INTERDISCIPLINARY COLLABORATION IN THE TREATMENT OF YOUNG CHILDREN WITH AUTISM SPECTRUM DISORDER: OPTIMIZING COMMUNICATION AND BEHAVIOR

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Agenda

- Introductions & disclosures
- Some success stories: Let's start at the end
- ABA Basics: What can ABA do for you?
- Augmenting speech therapy using ABA basics
- Benefits of speech therapy in ABA programming
- Collaboration 101: How to make it work
- Understanding motivation from the SLP perspective
- Working with parents: 2 different perspectives
- Questions

Disclosures

Christy Schweitzer and Stuart Segal are employed by Henry Ford Health System. There are no other personal or financial interests to disclose.

Some Success Stories

- What can “brown” do for you? – How SLP-ABA collaboration got started at HFHS
- Additional case studies

Child with ASD & CAS

(Joint attention, Imitation, Motivation, Smooth transitions)

Child with ASD

(Language structure task, Motivation, Cooperation / Tolerance during non-referred task)

Child with ASD & CAS

(Joint attention & effort, even during difficult task)

Problem behavior IS communication

- Many studies in Behavior Analytic Journals have indicated that problem behavior is frequently a communication strategy.
- Reinforcement of appropriate communication, in combination with functional communication training results in the reduction of problem behavior as a communication strategy.
- Modifying reinforcement contingencies around problem behavior and more appropriate communication strategies often results in reduction of problem behaviors.

Problem behavior IS communication
seminal research

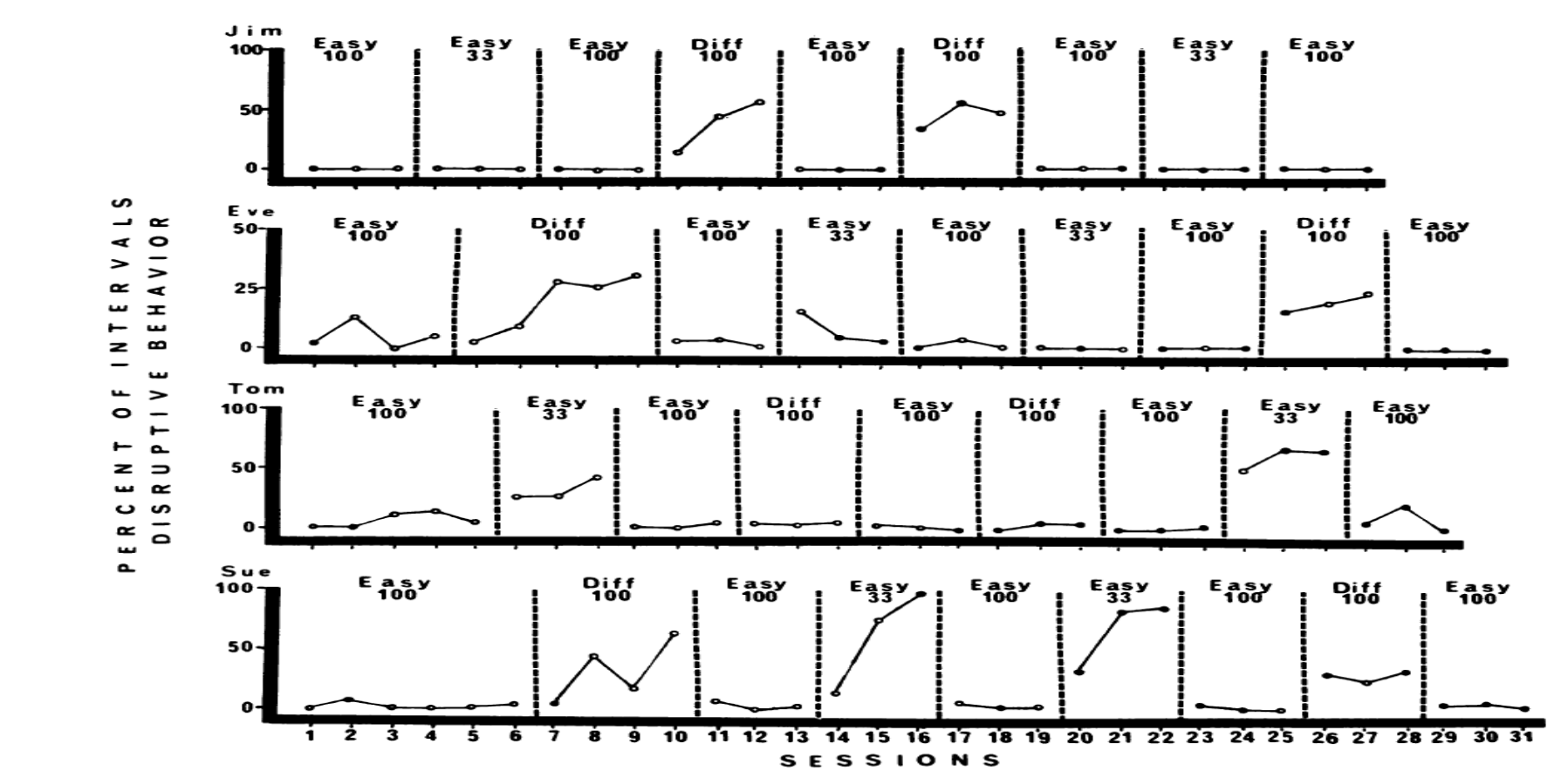
- Carr & Durand 1985
- N = 4 children
  - *Engage in at least 1 problem behavior/hour*
  - 2 male and 2 female between the ages of 7 & 14
  - All had expressive language of minimally 1 word utterances
- Experiment consisted of 2 distinct phases
  - 1. Easy 100/33 vs. difficult 100
  - 2. Relevant and irrelevant responding

