

TOKEN ECONOMY: A BEHAVIOR INTERVENTION FOR PROPERTY DESTRUCTION IN STRUCTURED SETTINGS

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INTRO:

- Previous research highlights the effectiveness in using a token economy to decrease challenging behavior and increase waiting and attending skills (Andzik, 2022; Foxx & Meindl, 2007; Heiniger et al., 2022).
- Much of the literature on token economies focus primarily on populations with ASD. Little research has been conducted on individuals with a dual diagnosis of ASD and Down Syndrome.

PURPOSE:

Evaluate the effectiveness of a token economy on property destruction behaviors demonstrated by a 7-year-old with a dual diagnosis of autism spectrum disorder and Down Syndrome.

Participants

- 1 M (ASD and Down Syndrome)

Dependent Variables

- Property Destruction (partial interval)

Method

- **Materials:** Token board, work tasks, preferred toys, pen, paper
- **Setting:** University-based clinic, 2 therapy rooms
- **Design:** ABAB Design
 - IOA was collected for 100% of sessions and the mean IOA score was 96% (range = 91% to 100%) using scored interval IOA.
 - Treatment fidelity score= 100% across all conditions

Conditions

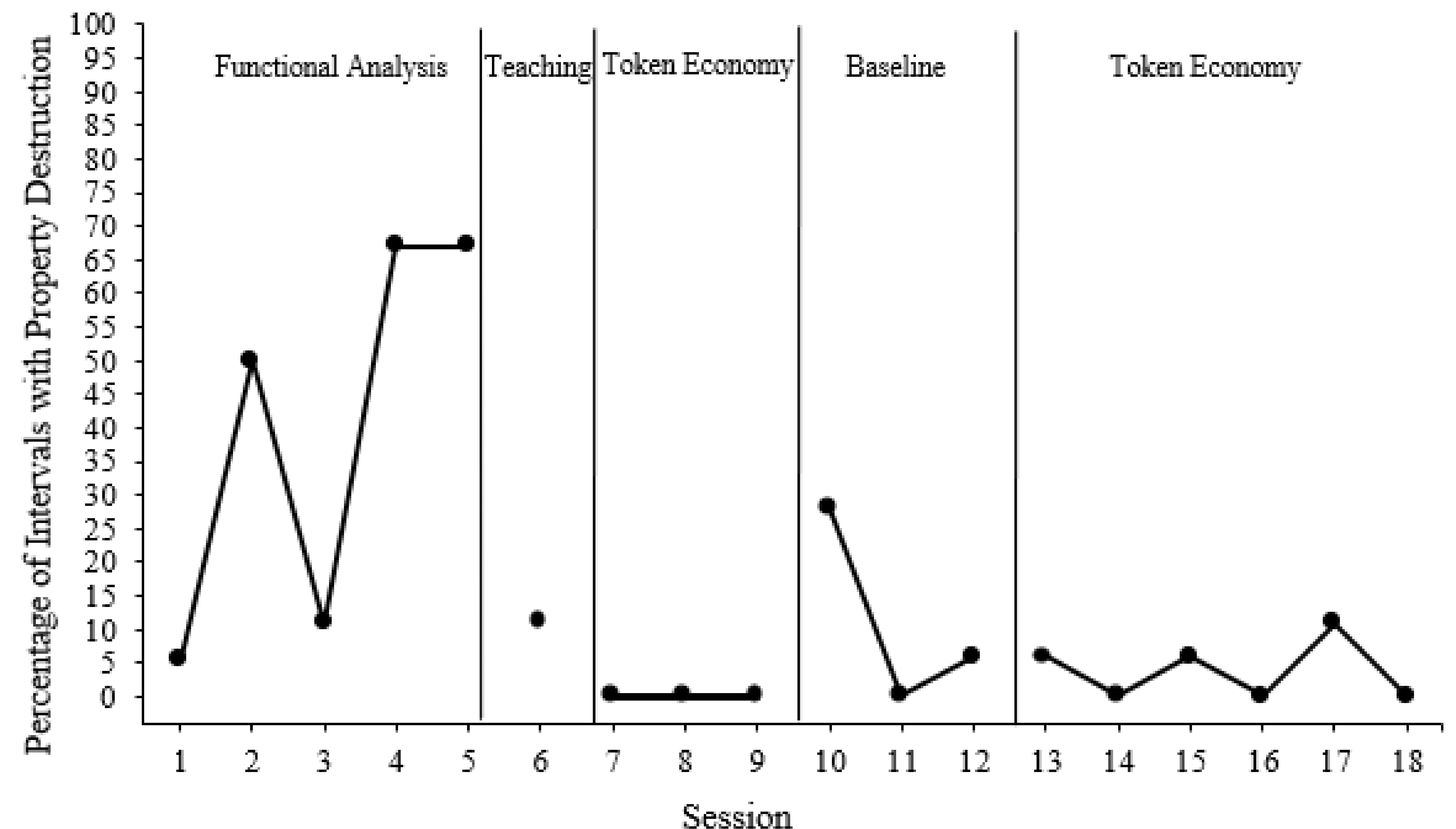
- Baseline (no intervention)
- Intervention (token economy vs no token economy)

