Chapter 19
Chaining

Topics Covered Within This Chapter

Topics
Behavior Chains
Task Analysis
Chaining Procedures

Behavior Chains

A behavior chain is a set of responses that are linked together such that the completion of all the responses results in the terminal reinforcer. Chain schedules include (a) two or more schedules of reinforcement, (b) that are signaled by discriminative stimuli, and (c) presented successively (i.e., one at a time) in a specific order. The important feature of a behavior chain is the way in which the stimulus change functions as both a conditioned reinforcer for the previous response and a discriminative stimulus for the next response. For example, a pigeon in an operant chamber pecks a key that is illuminated red five times (FR 5) and the key changes from red to blue. The change in key color to blue serves as a conditioned reinforcer for completing the FR 5 schedule *and* as a discriminative stimulus for the impending FR 2 schedule. The pigeon pecks the key two times and the key changes from blue to green. The change in key color serves as a conditioned reinforcer for completing the FR 2 schedule *and* as a discriminative stimulus for the impending FR 3 schedule. The pigeon pecks the key three times and food is delivered. All links in the chain must be completed prior to the delivery of the terminal reinforcer. In this example, the

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https://doi.org/10.1007/978-3-031-09932-8_19

response (i.e., key peck) remains consistent across the chain schedule. This is referred to as a homogeneous chain (Pierce & Cheney, 2017). In contrast, most applied examples of behavior chains include different responses, which is referred to as a heterogeneous chain. An example of a behavior chain appropriate for an applied setting could be making a sandwich. The terminal reinforcer of consuming the sandwich is not available until the end of the chain. The first step might be to pull out two pieces of bread. The bread on the plate serves as a conditioned reinforcer for pulling out the bread *and* as a discriminative stimulus to open the peanut butter jar. After opening the jar, the opened jar would serve as a conditioned reinforcer for opening the jar *and* as a discriminative stimulus to pick up the knife. After picking up the knife, the knife in hand would serve as a conditioned reinforcer for picking up the knife *and* as a discriminative stimulus to spread peanut butter on the bread. After spreading the peanut butter, the peanut butter on the bread would serve as a conditioned reinforcer for spreading the peanut butter *and* as a discriminative stimulus to put the other slice of bread on top of the piece with peanut butter. Placing the second piece of bread on top of the piece with peanut butter results in access to the terminal reinforcer of consuming the sandwich. In this example, the schedule of reinforcement for each link in the chain was an FR 1.

Task Analysis

A task analysis specifies each response in a behavior chain. Stress to your supervisees the importance of creating a task analysis with adequate precision to ensure that their client will successfully master the chain of responses. That is, for some clients, breaking responses into more steps may be necessary, whereas other clients may respond correctly when fewer steps are taught. For example, the step described above as pulling out two pieces of bread could be further specified to be multiple steps of (a) untwisting the tie, (b) reaching into the bag, (c) pulling out two pieces of bread, (d) twisting the bread bag, and (e) returning the twist tie onto the bag. The level of specificity should be directly tailored to the client's skill level. According to Cooper et al. (2020), there are four methods that can be employed to create a task analysis. These include (a) observing someone else complete the chain of responses, (b) completing the chain of responses yourself, (c) recruiting input from an expert, and (d) trial and error. Recommend that your supervisees employ trial and error in conjunction with one of the other strategies rather than as an isolated strategy.

Chaining Procedures

Once the task analysis has been developed, the steps for effectively implementing a chaining procedure include selecting an assessment strategy, selecting a method of chaining, and identifying teaching procedures.

Assessment

The two assessment probe procedures used to collect data on responding during a behavior chain include the single-opportunity method and the multiple-opportunity method (Alexander et al., 2015). These probes can be conducted before intervention to serve as a baseline measure, but also during intervention as a measure of progress. If these probes are used during intervention, this will result in two types of sessions being conducted during the intervention phase. Specifically, treatment sessions will include teaching procedures (e.g., prompting), but will not be included in the primary graph used for decision-making, whereas probe sessions will not include teaching procedures, but the data collected during these sessions will be included in the primary graph.

