MANIPULATION OF VARIABLES TO INFLUENCE PREFERENCE FOR CHOICE

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by

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Department of Psychology
Abstract

of

MANIPULATION OF VARIABLES TO INFLUENCE PREFERENCE FOR CHOICE

by

Leif Heron Schelin

This study extended research on choice by determining if choice making behavior can be influenced by altering the consequences associated with choice. Participants were 8 undergraduate college students. They were given the opportunity to choose themselves or to have the experimenter choose for them among simple office tasks in 3 different experiments. In the first experiment, the consequences of choosing were made more favorable than the consequences of not choosing. Participants did not respond differentially. In Experiment 2, the consequences of not choosing were made even less favorable. Two of the 3 participants reallocated their responding towards choosing for themselves. In Experiment 3, for participants who showed an initial preference for choice, the consequences of choosing were made less favorable than the consequences of not choosing. Both participants included in Experiment 3 selected to have the experimenter choose for them.
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Within behavior analysis, the word “choice” can be used as a description of behavior or stimulus conditions (Mazur, 2012). Choice could be used to describe a stimulus condition in which there is more than one response available, or as a description of the response itself. For example, if someone is offered Coke or Pepsi, that stimulus condition could be described as a choice. If the person says, “Coke,” that response could also be described as a choice. If choice is defined as engaging in one response when other response alternatives are available, then any response that an organism makes could be considered a choice. A rat in an operant chamber containing only one lever still engages in choice responding. Aside from pressing the lever, the rat can engage in grooming behavior, walk around the chamber, or remain stationary. The response that the rat engages in at any given time will be determined by its learning history with stimuli in the environment and the rat’s current state of deprivation and satiation (i.e., motivating operations; MOs).

Early research suggests that organisms may have an innate preference for choice. Preference for choice in pigeons was examined by Catania and Sagvolden (1980) using a concurrent chain schedule. Subjects were presented with two white keys in an operant chamber. Pecking one of the keys produced a series of three green keys that produced access to grain and a red extinction key. The other white key produced three red extinction keys and one green key. Subjects reliably chose the white key that produced
the three green keys over the white key that produced only one green key even though both alternatives produced access to the same amount of grain. The pigeons had no prior exposure to differential consequences for choice, thus the authors suggested that this might provide evidence for an innate preference for choice.

As was previously stated, the way in which an organism responds depends on their learning history as well as current motivating operations. When more than one response alternative is available, organisms are more likely to emit those responses that in the past have produced the most reinforcement or better outcomes (Hernstein, 1961). Choice-making behavior itself is an operant that may be strengthened or weakened; one may demonstrate a preference for stimulus conditions involving choices because in the past the individual has contacted more reinforcement under such stimulus conditions. For example, one may prefer to make their own selection between soup and salad, because in the past their selection was reinforced (i.e., they enjoyed eating the selected food). On the other hand, one may prefer the waiter to select for them because s/he has a history of obtaining better things when others choose. Suppose an individual is indifferent toward choosing and lets the waiter choose the side dish for him. If he does not enjoy the food selected by the waiter as much as the food he has selected for himself in the past, he may be more likely to choose for himself in the future. Determining if choice-making behavior can be influenced, by altering the consequences associated with choice was the topic of the current study.
Choice as a Treatment for Problem Behavior

The clinical implications of choice have been researched in a variety of different ways, particularly in influencing the behavior of individuals with developmental disabilities. Presenting choice of tasks to individuals with maladaptive behavior has been used as an intervention for decreasing those behaviors (Dunlap et al., 1994; Graff, Libby & Green, 1998; Powell & Nelson, 1997; Romaniuk et al., 2002; Vaughn & Horner, 1997). Dunlap and colleagues (1994) used choice to reduce disruptive behavior in a classroom setting with students with emotional disturbance. They found that providing students a menu of academic tasks to choose from produced higher rates of on-task behavior and lower rates of disruptive behavior relative to situations in which the teacher chose for them. This was also true when the task selected by the teacher was yoked to match the task previously selected by the student. Powell and Nelson (1997) extended the work conducted by Dunlap and colleagues. The authors demonstrated that choice of academic task was effective in reducing disruptive behavior in a student with attention deficit hyperactivity disorder. Vaughn and Horner (1997) also evaluated the efficacy of choice with children who were intellectually disabled. When participants were given their choice of different low preferred activities, rates of disruptive behavior were lower than when the teacher assigned the task for them. When the teacher assigned a high-preferred task, rates of disruptive behavior were the same as when participants were given a choice between high preferred and low preferred tasks.

A study by Romaniuk and colleagues (2002) investigated the effects of choice of task on problem behaviors maintained by escape versus attention in elementary school
students with developmental disabilities. Prior functional analyses determined if the participants’ problem behaviors were maintained by escape or attention. Similar to previous studies, results showed that providing choice of academic task produced a substantial reduction in problem behaviors. However, this was only the case when the function of problem behavior was escape. It is possible that choice is an effective treatment component for behaviors maintained by escape because providing choices reduces the averseness of tasks for individuals with maladaptive behaviors.

**Providing Choices to Increase Desirable Behaviors**

Providing choices has also been explored as a means of strengthening desirable behaviors. Studies that evaluated the effect of choice on response rates have typically shown that the isolated effect of choice does not increase responding (Bambara, Ager, & Kogel 1994; Geckeler, Libby, Graff & Ahern, 2000; Graff, Libby & Green, 1998; Lerman et al., 1997; Parsons, Reid, Reynolds, & Bumgarner, 1990; Waldron-Soler, Martella, Marchand-Martella & Ebey, 2000). For example, Parsons and colleagues (1990) found that rates of vocational task engagement by adults with disabilities were higher in conditions when they were assigned a high preferred (HP) task or given a choice between HP and low preferred (LP) tasks than when they were assigned a low preferred task. Given that there was little difference between engagement in HP tasks in the choice and no-choice conditions, preference for tasks, rather than choice may have been responsible for the difference in rate of responding. Bambara et al. (1994) also looked at the effect of choice on task engagement of adults with severe disabilities. Contrary to prior results, they found no difference in task engagement or off task
behavior between conditions in which participants were assigned a low preferred task or
given the choice between a HP and a LP task.

