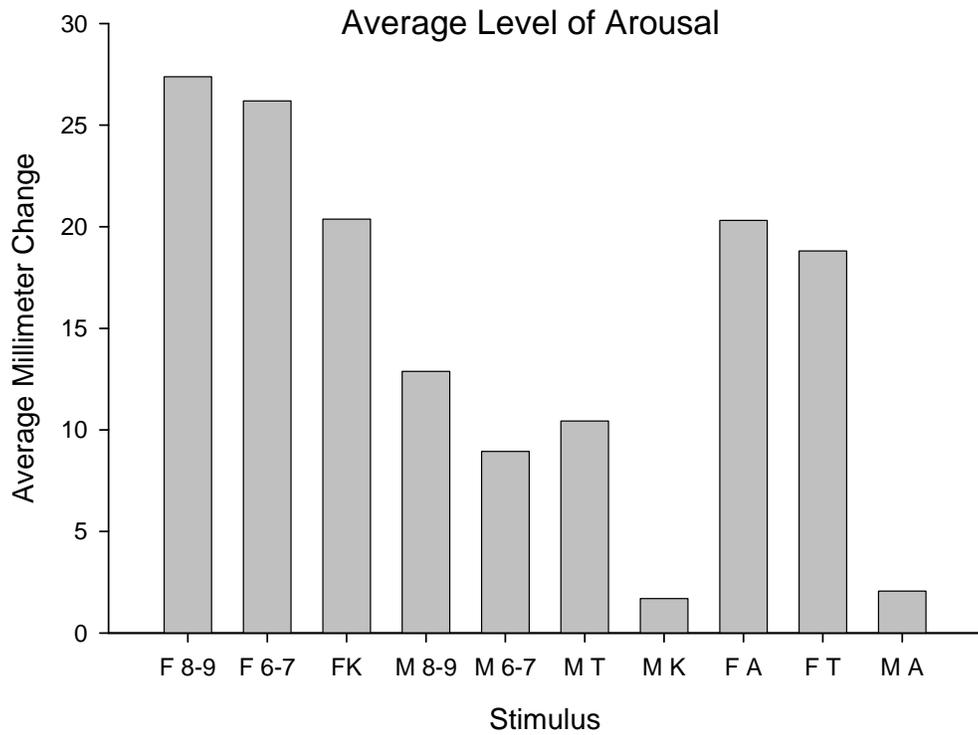
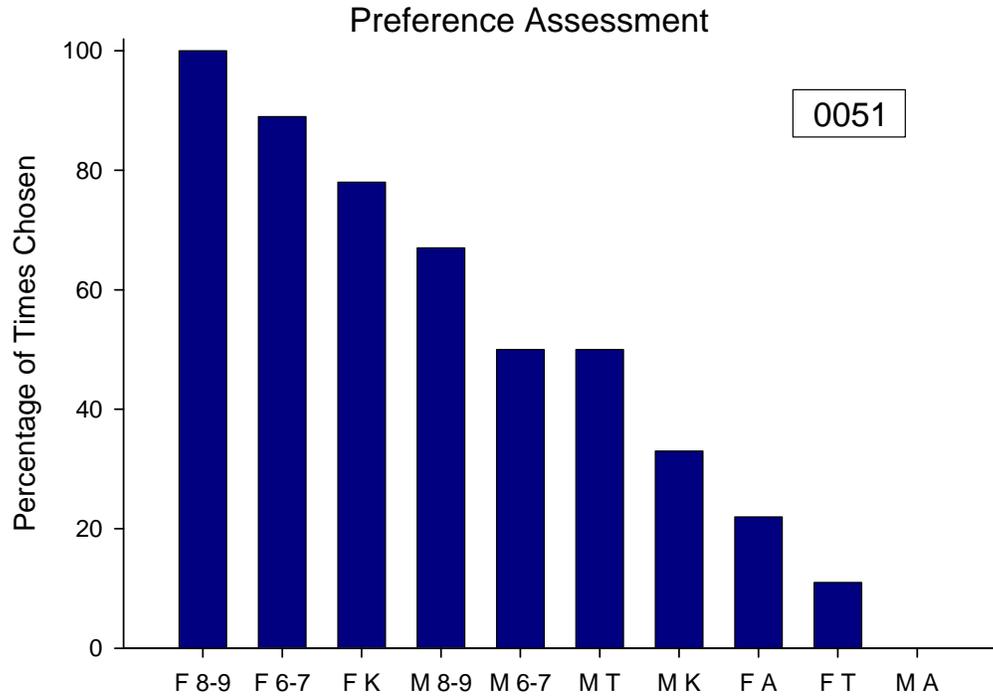


Figure 7-1. Assessment outcomes obtained for participant 0051 for the preference assessment (Upper Panel) and arousal assessments (Lower Panel).