When using the single-opportunity method, the clinician would provide the learner with the opportunity (e.g., wait 3 seconds) to complete the first step in the chain. If the learner completed the step, the clinician would record this as correct and provide the learner with opportunity to complete the next step. If at any point during the assessment the learner responds incorrectly or does not respond at all, the clinician will record the step as incorrect and terminate the assessment. When using the multiple-opportunity method, the clinician would provide the learner with the opportunity to complete the first step in the chain. If the learner completed the step, the clinician would record this as correct and provide the learner with the opportunity to complete the next step. If the learner responds incorrectly or does not respond at all, the clinician will complete the step and provide the learner with the opportunity to complete the next step. This would continue until the entire chain is complete.

When selecting an assessment procedure, your supervisee should evaluate the pros and cons of both assessments to determine which would be more appropriate for the given situation. The single-opportunity method is time-efficient and limits the extent to which the learner's behavior is impacted by the assessment, but less information is gathered during the assessment. The multiple-opportunity method requires more time to conduct but provides more information and data for the clinician to use when making decisions.

Methods of Chaining

There are three primary procedures used for increasing engagement in behavior chains including forward chaining, backward chaining, and total task presentation (Cooper et al., 2020).

For forward chaining, the learner is first taught to engage in the first step of the chain while the clinician completes the rest of the steps in the chain. Once the learner meets mastery for the first step, they are taught to complete the second step while the clinician completes the rest of the steps in the chain. This continues until the learner can engage in the entire chain independently.

For backward chaining, the clinician completes all the steps in the chain until the last step, which the learner is taught to complete. Once the learner meets mastery for the last step, the clinician completes all the steps in the chain until the last two steps, which the learner must complete. This continues until the learner can engage in the entire chain independently.

For total task presentation, the learner is taught to engage in all steps of the chain. This procedure typically includes a time-delay prompt which allows the learner the opportunity to complete each step independently.

Using the example of bed making with a 3-second time-delay to physical guidance, we will describe the progression of teaching for each of the procedures. For forward chaining, the clinician would wait 3 seconds for the learner to pull up the sheets. If the learner pulled up the sheets, the clinician would pull up the blanket and place the pillows on the bed. If the learner did not pull up the sheets, the clinician would physically guide them to do so and then immediately pull up the blanket and place the pillows on the bed. Once the learner mastered pulling up the sheets, the clinician would wait for 3 seconds before physically guiding for both pulling up the sheets and pulling up the blanket. After the learner pulled up the blanket (independently or after being physically guided to do so), the clinician would place the pillows on the bed. Once the learner mastered pulling up the blanket, the clinician would wait for 3 seconds before physically guiding all three of the steps.

For backward chaining, the clinician would pull up the sheets and the blanket and then wait 3 seconds for the learner to place the pillows on the bed. If the learner did not place the pillows on the bed, the clinician would physically guide them to do so. Once the learner mastered placing the pillows on the bed, the clinician would pull up the sheets and wait 3 seconds for the learner to pull up the blanket and place the pillows on the bed. Once the learner mastered pulling up the blanket, the clinician would wait for 3 seconds before physically guiding all three of the steps.

For total task presentation, the clinician would wait 3 seconds before physically guiding the learner to complete each step. The clinician would not complete any of the steps for the learner.

Teaching Procedures

Your supervisees will need to specify teaching procedures including selecting a prompt hierarchy and determining an appropriate mastery criterion. The prompt hierarchy should specify the time-delay before prompts are provided (e.g., 3 seconds) and the types of prompts which will be provided. One important consideration is whether vocal prompts will be used. If the goal is for the learner to complete the entire chain in the absence of vocal instructions, it may be ideal to avoid vocal prompts as they can be difficult to fade. In addition, there may be situations in which visual prompts (e.g., pictures, written instructions) can be included within the chaining procedure. Visual prompts are ideal for behavior chains because they allow clients to successfully complete task analysis steps without adult prompting (e.g.,

vocal, physical). For example, if your supervisee is teaching their client to engage in the behavior chain of dressing, introducing a sequence of pictures may allow for the client to correctly engage in each dressing step without your supervisee prompting each response. Eventually the pictures can be faded to further promote independence. Other considerations related to prompts include the client's imitative repertoire before introducing model prompts and the client's sensitivity to physical touch before introducing physical guidance.