A study by Lerman and colleagues (1997) investigated how choice of
reinforcement affects task performance of individuals with intellectual disabilities.
Participants were either given their choice of reinforcer or a no-choice condition in which
the reinforcer was yoked to their previous choice. Results showed no difference in task
performance across the choice and no-choice condition. One limitation discussed was the
possibility of a ceiling effect; if the participants were responding as fast as they
reasonably could for the high-preferred item, then they may not have been able to
respond much faster given the added reinforcing value of choice. Graff, Libby and Green
(1998) evaluated the effect of choice of reinforcers on free operant responding of two
individuals with severe disabilities. Contingent on completion of an arbitrary task (e.g.,
picking up dominoes), participants were either given a choice between three different
preferred items, a preferred item selected by the experimenter, or a choice of one of three
identical preferred items. Results showed slightly higher task responding and slightly
lower problem behaviors in the condition in which participants were able to select
between three items, regardless of whether they were different HP items or identical HP
items.

Waldron-Soler and colleagues (2000) investigated the effect of choice on task
responding of preschoolers with and without disabilities. The authors controlled for
possible ceiling effects in previous studies (e.g., Lerman et al., 1997). The authors
suggested that use of HP items might increase responding to a point where the effects of
choice may not be seen. They gave participants the choice of LP items to control for this. No difference between choice and no-choice conditions on rate of responding was found for participants with and without disabilities.

In a more recent study, the effect of choice on task responding using different schedules of reinforcement was evaluated (Tiger et al., 2010). Tiger and colleagues (2010) used fixed ratio (FR) and progressive ratio (PR) schedules with three children with autism. Results showed no substantial difference in task responding between choice and no-choice conditions under the FR schedule. With the PR schedule, two of the three participants showed increased responding in the choice conditions. The third participant was given a concurrent operants evaluation in which he was able to complete tasks that resulted in either choice or no choice of reinforcer. He completed substantially more tasks in the choice condition. This study showed that the effects of choice might be dependent on the schedules of reinforcement that are in effect with available alternatives. The authors suggested that PR schedules might be more sensitive to subtle differences in reinforcement than FR schedules. Research by Tiger and colleagues seems to be the exception to findings from other studies showing that choice alone does not increase responding. This leads to the question of how highly preferred choice is if it does not typically reinforce behavior (result in increased responding).

Preference for Choice

Several studies have investigated preference for choice in different populations (e.g., Catania & Sagvolden 1980; Fenerty & Tiger, 2010). A study conducted by Geckeler and colleagues (2000) compared the effects of choice and no-choice conditions
with single and concurrent operants with children with autism. Participants were put in a situation in which reinforcers were delivered on different schedules contingent on button pressing behavior. No difference in responding was found between conditions in which the participants could choose their reinforcer or a highly preferred item was selected for them. Despite this, in the concurrent operants condition, where participants could select the option to choose their reinforcer or not, participants showed a strong preference for the choice condition. This shows that the effect of choice in the laboratory may only be evident in concurrent operant arrangements. These findings are consistent with previous research that has found preference for choice using concurrent chain arrangements (Brigham & Sherman 1973; Catania & Sagvolden 1980; Fenerty & Tiger, 2010; Fisher, Thompson, Piazza, Crosland & Gotjen, 1997; Lerman et al., 1997; Schmidt, Hanley, & Layer, 2009; Tiger, Hanley & Hernandez, 2006).

Brigham and Sherman (1973) used various methods to try to assess preference for choice in two typically developing kindergarteners. Initially, participants were exposed to conditions where they could press a button that would produce either marbles that could later be exchanged for candy of their choice or candy that had been randomly selected. Rate of responding was similar in both conditions. In the next phase of the experiment, a concurrent operant arrangement was used in which participants could switch between conditions by pressing a button. Participants spent equal time in both conditions. Finally, they were exposed to a condition where they were able to exchange marbles for candy of their choice, or receive candy from a machine that was yoked to their previous choice. Participants allocated more time to the condition in which they were able to choose.
These results demonstrated a preference for choice as the children selected the choice condition more frequently even though the other condition produced the same item that they previously selected. However, it is also possible that MOs affected responding. For example, after contacting an item in the choice condition, preference for that item may decrease such that the no choice condition that was yoked to match the previously selected item would be less favorable.

Fisher and colleagues (1997) manipulated preference for choice in individuals with developmental disabilities. Participants were presented with micro switches that produced a choice condition, a no-choice condition, or extinction. In the first experiment, participants were able to select between their highest and second highest preferred item in the choice condition. In the no-choice condition, the item they previously selected was presented to them. All participants preferred the choice condition. In a second experiment, participants were able to choose between their two lowest preferred items in the choice condition. In the no-choice condition, experimenters presented the participants with their higher preferred item either all or half of the time. Participants preferred the no-choice condition when it produced higher preferred stimuli all or half of the time. This study demonstrated that reinforcer quality is a variable that affects choice responding; choice was preferred when the consequences of choosing and not choosing were similar, however, when not choosing produced better consequences (access to higher preferred items) responding shifted toward the no-choice condition.

Tiger and colleagues, in 2006, conducted a series of experiments examining preference for choice by preschool children using a concurrent-chains arrangement.
Participants were presented with three identical academic worksheets color coded across different conditions. In the choice condition, they were given their choice between five identical edibles as a consequence for completing the worksheet. In the no-choice condition, they were given one edible for completing the worksheet. In the control condition, there was no consequence for completing the worksheet. Half of the participants consistently chose the choice condition even though it ultimately produced the same consequence (one edible to consume) as the no-choice condition.

In a second experiment, preference for more choices as opposed to fewer choices was evaluated by systematically manipulating the number of stimuli from which the participants could choose. Participants who had shown a preference for choice in the first experiment showed a preference for choice between greater numbers of identical items in the second experiment. For example, choice between eight identical items was preferred over choice between two of the same identical items. Participants who did not show a clear preference for choice in the first experiment showed a preference for choice as the number of stimuli from which to choose was increased. For example, choice between ten identical items was preferred over no choice.

Fenerty and Tiger (2010) expanded this research by investigating preference for choice of task versus preference for choice of consequence in typically developing preschoolers. The initial links in the concurrent chains were presented as two index cards. Each card was a different color and corresponded to different conditions. Four different conditions were used. In the consequence choice condition, participants were given a worksheet and given the choice between five identical edibles. In the task-choice
condition, participants were given the choice between five identical worksheets and no choice of edible. In the no-choice condition, participants were prompted to complete a worksheet and given an edible. In the control condition (task only), participants were prompted to complete a worksheet without being given an edible.

In each session, participants completed six trials in which each of the four conditions was paired with one another, similar to a paired choice preference assessment. Results showed that three of the four participants indicated a clear preference for the consequence choice condition. There was no clear preference for the task-choice condition over the no-choice condition. This gives an initial ranking of preference for choosing, choosing edibles being more preferred than choosing tasks.