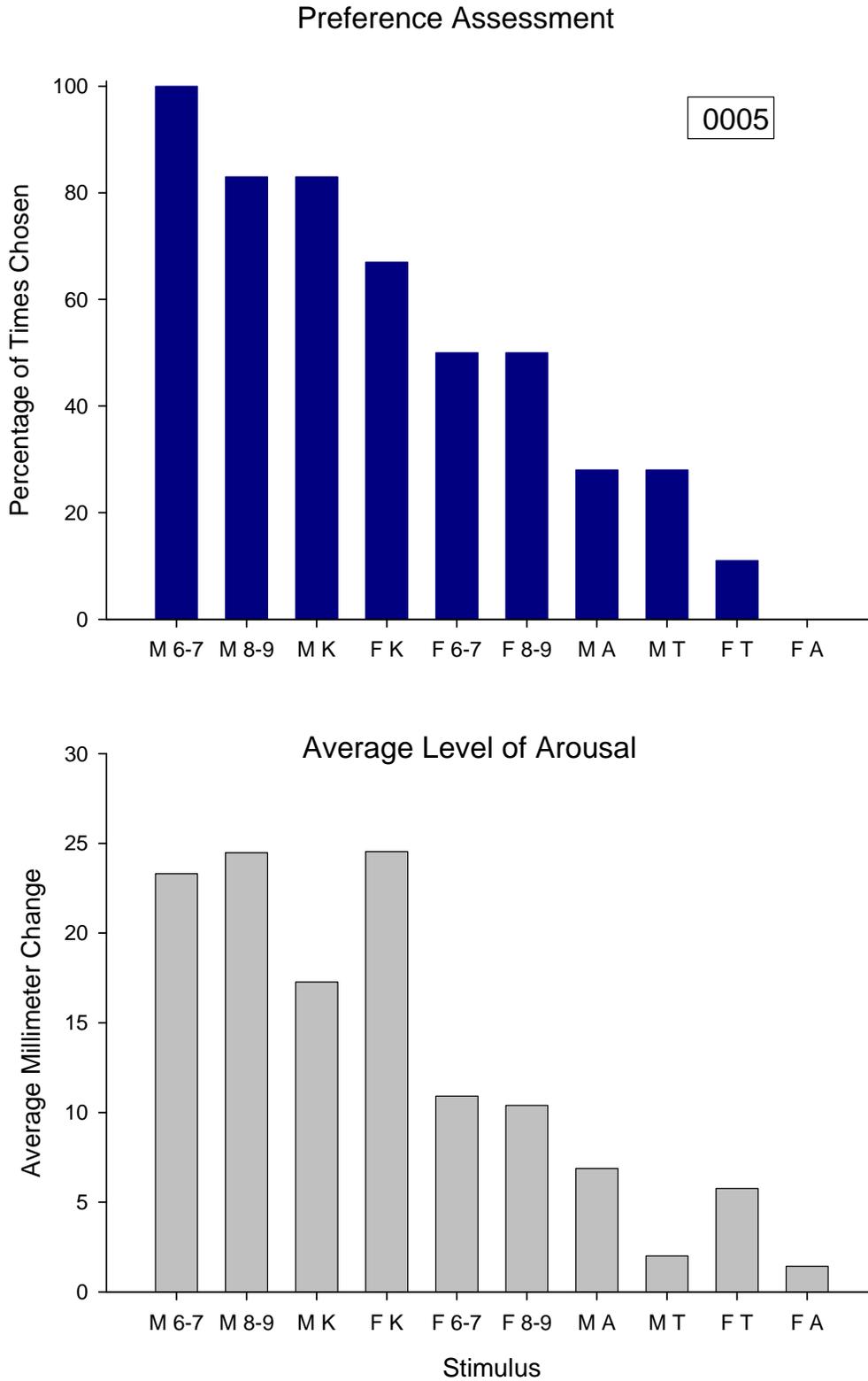


Figure 7-2. Assessment outcomes obtained for participant 0005 for the preference assessment (Upper Panel) and arousal assessments (Lower Panel).