Prior to introducing chaining procedures, your supervisees should determine the mastery criterion for the entire chain of responses. For example, the client will complete 90% of the steps independently across three consecutive days. In addition to the overall mastery criterion, your supervisee should determine the mastery criterion for each step in the task analysis when using forward and backward chaining. An example of this mastery criterion could be that the client independently completes the step for three consecutive opportunities. For example, after three sessions in which the client pulled up the blankets without physical guidance, the clinician would initiate teaching placing the pillows on the bed. Discuss the importance of selecting an appropriate mastery criterion to ensure the client is successful moving through each of the chaining steps.

Group Supervision Meeting

Below is a plan for activities to incorporate into a 1-hour meeting with a small group of supervisees.

Group Supervision Meeting Agenda

Time	Activity
0:00–20:00	Review Major Concepts
20:00–30:00	Develop a Task Analysis
30:00–40:00	Name that That Chaining Procedure
40:00–55:00	Collecting and Graphing Chaining Data
55:00–60:00	Knowledge Check

Materials Needed

- Appendix A: *Chaining Data Collection Practice*, 1 copy for each supervisee

Reading Assignments

At least 1 week prior to the group supervision meeting, assign your supervisees to read about the subject. Below is a list of recommended assigned readings.

- Alexander et al. (2015)
- Slocum & Tiger (2011)
- Spooner & Spooner (1984)

Review Major Concepts

Begin your group supervision meeting by reviewing the major concepts associated with behavior chaining including the purpose and basic procedures. Discuss each of the following topics (a) behavior chains, (b) task analyses, (c) assessment methods, (d) chaining methods, and (e) teaching procedures. A brief summary of each is provided below and PowerPoint slides are available to share with your group.

Behavior Chains

Review the definition of a behavior chain with your supervisees and provide several examples. Ask your supervisees to contribute additional examples and you can provide feedback as necessary.

1. Behavior chain: A sequence of responses that link together and result in a terminal reinforcer. Each response in the sequence produces a stimulus change that functions as a conditioned reinforcer for that response and a discriminative stimulus for the subsequent response (Cooper et al., 2020).

Highlight the two functions stimulus changes serve within a behavior chain (i.e., conditioned reinforcer and discriminative stimulus). Walk through one of the examples you provided specifically noting (a) the stimulus change, (b) the response it serves as a conditioned reinforcer for, and (c) the response for which it serves as a discriminative stimulus.

Task Analyses

Review the definition of a task analysis and the ways in which they can be developed.

1. Task analysis: the result of breaking a complex skill or series of behaviors into smaller, teachable steps (Cooper et al., 2020).

Ask your supervisees to provide examples (similar to the sandwich example above) of task analyses and provide feedback as needed. Then, transition to the discussion of the methods for developing a task analysis. Next, review the four methods used to develop a task analysis inlcuding (a) observing someone else complete the chain of responses, (b) completing the chain of responses yourself, (c) recruiting input from an expert, and (d) trial and error. Provide examples of the methods that you have used and ask your supervisees to provide additional examples.

In addition to creating the task analysis, review the data sheets provided in the PowerPoint. Add other examples of data sheets that may be more appropriate to the population with whom your supervisees work.

Assessment Methods

Next, introduce the two assessment procedures to your supervisees and discuss the strengths and weaknesses of each.