Schmidt and colleagues conducted a similar study in 2009; however, the possible effect of illusory stimuli (number of items from which to choose) was controlled. Following completion of worksheets, participants were either able to choose between five items, or the experimenter chose for them between the same items. In the no-choice condition, the experimenter selected one of five identical items. In Tiger, Hanley and Hernandez (2006) and Fenerty and Tiger (2010), there was only one item presented in the no-choice condition. Presenting the same number of items in the no-choice condition ruled out the possibility that participants favored the choice condition only because more items were present. Results from Schmidt and colleagues showed that choice was still preferred even when the same number of items was present in the no-choice condition.

Further research is necessary to understand how choice behavior can be altered through creating specific reinforcement histories. Although some individuals demonstrate
a preference for choice irrespective of the consequences of choosing, others may need to be taught to prefer choice.

Only a few studies have manipulated preference for choice by pitting the reinforcing value of choice against other forms of reinforcement (Fisher et al., 1997; Karsina, Thompson, & Rodriguez, 2011). As previously mentioned, Fisher and colleagues (1997) manipulated preference for choice in individuals with developmental disabilities. They found that when participants were given the choice between choosing between two stimuli that were highly preferred and having one of those stimuli chosen for them, they preferred to choose. When they were given the choice between choosing between two low preferred items and receiving one highly preferred item that had been chosen for them, they preferred not to choose. This supports the notion that choice is preferred because it has provided access to higher preferred items or activities; in other words, it is the outcome of the choice behavior, not preference for the behavior of choosing itself, which governs preference for choice. Thus, providing evidence that preference for choice is not innate as previously suggested.

In a later study, Karsina, Thompson, and Rodriguez (2011) looked at preference for choice in typically developing adults. Participants played a game in which they attempted to guess correct numbers to win points. The objective was to select three numbers out of eight in the correct order. In the no-choice condition, participants were given the three correct numbers and attempted to put them in the correct order. In the choice condition, participants selected three numbers out of an array of eight. Only participants who did not show an initial preference for the free-choice condition were
included in the experiment. Results showed that participants shifted their responding towards the choice condition when they earned more points in that condition.

A recent unpublished study (Fernand et al., 2013) extended the work done by Fenerty and Tiger (2010) by looking at preference for choice of task versus consequence using more varied stimuli. It also controlled for the possible effect of magnitude influencing preference in a manner similar to Schmidt and colleagues (2009). In the conditions in which the participant did not get to choose, the experimenter still presented them with an array of the same number of items as when they chose. The experimenter then selected for them from the array. This controlled for a possible limitation of previous studies on preference for choice (e.g., Fenerty & Tiger, 2010; Tiger, Hanley & Hernandez, 2006) that choice making may have been influenced by the number of items presented in no choice conditions. Participants were initially assessed for relative preference of 11 activities and 11 edibles. They were then presented with index cards to choose between in a pairwise fashion. The cards designated different conditions in which the participant or the experimenter would choose the activity or edible consumed in each trial.

Each participant was exposed to three experimental phases that were counterbalanced across participants. The first phase, a baseline condition, was a replication of Fenerty and Tiger (2010) presenting the participant with five identical of their highest preferred edible or activity and choosing for them or letting them choose, depending on the condition. Experiment 2 used five moderately preferred (MP) edibles and activities. When the participant chose, they were able to select between five MP
edibles and activities. When the experimenter chose, they selected one of the five MP items rotated quasi-randomly across trials. In the third experiment, participants were able to select between HP and LP activities and edibles when they chose. Experimenters selected between HP and LP items and activities an equal number of times when they chose.

Results of the study were consistent with Fenerty and Tiger (2010) in that five of the six participants preferred choice verses no choice. They also preferred choice of edible verses choice of task. One of the participants did not show any preference for choice verses no choice. Preferences for all participants were consistent across experimental conditions (identical HP, MP, and HP/LP) and were consistent with Schmidt, Handley and Layer (2009) who found that preference for choice is not controlled by how highly preferred the items from which to choose are, nor by an illusory stimulus. By holding the number of items present across participant choice and experimenter choice conditions constant, Fernand and colleagues (2013) further isolated preference for choice. They also controlled for variety of items. Choices made in everyday life do not typically contain identical items like the ones used in Fenerty and Tiger, and Tiger, Hanley and Hernandez (2006). By evaluating preference in a condition in which identical items were used (Experiment 1), as well as in conditions in which various items were used (Experiments 2 and 3), they showed that preference for choice is not controlled by variety.

Studies on preference for choice (e.g., Catania & Sagvolden 1980; Fenerty & Tiger, 2010; Fernand et al., 2013; Tiger, Hanley & Hernandez, 2006) found choice to be
preferred even when the consequences are identical. Choice is preferred across species. Studies by Fenerty and Tiger (2010) and Ferdinand and colleagues (2013) found that choice of consequence is preferred over choice of task. Further research is needed to determine if choice-making behavior can be influenced in adults.

Manipulating preference for choice has important clinical implications. People need to be able to make choices at times in order to get their needs met. If individuals do not have a preference for choice, it may be useful to develop that preference by providing access to more highly preferred activities contingent on choice-making behavior.

Some previous research has suggested that preference for choice may be innate (e.g., Catania & Sagvolden, 1980). Other research has shown choice to be an operant controlled by the consequences of choice (e.g., Karsina, Thompson, & Rodriguez, 2011). The current study extended research on choice as an operant by evaluating if choice making behavior could be influenced, by changing the consequences associated with choice.

Participants were typically developing college students in a series of experiments. In all of the experiments, participants were given simple office tasks to complete (e.g., stapling). In the first experiment, participants who did not show an initial preference for choice of task were presented with more highly preferred tasks if they chose for themselves. In the second experiment, participants who did not show a preference for choice were presented with a variety of higher preferred tasks if they chose for themselves. In the third experiment, participants who showed an initial preference for
choice were given access to a variety of higher preferred tasks if they selected not to choose.
Within behavior analysis, the word “choice” is used to describe a stimulus condition in which there is more than one response alternative available, as well as the response itself (Mazur, 2012). For example, if someone is offered Coke or Pepsi, that stimulus condition could be described as a choice. If the person says, “Coke,” that response could also be described as a choice. If choice is defined as engaging in one response when other response alternatives are available, then any response an organism makes could be considered a choice.