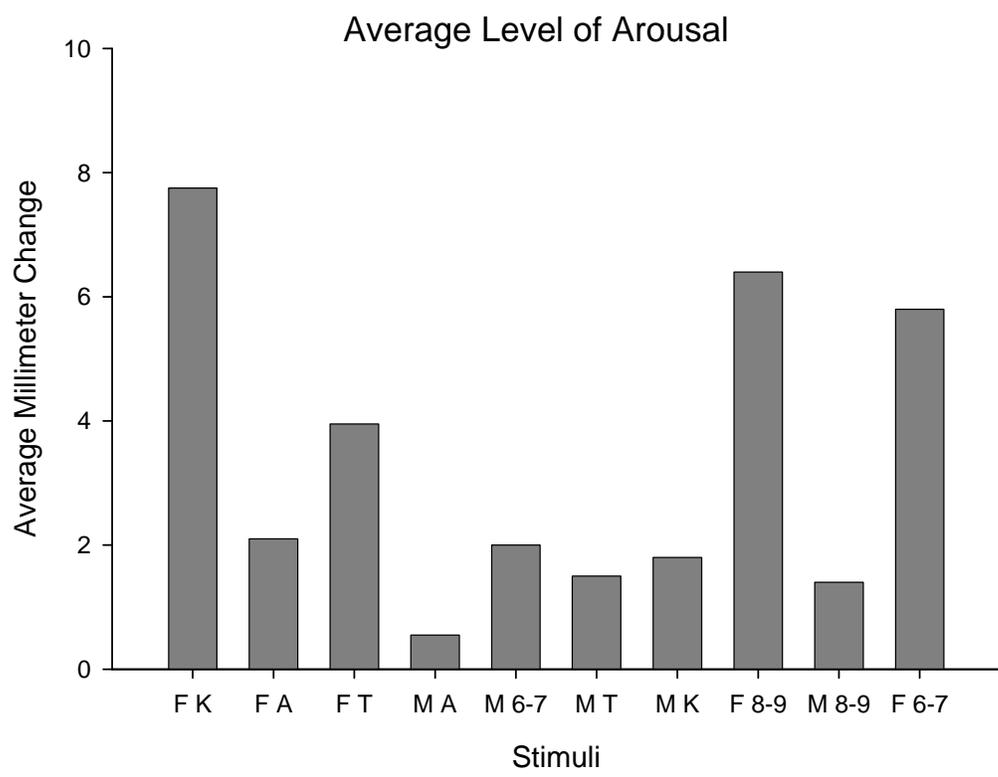
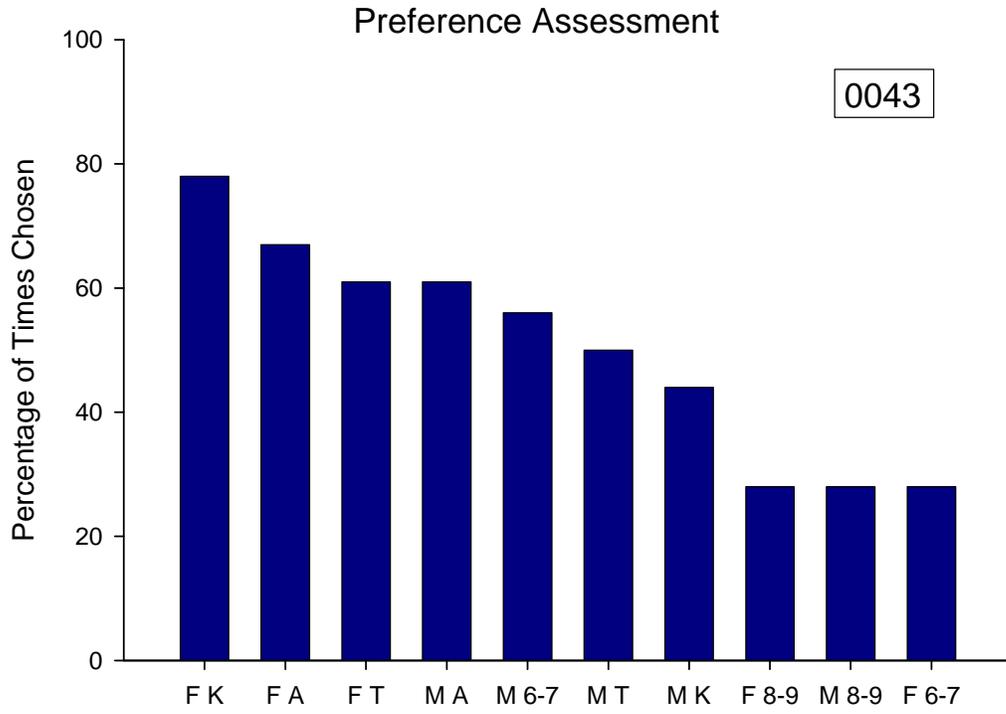