1. Single-opportunity method: learner is given the opportunity to respond to each step until they either make an error or fail to respond at which point the session is terminated
   (a) Strengths: time efficient, limits effects of testing
   (b) Weaknesses: may underestimate the learner's baseline level of responding
2. Multiple opportunity probe: learner is given the opportunity to respond to each step, if they make an error or fail to respond the clinician will complete the step and allow the learner to respond to the next step
   (a) Strengths: provides a more accurate depiction of responding
   (b) Weaknesses: more time consuming

Using the task analysis examples discussed earlier, have your supervisees describe how the two assessments would be implemented. Remind your supervisees that these assessments can be used for both baseline and intervention. If your supervisees plan to use these assessment procedures during intervention, they will need to conduct probe sessions and treatment sessions. Probe sessions will be graphed and will not include any teaching procedures (e.g., prompting). The treatment sessions will include teaching procedures, but the data will not be included in the primary graph.

Chaining Methods

Then, present the three chaining methods to your supervisees. Provide examples of behavior chains and describe how they would be established using the different teaching methods (similar to the bed making example provided above).

1. Forward: The learner is taught to engage in the first step in the chain, while the clinician completes the remaining steps. Once the first step is mastered, the learner is taught to engage in the second step and the clinician completes the remaining steps. This continues until all steps are mastered.
2. Backward: The learner is taught to complete the last step in the chain, while the clinician completes the other steps. Once the learner masters the last step, the

learner is taught to complete the last two steps, while the clinician completes the other steps. This continues until all steps are mastered.
3. Total task presentation: The learner is taught to engage in all steps at once.

Teaching Procedures

Finish this review by discussing the prompting hierarchy and mastery criterion. The prompting hierarchy should include the type of prompts that will be used and the time-delay between the initial instruction or completion of the prior step and the introduction of a prompt. Regarding determining prompting procedures, there several considerations you should highlight to your supervisees. First, your supervisees should select a time-delay that is most appropriate for their client. If their client requires a longer or shorter latency between being presented with an instruction and initiating engagement in the compliance response, this should be reflected in the selection of a time delay. Second, your supervisees should determine whether vocal prompts will be used. Despite the ease with which vocal prompts can be used, encourage your supervisees to avoid using them, when possible, as they can be difficult to fade. Third, your supervisees should decide whether visual supports should be included within their procedures. As with any prompting procedure, if visual prompts are unnecessary, they should not be included. However, if needed, visual supports can aid the client in completing the behavior chain without requiring additional adult prompting. Fourth, when considering model prompts, your supervisees should consider whether model prompts are appropriate based on their client's imitative repertoire. Finally, physical guidance should be reserved for situations where the client readily accepts physical prompts without displaying any signs of discomfort.

Transition to the discussion of mastery criteria. Your supervisees should determine when the behavior chain will be considered mastered. It is important for your supervisees to select a mastery criterion that will allow the client to be successful in the natural environment. That is, because the terminal reinforcer is only available once all steps in the chain are completed, the client should engage in the behavior at a level which will reliably result in the terminal reinforcer. If your supervisees are using forward or backward chaining, remind them that they will also need to specify criteria for mastery of individual steps. This criterion should be sufficiently stringent to promote success, but also flexible enough to allow for increasing the number of steps the client needs to complete.

Developing a Task Analysis Activity

For this activity, select a chain of responses that can be completed in the environment in which your meeting occurs. Engage in the behavior chain while your supervisees are observing. Ask your supervisees to write down all the responses in which

you engage. Following the observation, provide your supervisees the opportunity to independently create two task analyses, one with more detail and the other with fewer steps and less detail. After the task analyses have been created, ask your supervisees to share them with the group and you can provide feedback as needed.

Name the Chaining Procedure Activity

For this activity, read the vignettes provided here or develop your own. Present the vignettes to your supervisees and ask them to determine whether the clinician is using forward chaining, backward chaining, or total task presentation.

Example 1 (backward): Rylee is teaching Liam to load the dishwasher. She provides the instruction "do the dishes" and waits 5 seconds before modeling shutting the preloaded dishwasher. After Liam shuts the preloaded dishwasher, Rylee provides reinforcement. Once Liam can shut the preloaded dishwasher independently, she will teach him to push in the bottom loaded drawer.