Problem behavior IS communication
seminal research

- Carr & Durand 1985
- Easy 100/33 vs. Difficult 100
  - Using an ABAB experimental design, the experimenters were able to show that for these children, variations in the difficulty of tasks or amount of adult attention provided could directly influnce frequency of problem behavior.
- Relavant vs. Irrelavant responding
  - Easy 33 examiner question every 30 seconds: "Do you have any questions?"
    - Relevant responding: "Am I doing good work?" --> provides praise & next command
    - Irrelevant responding: "I don't understand" --> provides assistance & next command
  - Difficult 100 examiner response to incorrect: "That's not correct, do you have any questions?"
    - Relevant responding: "I don't understand" -->provides assistance & next command
    - Irrelevant responding: "Am I doing good work?" --> Provides praise & next command

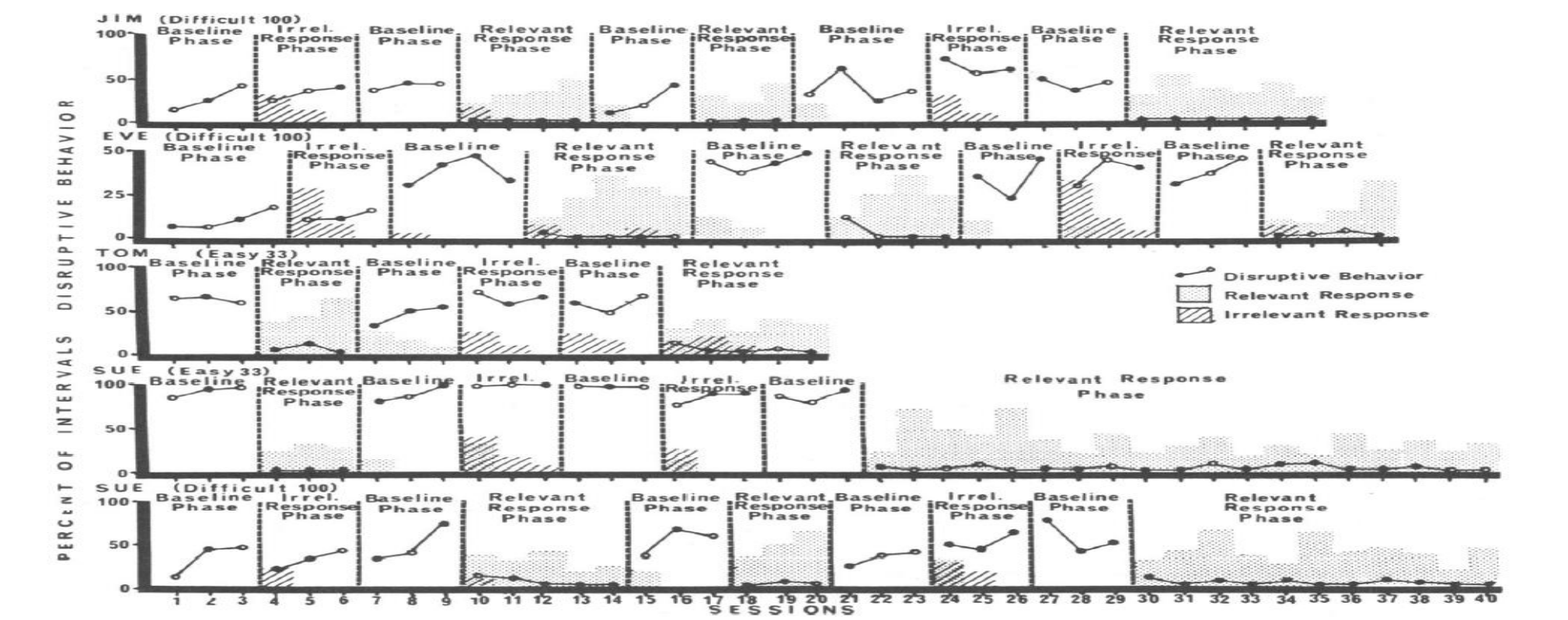
Problem behavior IS communication

seminal research



Problem behavior IS communication

seminal research



Problem behavior IS communication
seminal research

- Carr & Durand, 1985
- What can we take from this research?
- 1. In the first phase, the experimentors find that problem behavior increases under specific conditions related to the likely MO of the client.
- 2. In the second phase, the experimenters find that roblem behavior can be replaced with a relevant communiicative response.
- ""“Once it has been determined that a behavior problem likely serves a specific social function (e.g. escape or social function), one is in a position to consider appropriate replacement behaviors.“

Problem behavior IS communication
seminal research

- Hagopian et. al, 1998
- N = 21 children aged 2 – 16 years old.
  - Children had a variety of problem behaviors including aggression, self-injury, property destruction, PICA, elopment, disruption.
  - Engagement in these behaviors varied in maintaining function (e.g. attention, access, escape, automatic)
- Researchers looking into effectivness of functional communication training alone vs. Functional communication training in combination with other behavioral interventions.