Clinically-acceptable levels of property destruction occurred compared to baseline; however, additional research across participants with dual diagnoses of ASD and Down Syndrome is needed.



Figure 1

Treatment Evaluation



Token Economy: An Intervention for Property Destruction in Structured Settings

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Abstract

Token economies have been shown by previous research to effectively decrease challenging behaviors in structured settings and increase compliance and engagement in a series of tasks; however, limited research has been conducted on the effectiveness of token economies with individuals with a dual diagnosis of autism spectrum disorder and Down Syndrome. Thus, the purpose of the study was to evaluate the effectiveness of a token economy on property destruction by a 7-year-old male with a dual diagnosis of ASD and Down Syndrome in a structured setting at an autism clinic. Results of the functional analysis demonstrated property destruction to be maintained by access to escape and access to attention. An A-B-A-B reversal design was used to evaluate the effects of a token economy on property destruction. In the initial token economy condition, property destruction decreased to zero levels. However, baseline levels of responding were not replicated in the return to baseline condition and variability was observed in the second token economy condition. Therefore, this intervention produced clinically acceptable levels of property destruction compared to baseline; however, additional research across participants with dual diagnoses of ASD and Down Syndrome is needed.

Results

Figure 1

Results of Functional Analysis of Property Destruction

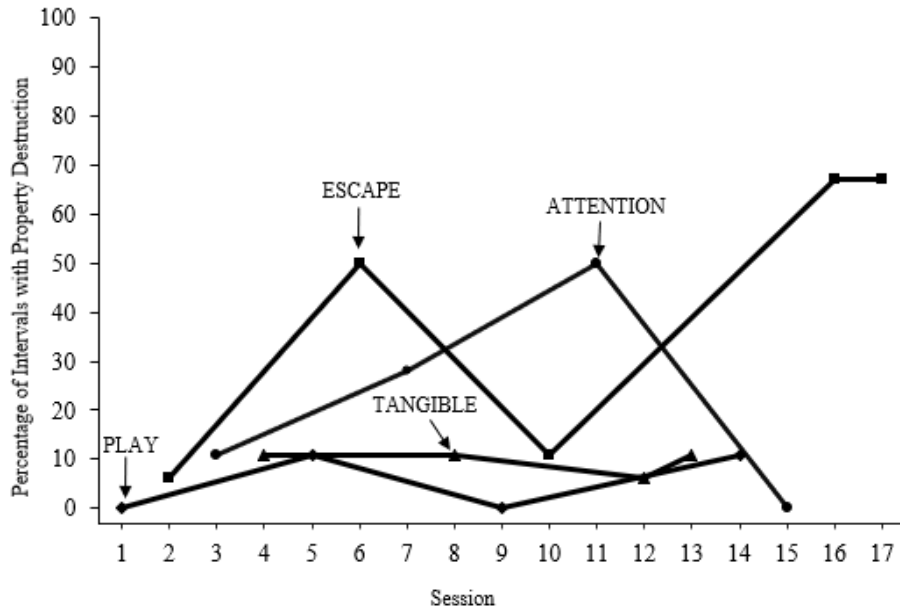
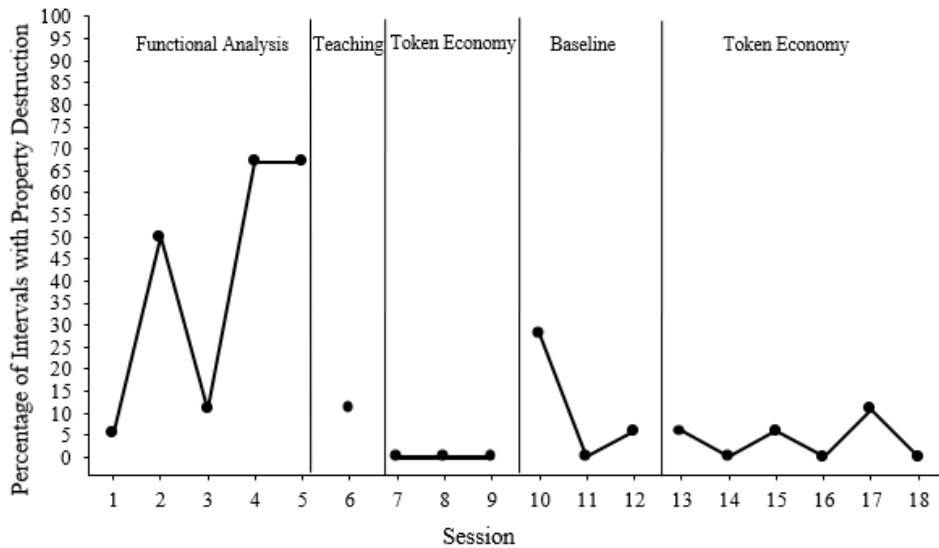


Figure 2

Percentage of Intervals with Property Destruction Given the Token Economy in the Clinic