Example 2 (forward): Aliyah is teaching her client to clean the mirror in the bathroom. Aliyah provides the instruction "clean the mirror" and waits 5 seconds before pointing to the spray. After her client sprays the mirror, Aliyah completes the remaining steps of the chain. Once her client independently sprays the mirror, Aliyah will teach her client to wipe the mirror with a towel.

Example 3 (total task presentation): Naoki is teaching her client to sort laundry. Naoki provides the instruction "sort the laundry" and waits 5 seconds before providing a model prompt for every step. In subsequent sessions, Naoki will continue to wait 5 seconds before providing a model prompt for every step until her client masters the chain.

Example 4 (forward): Ella is teaching Atticus to clean up his toys. Ella provides the instruction "clean up toys," waits 5 seconds, and then physically guides Atticus to put the first toy in the toy chest. Once Atticus independently puts away one toy, Ella will teach him to put away two toys.

Example 5 (total task presentation): Senita is teaching Javier to wash his hands. Senita provides the instruction "wash your hands" and waits 5 seconds before physically guiding Javier to complete each step. In subsequent sessions, Senita will continue to wait 5 seconds before providing physical guidance for every step until Javier masters the chain.

Example 6 (backward): Tonya is teaching her client to set the table. She provides the instruction "set the table" and waits 5 seconds before pointing to the fork. After her client puts the fork on the napkin, Tonya provides reinforcement. Once her cli-

ent can place the fork on the napkin independently, Tonya will teach him to put the knife on the other side of the plate.

Collecting and Graphing Chaining Data

For this activity, use the vignette provided in Appendix A or develop a scenario that better aligns with the population with whom your supervisees work. Ask your supervisees to create a data sheet which they will use to collect data using the response pattern provided below. Examine the created data sheet and ensure they have (a) all the steps from the task analysis, (b) the correct number of sessions, and (c) recorded the data accurately.

Use the following vignette for this activity:

Joseph is teaching his client Edgar to wash his car using chaining. He collected baseline data using the multiple-opportunity probe and decided to use total task presentation as the chaining method. Edgar has a strong imitative repertoire; therefore, Joseph has decided to use a 5-second time-delay to a model prompt. Joseph has decided that the mastery criterion will be 90% correct responding across three sessions.

Joseph has developed the following task analysis:

1. Spray the car with a hose
2. Wipe the entire car with a soapy towel
3. Rinse soap off the car with a hose
4. Dry the car with a towel

The transcript of six sessions is provided below:

Session 1—BL
Joseph gives the instruction "wash your car." Joseph waits 5 seconds and Edgar does not pick up the hose. Joseph picks up the hose and sprays the car. Another 5 seconds elapses and Joseph wipes the car with the soapy towel. Edgar does not pick up the hose, so Joseph rinses the car with hose. After another 5 seconds, Joseph dries the car.

Session 2—BL
Joseph gives the instruction "wash your car." After 5 seconds elapses, Joseph picks up the hose and sprays the car. Joseph waits 5 seconds and Edgar does not wipe the car with a soapy towel, so Joseph wipes the car. Another 5 seconds elapses and Edgar does not pick up the hose, so Joseph rinses the car with hose. After another 5 seconds, Joseph dries the car.

Session 3—BL
Joseph gives the instruction "wash your car." Edgar does not pick up the hose within 5 seconds, so Joseph sprays the car. Another 5 seconds elapses and Joseph wipes the car with the soapy towel. After 5 seconds, Joseph rinses the car. Joseph waits 5 seconds and Edgar does not dry the car, so Joseph dries the car.

Session 4—TX
Joseph gives the instruction "wash your car." Joseph waits 5 seconds and Edgar does not pick up the hose. Joseph models spraying the car and then Edgar sprays the car. Another 5 seconds elapses and Joseph models wiping the car with the soapy towel. Edgar still does not pick up the soapy towel. Joseph provides light physical guidance and Edgar wipes down the car. Edgar picks up the hose and rinses the car. After 5 seconds, Joseph models drying the car and Edgar dries the car.