Problem behavior IS communication
seminal research

- Hagopian et. al, 1998
- Using functional analysis techiology developed by Iwata et.al, a maintaining function was defined for each behavior targeted for reduction.
- Researchers looking into effectivness of functional communication training alone vs. Functional communication training in combination with other behavioral interventions.
- Is functional communication training alone as effective alone or when used collaboratively with extinction and/or punishment?

Problem behavior IS communication
seminal research

- Hagopian et. al, 1998
- At the time of this research, functional communication training widely accepted as an effective therapy option.
- Baseline contingency: functional analysis contingency matches the problem behavior (e.g. For aggression maintained by escape, escape provided contingent upon problem behavior)
- Exerimental contingencies
  - Functional commnication training without extinction
  - Functional communication training with extinction
  - Functional communication training with punishment

Problem behavior IS communication
seminal research

- Hagopian et. al, 1998
- Functional commnication training without extinction
  - Conducted in 11 cases. A 90% redction in behavior was not achieved
  - An average incerase in problem behavior frequancy of 17% was observed across these 11 cases.
  - 3 cases had increase of over 50% in problem behavior frequency
  - Due to lack of success, the final 10 cases did not receive functional communication training in isolation
- Functional communication training with extinction
  - An average incerase in problem behavior frequancy of 17% was observed
  - Highest decrease 99.5%
- Functional communication training with punishment
  - Problem behavior reduce by at least 90% in all cases in which this model was provided.

Problem behavior IS communication

seminal research

Table 3
Percentage Reduction in Problem Behavior During the Final Application of Each FCT Intervention