It has been suggested that choice-making behavior itself is an operant that may be strengthened or weakened; one may demonstrate a preference for stimulus conditions involving choices because in the past the individual has contacted more reinforcement under such stimulus conditions. When more than one response alternative is available, we are more likely to emit those responses that in the past have produced the most reinforcement or better outcomes (Hernstein, 1961). For example, one may prefer to make their own selection between soup and salad, because in the past their selection was reinforced (i.e., the individual enjoyed eating the selected food). On the other hand, one may prefer the waiter to select on their behalf because she has a history of obtaining better things when others choose. Suppose an individual is indifferent toward choosing and lets the waiter choose the side dish for him. If he does not enjoy the food selected by...
the waiter as much as the food he has selected for himself in the past, he may be more likely to choose for himself in the future.

Alternatively, it has also been suggested that preference for choice is innate. Early research by Catania and Sagvolden (1980) examined preference for choice in pigeons using a concurrent chain schedule. Subjects were presented with two white keys in an operant chamber. Pecking one of the keys produced a series of three green keys that produced access to grain and a red extinction key. The other white key produced three red extinction keys and one green key. Subjects reliably chose the white key that produced the three green keys over the white key that produced only one green key even though both alternatives produced access to the same amount of grain. The pigeons had no prior exposure to differential consequences for choice, thus the authors suggested that this might provide evidence for an innate preference for choice.

Several studies have investigated the conditions under which preference for choice is demonstrated using concurrent chain arrangements (Brigham & Sherman, 1973; Fenerty & Tiger, 2010; Fisher, Thompson, Piazza, Crosland, & Gotjen, 1997; Lerman et al., 1997; Schmidt, Hanely, & Layer, 2009; Tiger, Hanley, & Hernandez, 2006). For example, Fisher et al. (1997) manipulated preference for choice in individuals with developmental disabilities. Participants were presented with micro switches that produced a choice condition, a no-choice condition, or extinction. In the first experiment, participants were able to select between their highest and second highest preferred item in the choice condition. In the no-choice condition, the item they previously selected was presented to them. All participants preferred the choice condition. In a second
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In a second experiment, preference for more choices as opposed to fewer choices was evaluated by systematically manipulating the number of stimuli from which the participants could choose. Participants who had shown a preference for choice in the first experiment showed a preference for choice between greater numbers of identical items in the second experiment. For example, choice between eight identical items was preferred
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Only a few studies have manipulated preference for choice by pitting the reinforcing value of choice against other forms of reinforcement, Fisher et al. (1997) as previously mentioned, and a more recent study conducted by Karsina, Thompson, and Rodriguez (2011). Karsina, and colleagues looked at preference for choice in typically developing adults. Participants played a game in which they attempted to guess numbers in order to win points. In the no-choice condition, participants were given the three correct numbers and had to put them in the correct order. In the choice condition, participants had to select the correct three numbers out of an array of eight. Only participants who did not show an initial preference for the free-choice condition were used in the experiment. Participants shifted their responding to the choice condition when they earned more points in that condition.

Further research is necessary to understand how choice behavior can be altered through creating specific reinforcement histories. Although some individuals demonstrate a preference for choice irrespective of the consequences of choosing, others may need to
be taught to prefer choice. Manipulating preference for choice has important clinical implications. People need to be able to make choices at times in order to get their needs met. If individuals do not have a preference for choice, it may be useful to develop that preference by providing access to more highly preferred activities contingent on choice-making behavior.

Some previous research has suggested that preference for choice may be innate (e.g., Catania & Sagvolden, 1980). Other research has shown choice to be an operant controlled by the consequences of choice (e.g., Karsina, Thompson, & Rodriguez, 2011). The current study extended research on choice as an operant by evaluating if choice making behavior could be influenced, by changing the consequences associated with choice.

Participants were typically developing college students in a series of experiments. In all of the experiments, participants were given simple office tasks to complete (e.g., stapling). In the first experiment, participants who did not show an initial preference for choice of task were presented with more highly preferred tasks if they chose for themselves. In the second experiment, participants who did not show a preference for choice were presented with a variety of higher preferred tasks if they chose for themselves. In the third experiment, participants who showed an initial preference for choice were given access to a variety of higher preferred tasks if they selected not to choose.
Chapter 3

EXPERIMENT 1

The purpose of this experiment was to determine if choice-making behavior could be increased in individuals who did not initially show a preference for choice. During a manipulation phase, participants were allowed to select between more highly preferred tasks when they selected to choose their task versus the experimenter choosing for them.

Methods

Participants and Setting

Participants were 3 undergraduates: 1 male, 2 females, ages 18-22, recruited from California State University, Sacramento. They were either recruited through professors offering research experience, or word of mouth from other students.

Research sessions were conducted on the California State University, Sacramento campus in a research laboratory room, measuring approximately 7’ x 7’ including only a table, chairs and the materials for the experiment. A small hand held video camera was used to record sessions for purposes of data collection.

Assessments

Prior to starting sessions, participants underwent a sampling procedure with all of the tasks used in the experiment. They were instructed to complete each one. The experimenter gave feedback or modeled how to complete the task as needed. Participants were also informed that they could ask questions at any time if they were unsure of how to complete a task. Activities consisted of 12 basic office tasks: stapling, hole punching,
sharpening pencils, putting paper in sheet protectors, laminating, recycling, removing staples, stuffing envelopes, opening envelopes, reinforcing punch holes, making a rubber band ball, and straightening paper clips.

At the beginning of each experimental day, participants were asked to rank all of the tasks from most to least preferred. They were instructed to put a “1” next to their favorite task, a “2” next to their second favorite and so on until they got to “12” (See Appendix A). This was done to assess relative preference and determine the items to be used in sessions for that day.

**Procedure**

Trials involved a concurrent chain procedure with cards presented in a pairwise fashion similar to a paired choice preference assessment (Fisher et al., 1992). Within each session, index cards with textual descriptions of both experimental conditions (“I choose task” and “Experimenter chooses task”) were presented. Selection of one of the cards was the initial link in the response chain ending in completion of the task. Text was printed in the center of each card.

Each trial began when two different cards were placed in front of the participant on the table approximately three inches apart. Participants were then asked, “Which one would you like?” Once the participant made a selection by pointing to one of the cards or vocally indicating their selection, the other card was removed from sight, and the card selected was moved to the top of the table. The participant was then presented with three different cards with three different tasks written on them. Tasks varied across experimental conditions.
If the card stated that the participant chooses the task, the experimenter said, “Ok, go for it” or other similar statement and allowed him or her to choose. If the card stated that the experimenter chooses, the experimenter gestured to one of the tasks and said, “I choose this one.” The experimenter selected tasks in a quasi-random fashion across trials by selecting a different task each time until all tasks were selected and then started over. Once the task was selected, other cards were removed and the card corresponding to the selected task was placed in front of the participant with any necessary materials (e.g., paper, stapler). The participant was then instructed to complete the task. Once the task was completed, the participant was given mild praise and materials were removed. Tasks took approximately 10-30 seconds to complete.