Session 5—TX
Joseph gives the instruction "wash your car." Joseph waits 5 seconds and Edgar does not pick up the hose. Joseph models spraying the car and then Edgar sprays the car. Another 5 seconds elapses and Joseph models wiping the car with the soapy towel. Edgar still does not pick up the soapy towel. Joseph provides light physical guidance and Edgar wipes down the car. Edgar picks up the hose and rinses the car and then immediately dries the car.

Session 6—TX
Joseph gives the instruction "wash your car." Edgar picks up the hose and sprays the car. After 5 seconds elapses, Joseph models wiping the car with the soapy towel. Edgar still does not initiate the response. Joseph provides light physical guidance and Edgar wipes down the car. Edgar picks up the hose and rinses the car. Joseph waits 5 seconds and models drying the car. Edgar picks up the towel and dries the car.

Knowledge Check

1. What are the two functions of the stimulus change within a chain schedule?
2. Identify and describe the three methods of chaining.
3. Identify one method for developing a task analysis.
4. Describe single- and multiple-opportunity assessment procedures.

Homework for Individual Supervision without a Client

1. Graph the data collected during group supervision.
2. Develop a task analysis for a behavior chain to target with a client.

Individual Supervision Meeting Without a Client #1

Below is a plan for activities to incorporate into a 30-minute meeting with an individual supervisee.

Individual Supervision Meeting Without a Client Agenda

Time	Activity
0:00–10:00	Graphing and Interpreting Data
10:00–30:00	Client-Directed Activities

Materials Needed

- Appendix B: *Mock Graph*
- Appendix C: *Graph Component Checklist*
- Appendix D: *Chaining Procedural Fidelity Checklist*
- Supervisee's graph
- Task analysis for client goal

Graphing and Interpreting Data

Prior to this meeting, your supervisee should have graphed the data collected during group supervision. These data can be graphed using an application such as Microsoft Excel or using paper and pencil. Examine your supervisee's graph and evaluate their accuracy of graphing using the corresponding graph we provide (Appendix B). Once you have determined that the graph is an accurate depiction of the data, review the quality of the graph using the *Graph Component Checklist* (see Appendix C). Provide specific feedback to your supervisee on how they can improve their future graphs.

Transition the discussion to analyzing and interpreting the data sheets and graph. Using data to make decisions is important for all behavioral interventions; however, there are multiple levels of analysis required when using chaining procedures. Thus, providing practice opportunities for these discussions is of extreme importance. Use this opportunity to consider multiple outcomes and strategies for addressing potential difficulties.

Client-Directed Activities

Review the task analysis your supervisee developed. Provide feedback on whether additional steps should be included or steps should be combined based on the client's skill level. As a team, determine which assessment probe and chaining method (e.g., forward chaining) will be most effective for the client. Discuss the prompting hierarchy and specify the type of prompts that will be used and the length of the time delay. Also, select an appropriate mastery criterion for the behavior chain and individual steps (only for forward and backward chaining). During this meeting, you and your supervisee should develop a procedural fidelity checklist that you can use to evaluate your supervisee's performance when implementing the procedures with their client (see Appendix D).

In addition to the procedural fidelity checklist, you and your supervisee should develop a data sheet for collecting data on the client's behavior during the behavior chain. This data sheet will be used to collect baseline data before your next individual meeting with a client. Following the meeting, your supervisee should finalize the procedural fidelity checklist and data sheet.

Homework for Individual Supervision with a Client

1. Finalize data sheet and collect data on the client's engagement in the behavior chain for 3–5 sessions.
2. Graph the collected data (3–5 baseline sessions) to display the current level of the behavior before introducing the chaining procedure. This assignment should be submitted and approved before the scheduled meeting.
3. Finalize *Chaining Procedural Fidelity Checklist* (Appendix D).

Individual Supervision Meeting with a Client

Below is a plan for activities to incorporate into a 30-minute supervision session in which you observe your supervisee with a client.