Figure 7-3. Assessment outcomes obtained for participant 0043 for the preference assessment (Upper Panel) and arousal assessments (Lower Panel).

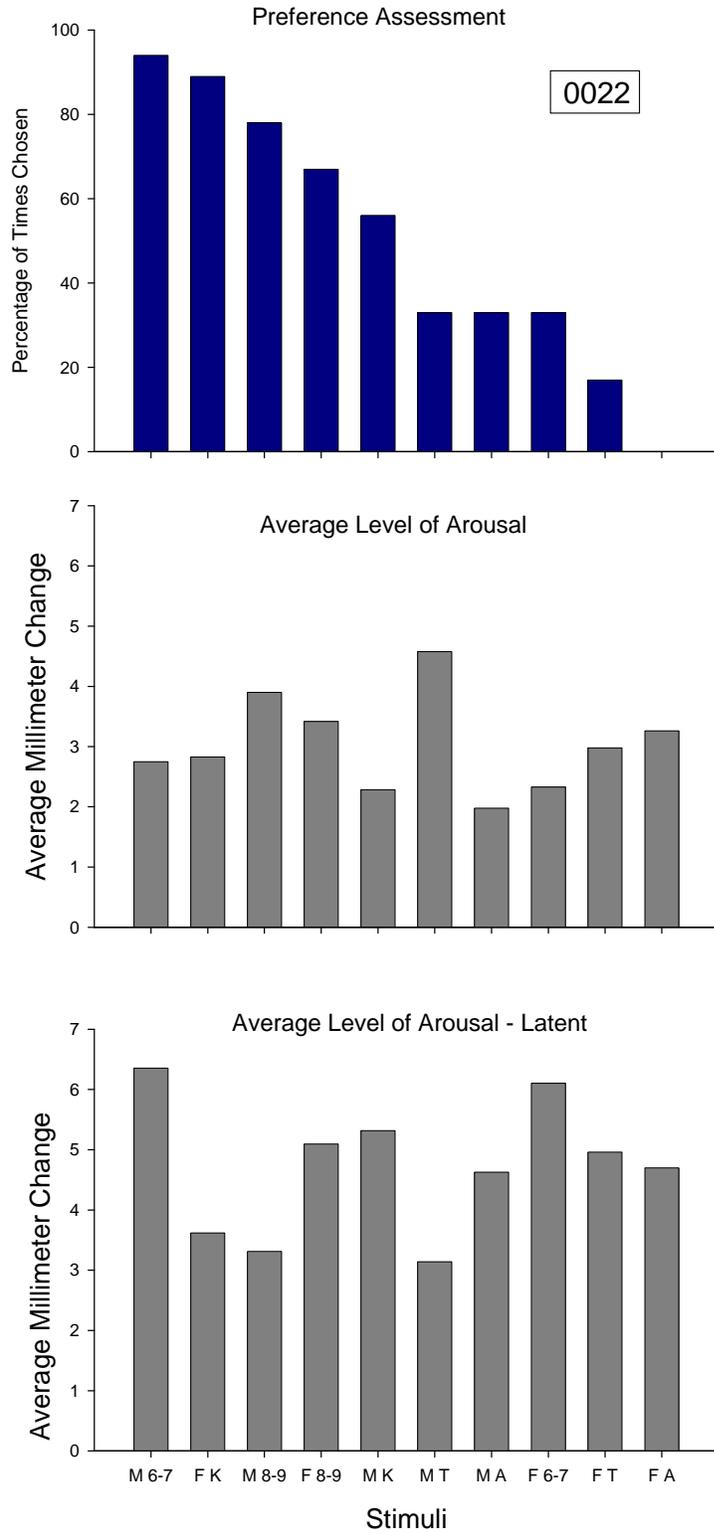


Figure 7-4. Assessment outcomes obtained for participant 0022 for the preference assessment (Upper Panel), arousal assessments (Middle Panel), and the latent arousal outcomes (Lower Panel).