Case	Condition	FCT intervention			
		FCT	FCT + extinction	FCT + extinction and fading	FCT + punishment
1	Demand	44.19	95.35	53.49	92.03[a]
2	Demand	—	31.25	—	92.92[a]
3	Demand	−101.91	—	—	92.34[a]
4	Demand	−32.77	−2.52	—	—
5	Demand	76.81	91.88	—	99.13[a]
6	Demand	—	87.30	—	—
7	Demand	—	24.81	—	95.80
8	Attention	22.08	—	—	94.12
9	Attention	43.22	98.31	97.46	—
10	Attention	−262.51	88.01	—	99.54
11	Attention	55.66	82.08	—	—
12	Attention	—	61.12	—	96.35[a]
13	Attention	36.41	−19.53	—	—
14	Attention	—	−46.24	—	96.77[a]
15	Attention	—	52.76	—	98.69[a]
16	Attention	86.92	84.50	—	97.09
17	Tangible	—	92.67	98.27	—
18	Attention	—	96.88	97.98	—
18	Demand	—	94.44	87.50	100.00[a]
19	Attention	—	99.51	−7.36	99.02[a]
19	Demand	—	97.67	29.53	98.84[a]
20	Attention	—	99.04	95.92	—
20	Demand	—	99.04	99.52	—
20	Tangible	−159.61	77.25	39.61	—
21	Attention	—	96.84	86.52	99.67[a]
21	Demand	—	56.52	—	98.76[a]
21	Tangible	—	75.96	18.27	99.04[a]

Note. Figures represent percentage reduction from baseline using the last 5 treatment points (except Case 17; see text); negative numbers represent an increase in problem behavior relative to baseline; dashes indicate that a particular FCT intervention was not attempted.

[a] Demand or delay-to-reinforcement fading was conducted during FCT with punishment.

Problem behavior IS communication
seminal research

- Hagopian et. al, 1998
- What can we take from this research?
- Functional communication training may not be efective for this population in isolation.
- Functional communication training may not be effective for indviduals who engage in severe problem/interfereing behaviors.
- Functional communication training was vastly more effective for these study participants when utilized collaboratively with other behavioral interventions.

Imagine how much more you could teach them if…

- Child participated in a wider variety of work tasks
- Child came to table when time for work
- Child put away preferred toy when time for work
- Child told you what he/she wanted to “work for” that day
- Child with ASD could work on same types of language tasks as delayed peers without ASD
- Child could tolerate non-preferred activities without hitting, kicking, biting, etc

ABA Basics

Cooper, Heron, Heward (2014)

- **Reinforcement:** ANY stimulus which follow a behavior which INCREASES the future likliehood of this behavior.
- **Punishment:** ANY stimulus which follow a behavior which DECREASES the future likliehood of this behavior.
  - It is essential to recognize that reinforcement and punishment are subjective.
  - If the trend in behavior is not increasing WE ARE NOT PROVIDING REINFORCEMENT
  - If the trend in behavior is not decreasing WE ARE NOT PROVIDING PUNISHMENT

ABA Basics

- **What is a behavior? (the officially recognized definition)**
- **Behavior:** "That portion of an organisms interaction with its enviroment that is characterized by detectable displacement in space through time of some part of the organism and that results in measurable change in at least one aspect of the environment" (Johnston and Pennypacker, 1993)

ABA Basics

- **The 3-term Contingency:** The basic unit of behavioral analysis. This unit encompasses the temporal and environmental contingencies which influnce a behavior.
  - Antecedent: The environmental condition or stimulus change existing prior to a behavior of interest.
  - Behavior: A definable, measurable interaction between an organism and it's environment.
  - Consequnce: The stimulus change which follows a behavior.

ABA Basics

4 primary functions of behavior (which consequence type is likely maintaining this behavior)

- **Access to stimuli/activities**
  - Kid says "I want cookie"
  - Kid steals a toy from his speech patologist's office
- **Escape from aversive stimuli/environments**
  - Taking a tylenol to relieve a headache
  - Flipping the table in my speech session
- **Access to social engagement**
  - Saying "Hello, how are you?"
  - Spitting on the floor of my speech pathologist's office because mom yells at me
- **Automatic**
  - Scratching a mosquito bite
  - Pressing the same icon on my speech generating device without an external stimulus being presented.

ABA Basics

Motivation is key!!

- **Motivating Operation (MO):** An antecedent condition which alters the value of a consequence; either a reinforcer or a punisher.
- **Establishing Operation (EO):** An antecedent condition which INCREASES the value of a consequence
- **Abolishing Operation (AO):** An antecedent condition which DECREASES the value of a consequence

ABA Basics

Motivation is key!!