**Experimental Design**

Preference for choice was manipulated by altering the items within the array using an ABA design. The A phase was a baseline phase in which both experimenter choice and participant choice resulted in similar outcomes. The B phase was a manipulation phase where participant choice resulted in access to more preferred tasks than experimenter choice. Sessions were conducted in each condition until stability criterion was reached. Stability criterion used required at least 4 data points in each phase. The final data point could not represent a new high or low point, and the data could not show an upward or downward trend based on visual inspection.

**Baseline**

In the baseline phase (A) an array of three high preferred (HP) tasks were presented. The array was the same regardless of who chose. When the experimenter
selected, he alternated between different HP items across trials. Ten trials were held per session and sessions were conducted until stability criterion was reached.

**Manipulation Phase**

In the manipulation phase (B), items presented in the array were varied depending on who was choosing. When participants selected, they selected between three HP tasks. When the experimenter selected, he selected between three low preferred (LP) tasks. Experimenter selection was quasi-randomized across trials.

**Response Measurement and Interobserver Agreement (IOA)**

Each trial consisted of participants being presented with two index cards, selection of one of the options by pointing or vocalization, selection of task by the experimenter or participant, and completion of the task. Experimenters recorded which condition was chosen on each trial. The number of times each condition was selected was then divided by the total number of trials and multiplied by 100 to get a percentage of selection for each condition. Percentage of selection was then graphed for each session for visual inspection of the data.

A second observer independently scored each trial for IOA. IOA was calculated by dividing the number of trials in agreement by the total number of trials. A trial was scored as an agreement if both observers recorded the same initial link selection. IOA data for Participant 1, 2 and 3 was recorded during 36%, 47%, and 62% of sessions, respectively. Mean percentage of agreement was 96% (range, 90-100%), 99% (range, 90-100%), and 100%, for Participant 1, 2, and 3, respectively.
Treatment Integrity (TI)

An independent observer also recorded whether procedures were correctly followed on each trial. Observers were trained on procedures. The experimenter demonstrated the correct technique and instructed them to score trials in which everything was done correctly with a (+), and trials in which there was an error with a (-). TI was calculated by dividing the number of trials in which procedures were conducted with fidelity by the total number of trials. For Participant 1, TI was recorded for 36% of sessions with an average integrity of 98% (range, 90-100%). For Participant 2, TI was recorded for 47% of sessions with an average integrity of 96% (range, 90-100%), and for Participant 3, TI was recorded for 62% of sessions with an average integrity of 98% (range, 90-100%).

Results

Results are shown in Figures 1, 2 and 3 for Participants 1, 2, and 3, respectively. For Participant 1, the choice and no choice conditions were undifferentiated across all three experimental phases. In the first baseline phase, she selected the choice condition an average of 50%, and the no choice condition an average of 50%. In the manipulation phase, she selected the choice condition an average of 48% (range, 40-60%), and the no choice condition an average of 52% (range, 40-60%). In the second baseline phase, she selected the choice condition an average of 52% (range, 50-60%), and the no choice condition an average of 48% (range, 40-50%).

Responding was also undifferentiated for Participant 2 between the choice and no choice conditions. In the first baseline phase, he selected the choice condition an average
of 50% (range, 30-60%), and the no choice condition an average of 50% (range, 40-70%). In the manipulation phase, he selected the choice condition an average of 58% (range, 50-70%), and the no choice condition an average of 42% (range, 30-50%). In the second baseline phase, he selected the choice condition an average of 52% (range, 50-60%), and the no choice condition an average of 48% (range, 40-50%).

For Participant 3, the choice condition was slightly differentiated from the no choice condition across experimental phases. In the first baseline phase, a preference for choice was not observed with the choice condition being selected an average of 58% (range, 30-70%), and the no choice condition an average of 42% (range, 30-70%). In the manipulation phase, preference for choice increased; the choice condition was selected an average of 72% (range, 60-80%), and the no choice condition an average of 28% (range, 20-40%). In the second baseline phase, she selected the choice condition an average of 68% (range, 60-90%), and the no choice condition an average of 32% (range, 10-40%).

Figure 1. Results for Participant 1
Figure 2. Results for Participant 2

Figure 3. Results for Participant 3
Discussion

Findings from Experiment 1 differed from those of previous studies that demonstrated a preference for choice even when the consequences of choosing and not choosing were identical (Fenerty & Tiger, 2010; Tiger, Hanley & Hernandez, 2006). None of the three participants showed a strong initial preference for choice in the baseline condition in which the consequences for choosing and not choosing were the same. One difference that may account for the discrepancy is that many of the previous studies (e.g., Fenerty & Tiger, 2010; Tiger, Hanley & Hernandez, 2006) included children as participants. Children may be exposed to less choices in their everyday lives and have histories of choosing between more preferred items (e.g., treats, movies, etc.). This may explain a stronger preference for choice in children. Adults face a multitude of choices in their everyday lives. Choice can also be effortful, especially when there are many consequences of choice to consider.

Participants 1 and 2 showed no shift in responding during the manipulation phase when participant choice resulted in access to the three top ranked tasks from the preference assessment conducted at the beginning of each day, and there was only a negligible increase in preference for choice for Participant 3. One explanation is that there was not a strong difference in preference between the highest and lowest ranked tasks. Moreover, participants may have been choosing “experimenter choice” to gain access to a greater variety of tasks. Alternating between “experimenter choice” and “participant choice” produced more variety in the tasks that were presented. Because the tasks included in the experiment were office tasks that are monotonous in nature, it is
possible that variety was a controlling variable for how participants allocated their responding (alternating between conditions).

One limitation of this study is that the preference assessment was administered at the beginning of each experimental day. This meant that multiple sessions were conducted using the same stimuli. Preference may have shifted across sessions. In order to control for this, preference assessments were conducted before each session in Experiments 2 and 3.
Chapter 4

EXPERIMENT 2

Participants in Experiment 1 did not show a change in responding when the consequences for choosing and not choosing were changed. One factor that may have accounted for this is that participants did not have a substantial difference in preference between the office tasks that were used. Another factor is that they may have been selecting to have the experimenter choose so that they could engage in a greater variety of tasks. Preference assessments were only completed once each experimental day, so participants may have selected experimenter choice if they were tired of the three HP tasks that were presented when they selected to choose for themselves. In the second experiment, preference assessments were administered before each session. During the manipulation phase, the experimenter selected between three identical cards representing the lowest preferred task. These changes were made to increase the likelihood that participants would change their responding during the manipulation phase.