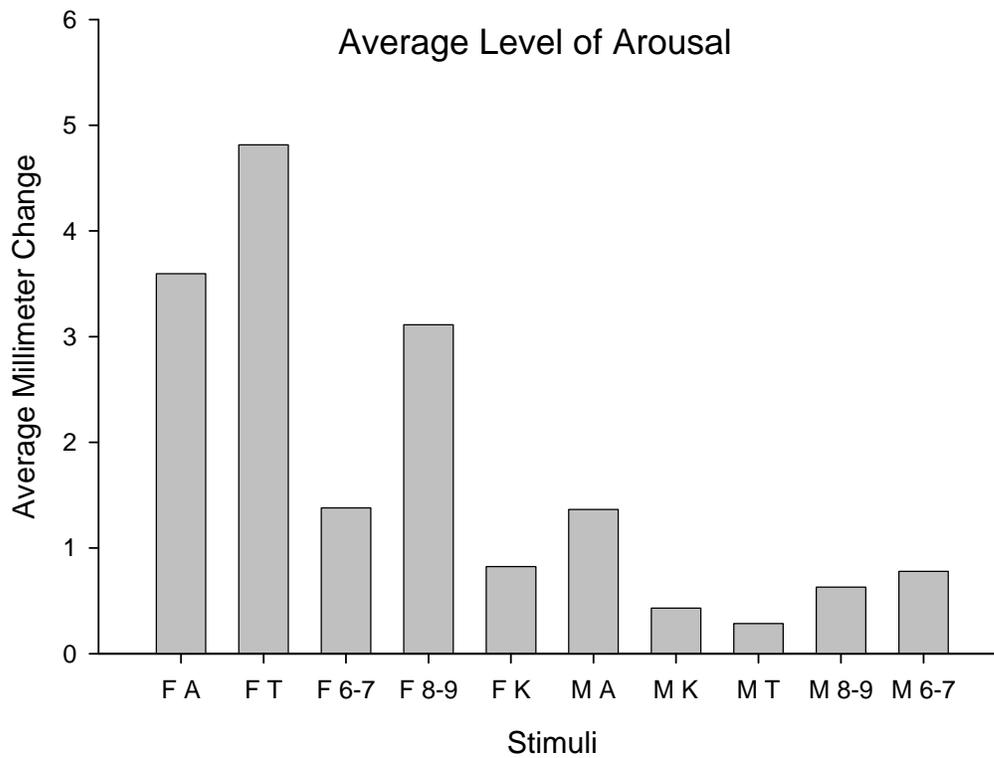
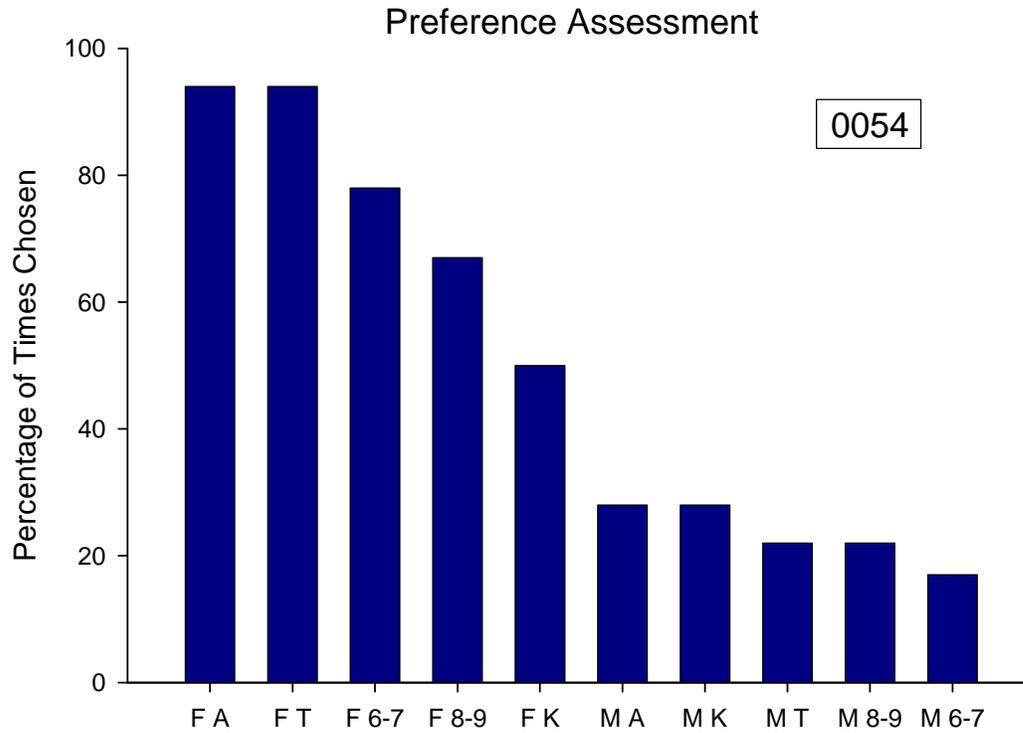