- MOs are value altering
- EO:
  - Feeling thirsty: increases the value of water
  - Feling tired: increases the value of a bed
  - Being late to work: increases the value sitting at your desk
- AO:
  - Drinking water: decreases the value of water
  - Waking after a restful sleep: decreases thel value of a bed
  - Being on time to work: decreases the value of sitting at your desk

ABA Basics

Motivation is key!!

- In addition, MOs have a behavior altering effect
- EO:
  - Feeling thirsty: You are MORE likely to engage in behavior which has resulted in access to water in the past (pouring water in to a cup, asking for water)
  - Feling tired: You are MORE likely to go to your room and lie in your bed
  - Being late to work: You are MORE likely to speed and drive erratically
- AO:
  - Drinking water: You are LESS likely to engage in behavior which has resulted in access to water in the past (pouring water in to a cup, asking for water)
  - Waking after a restful sleep: You are LESS likely to go to your room and lie in your bed
  - Being on time to work: You are LESS likely to speed and drive erratically

ABA Basics

Motivation is key!!

- **Satiation:** A decrease in the frequency of an operant behavior presumed to be the result of continued contact with or consumption of a reinforcer that has followed a behavior.
  - Related to AO
- **Deprivation:** The state of an organism with respect to how much time has elapsed since it last consumed or contacted a particular type of reinforcer.
  - Related to EO

ABA Basics

Motivation is key!!

- Change the behavior by changing environment.
- Create EOs for engagement
  - Put preferred toys in sight, but out of reach.
  - Keep special toys/games/snacks in your office. Tell parents not to provide those stimuli at home.
  - Be FUN!! Follow the child's motivation to or away from specific stimuli/activities.
- Avoid AOs for engagement
  - Provide brief access to preferred stimuli in order to avoid satiation.
  - Use visual schedules, timers, and token boards.
  - Be flexible. Try not to force a child to engage with stimuli they show no interest in.

ABA's influence on my speech sessions: A little knowledge goes a long way

- Understanding the functions of behavior
- Manipulating motivation
- Skill versus performance
- Ignoring inappropriate behavior
- Higher expectations
- Understanding limitations
- Implementation of behavioral supports (visual schedules, etc)

Young child with undiagnosed ASD

(Awareness of required task, Completion of non-preferred task at specific time, Use of motivation)

A few missing pieces…

Early pre-requisites for advanced communication

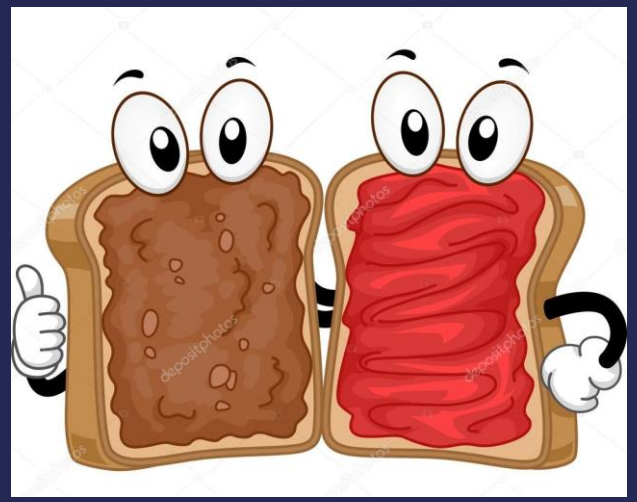
Child must be able to…

- *Get what they want (objects & attention & escape)*
- *Recognize that good things happen when he/she attends to others*
- *Give an intentional response*
- *Tolerate receiving & relinquishing items*

Benefits of speech therapy in ABA programming

- Age appropriate vocal-verbal shaping targets.
- Modification of my programs to meet age appropriate targets for speech/communication.
- Development of programming which may lead to approprate vocal-verbal goals.
- A better understanding of the development of speech leads to higher expectations for my clients.
- Prioritizing specific goals over others leads to faster growth in communicative repertoire.
- Interaction with a speech pathologist offers my therapists a broader view of language development and increase their skill set.

Collaboration 101



- Many similarities
  - *Shared desired outcomes*
  - *Use of preferred toys and objects*
  - *Combined use of structured tasks & "teachable moments"*
  - *Shared behavior management techniques*

- Differences are often complementary
  - *Management of problem behaviors*
  - *Wide variety of skills targeted*
  - *Repeated practice with very specific skills*
  - *High frequency & repetition of tasks*
  - *Intensity of intervention*

Their differences are complementary.