Individual Supervision Meeting with a Client Agenda

Time	Activity
0:00–15:00	Chaining Administration
15:00–30:00	Performance Feedback

Materials Needed

- Data sheets for client responding, 2 copies
- Appendix D: *Chaining Procedural Fidelity Checklist*

Prior to your meeting with your supervisee, they should have sent you the baseline data for your approval. After analyzing the data, you should determine that it is appropriate to introduce the chaining procedure.

Chaining Administration

Your supervisee should have finalized the *Chaining Procedural Fidelity Checklist* and the client data sheet and provided you with a copy of both. Join your supervisee's session to observe the administration of the chaining procedure and collect data simultaneously. Following the administration of the chaining procedure, provide specific feedback based on data collected using the procedural fidelity checklist.

Performance Feedback

After you observe your supervisee, provide them with your data collection sheet and ask your supervisee to calculate IOA. Discuss and resolve any discrepancies between your data and your supervisee's data. Then, provide feedback to your supervisee according to the procedural fidelity checklist. When providing corrective feedback, include a justification as to why a behavior needs to change. Finally, provide an opportunity for your supervisee to ask questions.

Mastery Criterion

In order to progress from this lesson, your supervisee must (a) accurately collect data with at least 80% agreement and (b) implement the protocol with at least 80% fidelity. If either of these are not met, the second individual supervision meeting without a client should include intensive role play and feedback. Then, another observation with performance feedback should be conducted.

Individual Supervision Meeting Without a Client #2

Below is a plan for activities to incorporate into a 30-minute meeting with an individual supervisee.

Individual Supervision Meeting Without a Client Agenda

Time	Activity
0:00–20:00	Graphing and Decision-Making
20:00–30:00	Client-Directed Activities

Materials Needed

- Graph of client responding
- Appendix C: *Graph Component Checklist*

Graphing and Decision-Making

After your supervisee has conducted three to five intervention sessions, ask your supervisee to graph the data collected on the client's behavior. During the meeting, ensure your supervisee has entered the data accurately and that their graph meets the requirements provided in the *Graph Component Checklist* (Appendix C). Provide specific feedback according to the checklist. Following this discussion, ask your supervisee to analyze the data and describe their process for moving forward (e.g., two more sessions and then check in with supervisor). Use this opportunity to plan for potential issues which may arise.

Client-Directed Activities

If the mastery criterion was not met during the individual meeting with a client, you should role-play the procedures with your supervisee. Provide behavior-specific feedback following the role play using the procedural fidelity checklist. Ensure they meet the criterion of implementing the procedures with 80% fidelity during the role play before working with their client.

Future Growth

- ☐ Observe your supervisee implement a different chaining procedure than the one implemented.
- ☐ Observe your supervisee provide feedback to another trainee on their implementation of a chaining protocol.

Appendix A: Chaining Data Collection Practice

Create a data sheet and collect data on Edgar's responding using the description provided below. You will need to graph these data prior to individual supervision meeting without a client.

Use the following vignette for this activity:

Joseph is teaching his client Edgar to wash his car using chaining. He collected baseline data using the multiple-opportunity probe and decided to use total task presentation as the chaining method. Edgar has a strong imitative repertoire; therefore, Joseph has decided to use a 5-s time-delay to a model prompt. Joseph has decided that the mastery criterion will be 90% correct responding across three sessions.

Joseph has developed this task analysis:

1. Spray the car with a hose
2. Wipe the entire car with a soapy towel
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The transcript of six sessions is provided below:

Session 1—BL
Joseph gives the instruction "wash your car." Joseph waits 5 seconds and Edgar does not pick up the hose. Joseph picks up the hose and sprays the car. Another 5 seconds elapses and Joseph wipes the car with the soapy towel. Edgar does not pick up the hose, so Joseph rinses the car with hose. After another 5 seconds, Joseph dries the car.