Figure 7-5. Assessment outcomes obtained for participant 0054 for the preference assessment (Upper Panel) and arousal assessments (Lower Panel).

## CHAPTER 8 GENERAL DISCUSSION

### **Overview of Results**

The present series of studies served as a demonstration highlighting a behavioral approach to the assessment of DD sex offenders. Studies 1 through 4 primarily demonstrated the effectiveness of using phallometric assessments with DD sex offenders. Although some previous literature had questioned the effectiveness of using the penile plethysmograph with this population (e.g., Murphy et al., 1983), the outcomes from all 4 studies provides support that it is a viable mechanism for measuring arousal with DD sexual offenders. Furthermore, the commonly cited concern of habituation (e.g., O'Donohue & Plaud, 1991) did not appear to be a practically significant issue with any of the participants (aside from the possible participants already noted in study 1, and with participant 0005 in studies 4b and 4c ). Studies 5 and 6 demonstrated a new direction in the assessment of DD sex offenders by attempting to incorporate operant features of sex offending and additional measures of sexual preference.

Studies 1 and 2 showed that the penile plethysmograph was capable of capturing differential levels of arousal when collecting repeated measures of arousal. Aside from the Rea et al. (1997) study, the use of repeated measures of arousal with DD sex offenders had not been demonstrated. Moreover, the use of the additional data analysis techniques in study 2 could contribute to the literature by highlighting how overall arousal levels across age and gender categories compare with one another.

Study 3 highlighted potential variables that can affect responding during arousal assessments. Control of arousal had not previously been shown with DD sex offenders, and the effects of pre-session masturbation had never been demonstrated with any population. These factors now must be considered when conducting phallometric assessments.

Standard behavioral methodology not only allowed for an effective evaluation of these variables as assessment components, but also helped to demonstrate how the outcomes could be interpreted as potential treatment components.

Studies 4a through 4d were technical studies centered on the development of a newly created portable plethysmograph device. The primary purpose of this series of studies was to systematically evaluate the functioning of the device under a variety of conditions and eventually to demonstrate its use in measuring arousal in community settings. Study 4a compared the arousal levels obtained with the portable plethysmograph with those obtained with the standard clinical equipment and showed that both captured similar levels of arousal overall. Study 4b involved comparing arousal levels across conditions where the participant was wearing pants and was not wearing pants and showed that similar levels of arousal were obtained across both conditions. In study 4c, the portable plethysmograph was tested in a controlled setting outside of the typical clinical conditions and similar levels of arousal to those found in clinical conditions were obtained. Finally, study 4d involved measuring arousal in community settings. Although there were several unanticipated complications, the portable plethysmograph captured arousal levels in uncontrolled community settings. Furthermore, the addition of the video equipment aided in the identification of potentially relevant individuals found in the environment. Taken as a whole, study 4d is noteworthy given that it serves as the first known demonstration of measuring arousal in community settings using these procedures. At a minimum, studies 4a – 4d demonstrated that the portable plethysmograph is a viable tool for use in the assessment of sex offenders with DD, and can serve as the foundation for additional studies, including treatment evaluations.

Study 5 represented an assessment of operant behavior related to sexual offending. In this case, the assessment involved covertly observing individuals in the presence of high-risk materials in the form of magazines containing pictures of children. Outcomes showed that all of the participants looked at the materials, and 2 participants stole pictures from those materials. Observing these individuals "in situ" provided the opportunity to see how they might behave when alone, and even more importantly, if released into community settings. Although the outcomes from study 5 are important and can contribute valuable information to an individual's overall assessment, potentially larger contributions stem from the methodology. Application of in situ assessments to the sex offender population offers almost limitless opportunities to assess these individuals under a variety of situations that would otherwise be impossible. Of course, ethical issues surrounding consent are sensitive not only from the participant's perspective (i.e., usually people need to "know" they are being assessed) but insofar as pre-session knowledge of the procedures would essentially make the results moot (i.e., knowing about the assessment renders the results useless). Thus, cultural values will ultimately determine the social validity and utility of the procedures; the ethical quandary surrounding discrete observation must be balanced against the severity of the behavioral problem.