References

- Andzik, N., Smith, E., & Neef, N. (2022). Using a token economy to treat escape-maintained problem behavior without extinction. *Behavior Modification, 46*(1), 128–146.
<https://doi.org/10.1177/0145445520966762>
- Cihon J. H., Ferguson J. L., Milne C. M., Leaf J. B., McEachin J., Leaf R. (2019). A preliminary evaluation of a token system with a flexible earning requirement. *Behavior Analysis in Practice, 12*, 548–556.
<https://doi-org.libweb.lib.utsa.edu/10.1007/s40617-018-00316-3>
- Estle, S. J., Green, L., Myerson, J., & Holt, D. D. (2007). Discounting of monetary and directly consumable rewards. *Psychological Science, 18*(1), 58–63.
<https://doi.org/10.1111/j.1467-9280.2007.01849>
- Fodstad, J.C., Rojahn, J., & Matson, J.L. (2012). The emergence of challenging behaviors in at-risk toddlers with and without autism spectrum disorder: A cross-sectional study. *Journal of Developmental and Physical Disabilities, 24*, 217-234.
- Foxx, R. M., & Meindl, J. (2007). The long term successful treatment of the aggressive/destructive behaviors of a preadolescent with autism. *Behavioral Interventions, 22*(1), 83–97. <https://doi.org/10.1002/bin.233>
- Heiniger, S. N., Tucker, K. A., Hott, B. L., & Randolph, K. M. (2022). Classroom reinforcement systems: Using token economies to foster independence. *Beyond Behavior, 31*(3), 151–162. <https://doi-org.libweb.lib.utsa.edu/10.1177/10742956221108359>

Mason S. A., Iwata B.A. (1990). Artifactual effects of sensory integrative therapy on self-injurious behavior. *Journal of Applied Behavior Analysis*, 23(3), 261-270.

<https://doi.org/10.1901/jaba.1990.23-361>

Soares D. A., Harrison J. R., Vannest K. J., McClelland S. S. (2016). Effect size for token economy use in contemporary classroom settings: A meta-analysis of single-case research. *School Psychology Review*, 45(4), 379–399.