Session 2—BL
Joseph gives the instruction "wash your car." After 5 seconds elapses, Joseph picks up the hose and sprays the car. Joseph waits 5 seconds and Edgar does not wipe the car with a soapy towel, so Joseph wipes the car. Another 5 seconds elapses and Edgar does not pick up the hose, so Joseph rinses the car with hose. After another 5 seconds, Joseph dries the car.

Session 3—BL
Joseph gives the instruction "wash your car." Edgar does not pick up the hose within 5 seconds, so Joseph sprays the car. Another 5 seconds elapses and Joseph wipes the car with the soapy towel. After 5 seconds, Joseph rinses the car. Joseph waits 5 seconds and Edgar does not dry the car, so Joseph dries the car.

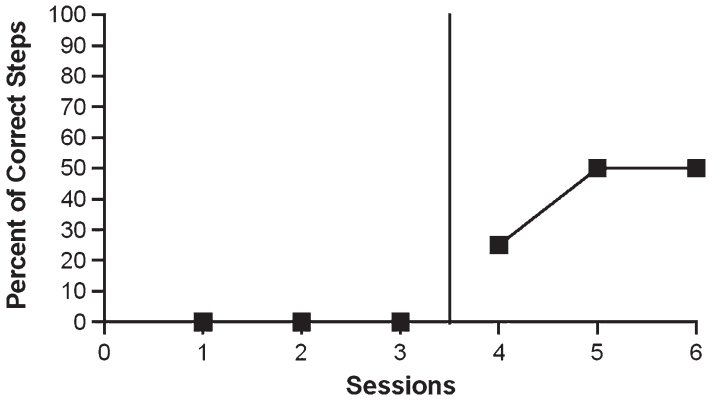
Session 4—TX
Joseph gives the instruction "wash your car." Joseph waits 5 seconds and Edgar does not pick up the hose. Joseph models spraying the car and then Edgar sprays the car. Another 5 seconds elapses and Joseph models wiping the car with the soapy towel. Edgar still does not pick up the soapy towel. Joseph provides light physical

guidance and Edgar wipes down the car. Edgar picks up the hose and rinses the car. After 5 seconds Joseph models drying the car and Edgar dries the car.

Session 5—TX
Joseph gives the instruction "wash your car." Joseph waits 5 seconds and Edgar does not pick up the hose. Joseph models spraying the car and then Edgar sprays the car. Another 5 seconds elapses and Joseph models wiping the car with the soapy towel. Edgar still does not pick up the soapy towel. Joseph provides light physical guidance and Edgar wipes down the car. Edgar picks up the hose and rinses the car and then immediately dries the car.

Session 6—TX
Joseph gives the instruction "wash your car." Edgar picks up the hose and sprays the car. After 5 seconds elapses, Joseph models wiping the car with the soapy towel. Edgar still does not initiate the response. Joseph provides light physical guidance and Edgar wipes down the car. Edgar picks up the hose and rinses the car. Joseph waits 5 seconds and models drying the car. Edgar picks up the towel and dries the car.

Appendix B: Mock Graph



Appendix C: Graph Component Checklist

Supervisee: _____ Date: _____

Rater (circle one): Supervisee Self-Evaluation Supervisor Feedback

Component or Feature	Correct	Notes
Horizontal axis marked in equal intervals	Y N	
Horizonal axis label	Y N	
Vertical axis	Y N	
Vertical axis marked in equal intervals	Y N	
Vertical axis range is appropriate to data displayed	Y N	
Condition change lines (if 2+ conditions displayed)	Y N N/A	
Condition labels (if 2+ conditions displayed)	Y N N/A	
Data points with appropriate markers	Y N	
Data path with appropriate line	Y N	
Figure caption that is informative and concise	Y N	
Key (when applicable)	Y N N/A	
Graph is in black and white	Y N	

Appendix D: Chaining Procedural Fidelity Checklist

Supervisee: _____ Supervisor: _____

Client: _____ Date & Time: _____

Client Learning Objective: _____

Step	Implemented Correctly? + = Yes − = No

_____ / _____ * 100 = _____ % of steps completed correctly

Steps Completed Correctly. Total Number of Steps

References

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