Collaboration 101

- Collaboration at HFHS

- Tools for success
  - *Mutual respect / Belief in value of both disciplines*
  - *Flexibility*
  - *Open communication*
  - *Tolerance of differences / Willingness to "try it another way"*
  - *Shared desired outcome*

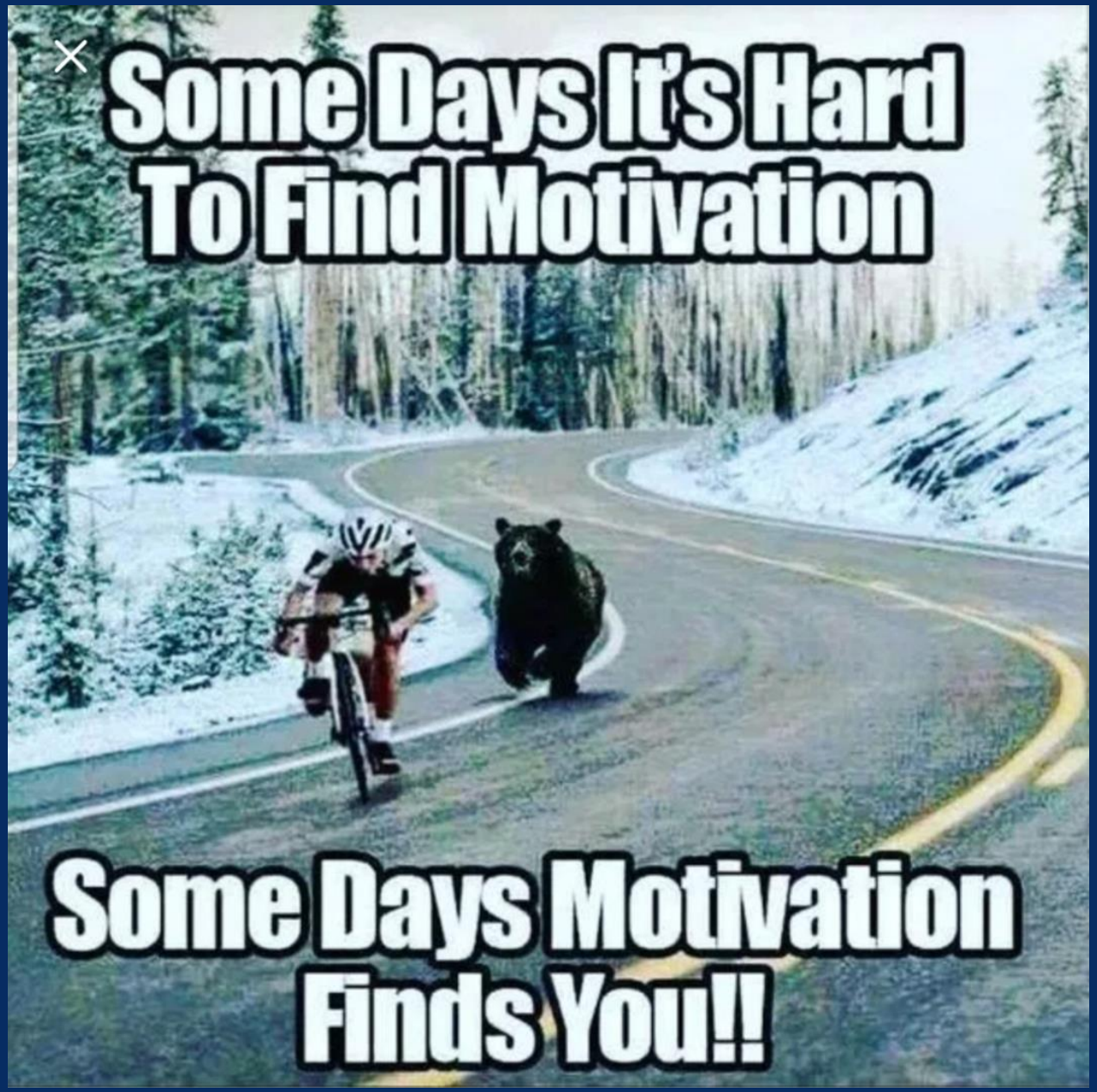
Goal = Increased independence in functional communication and daily living skills.