Methods

Participants and Setting

Participants were 3 female undergraduates, ages 18-24 recruited from California State University, Sacramento. They were either recruited through professors offering research experience, or word of mouth from other students. Research sessions were conducted on the California State University, Sacramento campus in a research laboratory room, measuring 7’ x 7’ including only a table, chairs and the materials for the
experiment. A small hand held video camera was used for purposes of data collection. Participants who did not show an initial preference for choice in baseline were selected for Experiment 2. Baseline conditions were administered for five participants. Those that did not show an initial preference for choice completed Experiment 2. Those that did show an initial preference for choice completed Experiment 3 (described below).

**Assessments**

Assessments used were the same as those used in Experiment 1 except that preference assessments were administered before each session.

**Procedures**

Procedures were the same as those used in Experiment 1 with the exception of the manipulation phase; the experimenter chose between three identical cards representing only one LP task on trials that participants selected to have the experimenter choose for them. The experimenter selected one of the three cards quasi randomized across location. When the participant chose, they were presented with three cards representing the three highest preferred tasks from the preference assessment. They then selected one of these cards and completed the task.

**Response Measurement, Interobserver Agreement (IOA) and Treatment Integrity (TI)**

Response measures were the same as those from Experiment 1 and IOA was calculated in the same manner. IOA for Participant 4 was recorded for 43% of sessions with an average agreement of 100%. For Participant 5, IOA was recorded for 45% of
sessions with an average agreement of 100%, and for Participant 6, IOA was recorded for 66% of sessions with an average agreement of 99% (range, 90-100%).

TI was collected in the same manner as in experiment 1. For Participant 4, TI was recorded for 43% of sessions with an average integrity of 100%. For Participant 5, TI was recorded for 45% of sessions with an average integrity of 99% (range, 90-100%). For Participant 6, TI was recorded for 66% of sessions with an average integrity of 96% (range, 80-100%).

**Results**

Results are shown in Figures 4, 5, and 6, for Participants 4, 5, and 6, respectively. Participants who were included in Experiment 2 were selected because they did not show a preference for choice in baseline. Participants 4 and 5 showed a distinct shift in responding during the manipulation phase, favoring the choice condition. Participant 6 did not show a change in responding across experimental phases.

In the first baseline phase, Participant 4 selected the choice condition an average of 62% (range, 50-100%), and the no choice condition an average of 38% (range, 0-50%). In the manipulation phase, she selected the choice condition an average of 94% (range, 80-100%), and the no choice condition an average of 6% (range, 0-20%). In the second baseline phase, she selected the choice condition an average of 93% (range, 70-100%), and the no choice condition an average of 7% (range, 0-30%).

Participant 5 showed similar responding to participant 4. In the first baseline phase, she selected the choice condition an average of 51% (range, 30-70%), and the no choice condition an average of 49% (range, 30-70%). In the manipulation phase, she
selected the choice condition an average of 84% (range, 40-100%), and the no choice condition an average of 16% (range, 0-60%). In the second baseline phase, she selected the choice condition an average of 35% (range, 0-70%), and the no choice condition an average of 65% (range, 30-100%).

Participant 6 responded in a similar manner to participants from Experiment 1. There was minimal differentiation in baseline, no change in the manipulation phase, and data became even more undifferentiated in the second baseline. In the first baseline phase, she selected the choice condition an average of 49% (range, 30-60%), and the no choice condition an average of 51% (range, 40-70%). In the manipulation phase, she selected the choice condition an average of 60% (range, 50-70%), and the no choice condition an average of 40% (range, 30-50%). In the second baseline phase, she selected the choice condition an average of 48% (range, 40-50%), and the no choice condition an average of 52% (range, 50-60%).

![Figure 4. Results for Participant 4.](chart.png)
Figure 5. Results for Participant 5.

Figure 6. Results for Participant 6.
Discussion

Results from Experiment 2 provide some support that choice-making behavior is influenced by the consequences of choice. Participants who did not initially have a preference for choice changed their responding when selecting to choose produced more favorable consequences. These findings support previous research by Karsina, Thompson, and Rodriguez (2011). However, Participant 6 selected the experimenter choice condition nearly equal to the participant choice condition across experimental phases. In spite of preference assessments being conducted before each session, it is possible there was not a substantial difference in preference between the tasks that were used in the experiment. Were the tasks used substantially higher preferred than others, Participant 6 might have shifted her responding as well.

For the two participants who shifted their responding during the manipulation phase, (Participants 4 and 5) only Participant 5 shifted her responding back to near baseline levels in the second baseline phase. Participant 4 continued to select the participant choice condition even when there were no longer differential consequences for choosing and not choosing. A potential explanation is that Participant 4 developed a preference for choice after being exposed to differential consequences for choosing and not choosing. To the extent that this might be true, clinical implications are that a preference for choice could be developed for people who do not prefer to choose by exposing them to differential consequences. As this was only seen with one participant, further research is needed to determine what learning history will produce this change in preference.
Given the possibility that responding may not revert back to baseline levels following a history of differential consequences for choosing versus not choosing, future research should use experimental designs that are more likely to show experimental control, such as a multiple baseline across participants design. A limitation of the current study is that experimental control was not demonstrated with all participants; thus, any conclusions drawn remain speculative.

Participant 5 showed substantial variability in the second baseline phase. Her responding eventually stabilized at levels slightly lower than the initial baseline. Her pattern of responding may have resulted from repeated exposure to the experimental conditions (with substantially more sessions than other participant) rather than a reflection of her true preference.
Chapter 5

EXPERIMENT 3

Methods

Participants and Setting

Participants were 2 female undergraduates aged 18-24 recruited from California State University, Sacramento. They were either recruited through professors offering research experience, or word of mouth from other students. Research sessions were conducted in the same location as in Experiment 1 and 2. Participants were selected for Experiment 3 who showed an initial preference for choice during baseline conditions.

Procedures

The same procedures previously described were in effect; however, conditions in the manipulation phase were the opposite of those in Experiment 2. In the participant choice condition, participants selected one of three identical cards representing the LP task. When the experimenter chose, he selected quasi-randomly between the three HP tasks.