<https://doi-org.libweb.lib.utsa.edu/2f10.17105/2fSPR45-4.379-399>

Appendices

Table 1

Teaching Fidelity

1	Environment is arranged with predetermined items and activities from the preference assessment that were moderately to highly preferred
2	Researcher engages in unstructured play with the client for at least 10 minutes
3	Researcher transitions to work area
4	Prior to initiating work, present the token economy to the client and state criteria for “break” or access to chosen item
5	Uses appropriate picture to the available reinforcement next to “I am working for:”
6	Researcher delivers instruction to client
7	Upon correct response, researcher delivers vocal praise to client and simultaneously places a token on the board
8	Upon challenging behavior, researcher redirects client to the token economy and does not provide access to escape while ensuring safety of the client
9	Researcher redelivers the prompt if applicable
10	Researcher fades prompts across trials within the session
11	Upon completion of the token economy, the researcher states, “you got all of your tokens” and ends work session immediately
12	Client is provided access to escape

$$\frac{\text{\# Correct Steps}}{\text{Total}} * 100 = \text{Treatment Integrity}$$

Table 2

Token Economy Fidelity

1	The therapist has materials including token board and work bin
2	Therapist presents the token board to the client before delivering tasks stating “We are working for *item/activity*”
3	Therapist starts the interval timer
4	Upon a correct response from the client without the target behavior, the therapist places a token on the token board
5	If the child engages in the target challenging behavior, the researcher does not provide a token for that trial
6	Researcher provides a new trial after 30s
7	If the child engages in the target challenging behavior, the therapist marks an X on the data sheet
8	After three minutes the therapist stops the interval timer
9	When the token board is full, the therapist provides vocal praise such as “you got all your tokens!” and provides the client with access to the item/activity
10	Therapist calculates the percentage of target behavior per interval

$$\frac{\text{\# Correct Steps}}{\text{Total}} * 100 = \text{Treatment Integrity}$$

Table 3

Brief FA Control Condition Fidelity

1	Therapist allows the client to have continuous access to highly preferred items
2	Therapist provides social interaction approximately every 30 s or as requested by the client
3	Therapist ignores any occurrence of problem behavior
4	Therapist does not place any demands

$$\frac{\text{\# Correct Steps}}{\text{Total}} * 100 = \text{Treatment Integrity}$$

Table 4

Brief FA Escape Condition Fidelity

1	Therapist has work materials at table
2	Therapist says, "It's time to work" and presents a task to client
3	Therapist ignores problem behavior that is not the target behavior
4	Upon a correct response, therapist provides brief verbal praise
5	Upon target behavior, therapist says "okay, you don't have to" and removes the items from client and turns away
6	Therapist remains turned away for approximately 30 s
7	After approximately 30 s, therapist returns the materials to client and repeats the trial

$$\frac{\text{\# Correct Steps}}{\text{Total}} * 100 = \text{Treatment Integrity}$$

Table 5

Brief FA Attention Condition Fidelity

1	Therapist tells client to play with the toys
2	Therapist ignores appropriate behavior
3	Therapist ignores problem behavior that is not the target behavior
4	Upon target behavior, therapist delivers brief statements such as “are you okay” or “be careful”

$$\frac{\text{\# Correct Steps}}{\text{Total}} * 100 = \text{Treatment Integrity}$$

Table 6

Brief FA Tangible Condition Fidelity

1	Therapist allows client to play with toys prior to session for approximately 10-30 s
2	1 minute into session, therapist says, “My tum” and removes the item from client
3	Therapist ignores problem behavior that is not the target behavior
4	Upon a request for the item by client, therapist responds with “no”
5	Every 30 s therapist provides brief verbal statements such as “you have blue shoes” or “the wall is blue”
6	Upon target behavior, therapist says “okay, you can have it back” or “here you go” and hands the item back to client
7	Therapist allows access to the item for approximately 30 s
8	Therapist removes the item and repeats the trial

$$\frac{\text{\# Correct Steps}}{\text{Total}} * 100 = \text{Treatment Integrity}$$