Finally, study 6 involved the application of traditional behavioral preference assessment methodology to the assessment of sexual preferences for sex offenders with DD. Although preference assessments are the most common way to assess preference for individuals with DD, they had never been applied to the assessment of age and gender preferences for DD sex offenders. The outcomes not only showed differential gender and age preferences, the individuals identified as most preferred also corresponded closely (in most cases) to results of the arousal assessments.

It is important to note that even though the present series of studies focused on the assessment of sex offenders with DD, there is nothing specific to any of the studies that would prevent application with non-DD sex offenders. This is not to say that the procedures used in the current studies would be effective with non-DD sex offenders, but it may be worthwhile to systematically replicate these studies with a larger population. This could be especially true with studies 4, 5, and 6 given that they have not been applied with sex offenders without DD and the previously mentioned limitations of behavioral approaches are relevant to this population as well.

### **Use of Assessment Information**

In general, the ultimate goal of an assessment is to be able to utilize the information to make informed decisions and design effective treatments. Behavioral approaches have been successfully applied to a wide range of behavior problems with a great degree of success. As previously mentioned, however, behavioral approaches to the assessment and treatment of sexual offending have been criticized for being limited in scope and ultimately have been abandoned in favor of cognitive approaches. When analyzed objectively, behavioral approaches were in fact limited due to the sole focus on the respondent (i.e., arousal) based features of offending. The present series of studies can be viewed as an attempt to address some of the previous limitations of behavioral approaches and offer a more comprehensive behavioral approach that encompasses the respondent as well as the operant features of sexual offending.

The potential advantages of the proposed assessment approach, in terms of designing treatments, stem from having additional areas to target for intervention. More specifically, given that previous interventions were mainly designed to address deviant arousal, assessments of operant behavior would help to target additional areas for intervention by identifying skill deficits. For example, study 5 showed that none of the participants engaged in the response that

they had been taught at their treatment facility. Such outcomes could be used as a baseline to determine the effectiveness of skills training procedures to teach the individuals appropriate responses under a variety of conditions. Furthermore, training the responses under a variety of conditions could help with generalization and maintenance of any newly acquired skills.

In addition, information gathered from these assessments can also serve as a basis for designing reinforcement contingencies as an intervention component for respondent and operant features of offending. For example, contingencies could be arranged within the context of a suppression evaluation by providing reinforcement for maintaining arousal under a specified level both within and outside of clinical settings. Contingencies could also be arranged for responding in the context of community settings and demonstrating skill acquisition. For example, reinforcers could be delivered if individuals avoid children or areas where children are likely to be present while in community settings. Furthermore, appropriate social interactions could be reinforced by a confederate in the context of an in situ assessment. In general, reinforcement contingencies could be applied under a number of different circumstances as a way of potentially improving the efficacy of treatments.

Aside from designing treatments, the information gained from assessments is frequently used to make important decisions regarding an individual's overall risk to the community. Determining risk, however, could be very challenging and potentially dangerous. It would be highly unlikely that any committed sexual offender would ever be deemed completely safe under any circumstances solely based on the fact that he has committed an offense in his past. The currently proposed assessment model, however, may help to determine which individuals may pose more of a risk than others. Regardless of how community members may feel, it is likely that some sex offenders will be released and it is especially likely that DD sex offenders will be

released at some point in time. Having a method to gauge the level of risk may prove useful for either establishing necessary community supports before releasing an individual, or providing evidence to show why a particular individual should not be released.