Response Measurement, Interobserver Agreement (IOA) and Treatment Integrity (TI)

The response measures and IOA calculations were the same as those in Experiments 1 and 2. IOA was calculated by dividing the number of trials in agreement by the total number of trials. A trial was scored as an agreement if both observers recorded the same initial link selection. For Participant 7, IOA was recorded on 71% of
sessions with an average agreement of 100%. For Participant 8, IOA was recorded on 76% of sessions with an average agreement of 100%.

An independent observer recorded whether procedures were correctly followed on each trial. Observers were trained on procedures and instructed to score trials in which everything was done correctly with a (+), and trials in which there was an error with a (-). TI was calculated by dividing the number of trials in which procedures were conducted with fidelity by the total number of trials. For Participant 7, TI was recorded for 71% of sessions with an average integrity of 98% (range 90-100%). For Participant 8, TI was recorded for 76% of sessions with an average integrity of 97% (range, 90-100%).

**Results**

Results are shown in Figures 7 and 8, for Participants 7 and 8, respectively. For Participant 7, in the first baseline phase, she selected the choice condition an average of 80% (range, 70-90%), and the no choice condition an average of 20% (range, 10-30%). In the manipulation phase, she selected the choice condition an average of 30% (range, 10-90%), and the no choice condition an average of 70% (range, 10-90%). In the second baseline phase, she selected the choice condition an average of 96% (range, 90-100%), and the no choice condition an average of 4% (range, 0-10%).

For Participant 8, in the first baseline phase, she selected the choice condition an average of 75% (range, 70-90%), and the no choice condition an average of 25% (range, 10-30%). In the manipulation phase, she selected the choice condition an average of 13% (range, 10-20%), and the no choice condition an average of 87% (range, 80-90%). In the
second baseline phase, she selected the choice condition an average of 80% (range, 70-100%), and the no choice condition an average of 20% (range, 0-30%).

Both participants showed an initial preference for choice during baseline conditions. When conditions were changed, both participants changed their responding so that the “no choice” condition was selected the majority of the time. When conditions were changed back so that the consequences for choosing and not choosing were the same, responding returned to baseline levels with both participants preferring the choice condition.

*Figure 7.* Results for Participant 7.
Discussion

Results from Experiment 3 showed that choice-making behavior can be altered by changing the consequences associated with choice. Both of the participants preferred access to HP tasks and variety over choice in the manipulation phase. For both of the participants, the shift was not sustained; once the consequences of choosing and not choosing reverted back to being equal, both participants went back to selecting the choice condition more often. These data support the notion that the outcome of choice behavior influences one’s preference for choice not merely preference for the behavior of choosing itself. If preference for choice were innate, we would expect participants to continue to favor choice even when not choosing produced more favorable consequences.

Findings from this experiment support previous research from Fisher and colleagues (1997) who also found that participants selected not to choose when selection of the “no choice” condition produced access to higher preferred consequences.
These experiments add to the growing body of literature on choice. Choice is preferred in some cases, though not consistently. The lack of strong preference for choice is consistent with research that has shown that choice alone is not sufficient to increase responding (Bambara, Ager, & Kogel 1994; Geckeler, Libby, Graff & Ahern, 2000; Graff, Libby & Green, 1998; Lerman et al., 1997; Parsons, Reid, Reynolds, & Bumgarner, 1990; Tiger, Toussant, & Roath, 2010; Waldron-Soler, Martella, Marchand-Martella & Ebey, 2000). Only 2 of the 8 participants in this study showed preference for choice when the consequences were identical. The other 6 participants showed indifference between choosing and not choosing.

Adults may face many choices throughout each day. Choices can have serious consequences such as choosing a house, a partner, or a job. Significant effort can be involved in making these decisions, such as learning about different houses or cars to buy. An adult is also likely to have a learning history with adverse consequences for choices (such as a bad car, house, or relationship). Such negative consequences could result in decreased choice-making behavior or inaction when faced with difficult choices.

Adults are also faced with many meaningless choices. For example, if someone is making a purchase at a store and they are asked “Debit or credit?” and there is no fee, there is no differential consequence for either response. People are faced with the effort of making a choice that will not produce any difference in outcome for them. Some
people will tell the cashier that they do not care and ask the cashier to choose for them. In this study, some participants may have selected to have the experimenter choose some of the time because it was less effortful.

Children, on the other hand, are not exposed to as many choices in their everyday lives. Children typically encounter situations that are arranged by adults (e.g., parents or teachers). Opportunities to choose may be among more preferred things such as new toys or ice cream. This type of learning history may lead children to prefer choice more because it has typically produced more highly preferred consequences. This may explain the discrepancy between the responding of the adults in this study and the children in previous research (e.g., Fenerty & Tiger, 2010; Fernand et al., 2013; Tiger, Hanley & Hernandez, 2006). Karsina and colleagues (2011) was one of the few studies to look at preference for choice in typically developing adults. Only 4 of the 11 participants showed preference for choice when the consequences were equal. This is similar to findings from this study in which 2 of the 8 participants showed initial preference for choice.

Conditions used in this study may partially explain why preference for choice was not consistently demonstrated. The type of tasks that were used in this study were selected because they were discreet, could be set up in a controlled manner in the lab, and were likely to include tasks that were low preferred or nonpreferred. Office tasks are typically viewed as being boring and repetitive, so people may have a strong preference to complete the fun ones and avoid the more boring ones. In the first experiment, none of the participants increased their choice making to avoid completing one of the low preferred tasks selected by the experimenter. Tasks may be much more aversive or
preferred if they are completed at a job for eight hours a day, five days a week, however, such conditions are difficult to contrive in a laboratory setting. Self-report from some of the participants indicated that they selected to have the experimenter choose when they could not decide or did not want to decide what to pick. All of the participants did prefer to choose at times and not to choose at other times.

Conditions in Experiments 2 and 3 were changed to increase the likelihood of more disparity between the consequences of choosing and not choosing such that we could evaluate whether the consequences of choosing affects one’s preference for choice. In the manipulation phase, one of the conditions remained selection between three HP tasks and the other condition (depending on which experiment) included selection of three identical cards representing only one LP task. However, a limitation of this is that it is unclear whether the change in responding by participants in Experiments 2 and 3 were due to the tasks being more highly preferred or simply accessing a greater variety of tasks.

One possible confound in the design of this study is that participants may not have given accurate responses when filling out their questionnaires. For example, during the manipulation phase, participants may have altered their responding on the preference assessments by moving HP tasks to the bottom and LP tasks to the top rather than rank ordering the tasks based on their actual preference, in which case, responding during experimental conditions would not be an accurate representation of participants’ preference for choosing versus not choosing. However, had this been the case, responding would likely have shifted in one direction briefly, then back towards the other
condition once participants started providing inaccurate information on preference assessments. This pattern of responding was not seen in the data, so it is unlikely that participants engaged in this behavior.

This study demonstrated that choice-making behavior can be influenced. Specifically, results of Experiments 2 and 3 support those of previous research showing a decrease in selection of conditions with more choices (Fisher et al., 1997) or an increase (Karsina et al., 2011) depending on how the consequences of choosing were manipulated. This supports the notion that choice is an operant, which has clinical implications for individuals who show indiscriminate responding when faced with response alternatives that have differential consequences. Exposing an individual to a situation in which stimulus conditions with and without choices produce more and less favorable outcomes, respectively, could be useful in teaching them to advocate for themselves and allocate their responding to those conditions that will produce the most favorable outcomes.

Another finding from this study is that out of the four participants who shifted their responding during manipulation conditions, three of them returned to baseline levels when the consequences of choosing and not choosing were the same again. Both of the participants who initially preferred to choose went back to selecting the participant choice condition in the second baseline. One of the two participants who shifted her responding to participant choice during the manipulation phase continued to do so when conditions were returned to baseline levels. This is an indication of the type of learning history that may influence a person’s preference to choose. Determining what types of situations lead
to a preference for choice can be useful in developing strategies to teach choice making behaviors.

Overall, results from this study showed that choice-making behavior can be influenced by altering the consequences associated with choice. This study adds to the growing body of research on choice as an operant. Understanding choice is important because it adds to our ability to predict and influence behavior. In general, it can help us understand more about why organisms engage in the responses that they do, as well as teaching people to respond in a manner that will be most beneficial to themselves and those around them.
Appendix A
Preference Assessment

Initials: ________________ Date: ________________

Please rank the tasks in order of how much you would like to complete each of them. Put a “1” next to the one that you like the most or would most like to complete today, a “2” next to your second favorite and so on until all 12 tasks have been ranked. Please let the experimenter know if you have any questions or are unsure of what one of the tasks entails.

<table>
<thead>
<tr>
<th>Task</th>
<th>Rank</th>
<th>Task</th>
<th>Rank</th>
<th>Task</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stapling</td>
<td></td>
<td>Hole punching</td>
<td></td>
<td>Laminating</td>
<td></td>
</tr>
<tr>
<td>Sharpening Pencils</td>
<td></td>
<td>Unstapling</td>
<td></td>
<td>Sheet protectors</td>
<td></td>
</tr>
<tr>
<td>Reinforcing holes</td>
<td></td>
<td>Stuffing envelopes</td>
<td></td>
<td>Rubber band ball</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td></td>
<td>Opening envelopes</td>
<td></td>
<td>Straightening paper clips</td>
<td></td>
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</tbody>
</table>
Appendix B

Data Sheet

Participant initials: _______ Date: __________ Session #_______

Phase______ Evaluator: ________ Primary/Reliability Duration_______

<table>
<thead>
<tr>
<th>Trial</th>
<th>Activity</th>
<th>TxInt (+-)</th>
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</thead>
<tbody>
<tr>
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<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>2. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>3. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>4. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>5. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>6. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>7. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
<tr>
<td>8. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
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</tr>
<tr>
<td>9. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
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</tr>
<tr>
<td>10. Choice No</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
</tr>
</tbody>
</table>

Total: Choice_____ No______

Task:

1. 7.
2. 8.
3. 9.
4. 10.
5. 11.
6. 12.
Appendix C

Consent Form

Consent to Participate in Research Titled: Manipulation of Variables to Influence Preference for Choice

I ______________________ consent to participate in research conducted by Leif Schelin, which will involve the following procedures:

I will be given the opportunity to choose between conditions written on index cards presented in pairs. The conditions will involve situations where I am permitted the opportunity to select my choice of task (simple office tasks).

Sessions will take place in the Pediatric Behavior Research Lab in Amador Hall and will require approximately five 75 minute sessions of my time. Sessions may be videotaped for purposes of data collection and review. Video tapes will only be viewed by experimenters conducting the study. Data gathered in the investigation may be used in scientific journals or for presentation in professional conferences. No information will be included that could be used to identify me.

I understand that this research may have the following benefits:

Opportunities to make choices between items have often been suggested to reduce problematic behaviors and promote independence. Little research has been directly conducted to evaluate the reasons behind why providing choices is an effective procedure. This research is beneficial in that is attempts to evaluate the role of preference for specific items during choice-making opportunities when they are presented as tasks or as consequences. Further, this research may help to support the further use of providing choices, both when giving task assignments and when giving consequences.

I understand that the research may involve the following risks:

I will be asked to do simple office tasks, which may include lesser preferred activities. However, the design of the study is such that none of the tasks are non-preferred or aversive. Participants will also have the opportunity to select more highly preferred stimuli. At any point during the study, if I no longer wish to participate, I may withdraw with no consequence.

This information was explained to me by Leif Schelin. I understand that he will answer any questions I may have now or later about this research. Leif can be reached at leifschelin2@gmail.com.

Signature: __________________________________________ Date: _______________

I also consent to my sessions being videotaped:
Signature: __________________________________________ Date: _______________
Appendix D

Debriefing Form

Purpose
The purpose of this study is to manipulate the consequences produced when making a choice in order to identify if one’s preference for the items they’re selecting from influence motivation to choose versus forego choice. This information may help us better understand the conditions necessary to promote choice-making behavior which may have implications for how we teach individuals with intellectual or developmental disabilities to make choices for themselves. This is important because people need to be able to tolerate situations in which less choices are available. For example, having fun may be preferred over doing schoolwork because there are less options available when doing schoolwork. Exposing individuals more favorable conditions with less choices may make them more tolerant of similar situations in their everyday lives.

Hypotheses and Supporting Research
Previous research by Fenerty and Tiger (2010) showed that choice is preferred when the consequences of choice are identical. Fisher, Thompson, Piazza, Crosland and Gotjen (1997) manipulated preference for choice in individuals with developmental disabilities. They found that choice was preferred when the consequences of choosing and not choosing were similar. Alternatively, when not choosing produced better consequences (access to more highly preferred items) responding shifted towards the no-choice condition. It is hypothesized that the participants in this study will initially prefer choice when the consequences of choosing and not choosing are identical. When not choosing produces more highly preferred outcomes, responding will shift towards not choosing.

Contact Information
If you would like further information about the study, would like to know the overall results after data has been collected, or have any questions regarding the experiment, please contact Leif Schelin at leifschelin2@gmail.com at your convenience.

Closing
Do you have any questions?
Thank you for participating!
REFERENCES