Consider an example comparison of two participants included in the current dissertation. Participant 0051 has shown repeated high levels of deviant arousal during clinical plethysmograph assessments and has shown high levels of arousal while in the presence of children during community assessments. He has also shown a preference for deviant stimuli as indicated by his preference assessment outcomes. Finally, during in situ assessments, this participant looked at the high-risk materials on all possible occasions (excluding the control sessions) and stole pictures from those materials on two out of three occasions. On the other hand, participant 0054 has shown a different pattern of responding on almost all of the same assessments. During clinical assessments, this participant did not show high levels of arousal to deviant stimuli. Highest levels of arousal were shown to the female teen and female adult stimuli. It is important to note that although sexual actions by adults towards males or female teens under the age of 18 is considered deviant and illegal, arousal to teens is not considered to be unusual given similar characteristics between this age group and adults (Harris, Rice, Quinsey, Chaplin, & Earls, 1992). Furthermore, preference assessment outcomes for this participant showed a similar preference for the female adult and teen stimuli. Although the in situ assessment outcomes for this participant were somewhat inconclusive, he did not steal or attempt to steal any pages from the inappropriate magazines. Unfortunately no arousal data from community assessments are available for this participant, but the available information from these two participants could aid in decision making.

### **Concluding Remarks**

The outcomes of the current series of studies can hopefully serve as a starting point on which to continue to build a comprehensive behavioral assessment and treatment model for DD sex offenders. Although there will likely be additional unforeseen challenges in working with this population, at the very least, the assessment approach proposed in the current dissertation offers some improvements upon prior approaches. Furthermore, the current behavioral approach may prove to be an effective direction in a field where to date, no truly safe and effective approaches have been developed.

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## BIOGRAPHICAL SKETCH

Jorge Reyes first became interested in behavior analysis during the second semester of his junior year at the University of Florida (UF). He had been a psychology major since his sophomore year and had taken classes in every area except for behavior analysis until he enrolled in the introductory course in the experimental analysis of behavior. The differences between what he learned in this class and what he had been learning in the other areas of psychology were immediately apparent. This class prompted him to continue learning about behavior analysis and he enrolled in Dr. Pennypacker's self-paced programmed instruction course. During his final semester at UF he continued working with Dr. Pennypacker and became a manager for his course. During this semester he also decided that he wanted to further his education in behavior analysis and pursued a master's degree from the University of North Texas (UNT).

While at UNT, he explored many different areas of behavior analysis and also became very involved in teaching. He spent some time providing services for children with Autism and also focused on investigating schedules of reinforcement with human participants. During his first semester at UNT, He began working as a teaching assistant for one of the undergraduate courses in behavior analysis. He eventually began teaching the same course and during his final year, he worked as the teaching supervisor for the other graduate students involved with the course. He conducted his Masters research with Cloyd Hyten in the area of behavioral economics. His thesis in particular investigated the effects of schedule type and instructions on the elasticity of demand. More specifically, unit prices were either constructed using Fixed-Ratio (FR) or Variable-Ratio (VR) schedules of reinforcement and participants were either informed or not informed about the unit price during each of the sessions. Results showed greater elasticity of demand under FR schedules than VR schedules. Furthermore, results also

showed that unit price descriptions only had an effect when unit prices were composed of VR schedules.

After completing his Masters degree, he accepted a position providing behavior analysis services for parents and children in the foster care system throughout the state of Florida. His responsibilities involved teaching classes that focused on behaviorally based parenting skills to either foster, adoptive, or biological parents, as well as group home staff. In addition, his responsibilities included providing in-home or on-site training and support for class participants. Aside from working with parents or staff, he also interacted directly with teachers and designed behavioral intervention programs for foster and adoptive children in their classes.

After working in this position for about three years, He decided to pursue his doctorate. He applied to work with Timothy Vollmer at UF and was accepted in the fall of 2003. While at UF he has worked in a variety of areas but has mainly focused his research in the area of assessment and treatment of adult male sex offenders with developmental disabilities. The Seguin Unit in Gainesville focuses on the rehabilitation of both sexual offenders and non-sexual offenders with developmental disabilities. Shortly after beginning to work at the Seguin Unit, a contract between UF and the Seguin Unit was proposed to continue to the work where he would serve as the primary service provider or graduate assistant, with Dr. Vollmer as his supervisor. The Seguin Unit agreed to fund the contract and they are currently ending their third year of the contract.

His dissertation research has generally focused on evaluating the use of the penile plethysmograph with developmentally delayed sex offenders who committed their offense against a child. More specifically, his line of research has mainly involved investigating factors related to assessment outcomes and possible treatment components, as well as generalization and

maintenance issues. Aside from plethysmograph assessments, he has also investigated additional assessment components to address other potentially important variables not captured by arousal assessments. His line of research represents a novel approach in the field of sex offender assessment and treatment and he hopes it will provide a valuable contribution to both the sex offender literature and the behavior analysis literature.