TEAMWORK
Large ambitious goals usually require that people work together.

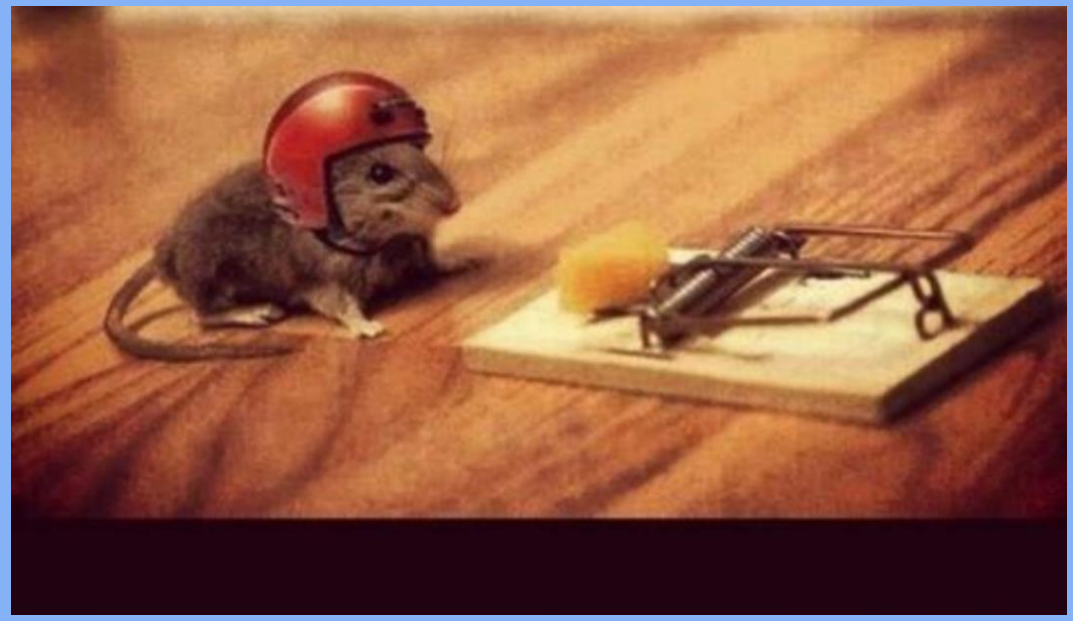

ONE DAY
YOU WILL REACH THE HANDLE, AND WE CAN BOTH GO OUT TO PEE

Utilizing Motivation

- It's why we do anything
- Can drastically alter performance…for better or worse
- Often overlooked in pediatric speech therapy training
- Can be used to our advantage
  - *Find those toys/activities that the child HAS to have and make it the currency of the day.*


Some Days It's Hard
To Find Motivation
Some Days Motivation
Finds You!!


MOTIVATION
It's not that I'm lazy, it's that I just don't care.



Working With Parents

- Speech Therapy:
  - *Parents may or may not be present depending on session.*
  - *Interaction / collaboration with parent varies based on setting / situation.*

- ABA:
  - *Parents not present in therapy room setting.*
  - *Parent presence alters therapist's ability to teach certain behaviors*
  - *Regular caregiver training sessions delivered by BCBA instead*

“I don’t know about you, but they didn‘t issue me a magic wand in graduate school and my magic ball was dropped and busted by my own kids!!! As an SLP, we can have an incredible impact on our students / clients, but we are so much stronger when we work as a team.”

--SLP Shannon Archer on her A GIFT OF SPEECH blog (bit.ly/gift-of-speech)

References

- Bopp, K. D., Brown, K. E., & Mirenda, P. (2004). Speech-Language Pathologists' Roles in the Delivery of Positive Behavior Support for Individuals With Developmental Disabilities. *American Journal of Speech-Language Pathology*, *13*(1), 5–19.
- Bopp, K. D., Mirenda, P., & Zumbo, B. D. (2009). Behavior Predictors of Language Development Over 2 Years in Children With Autism Spectrum Disorders. *Journal of Speech, Language, and Hearing Research*, *52*(5), 1106–1120.
- Brown, J., & Murray, D. (2002). Communication-Based Behavioral Interventions for Children With Autism Spectrum Disorder. *Perspectives on Language Learning and Education*, *9*(2), 8–13.
- Buschbacher, P. W., & Fox, L. (2003). Understanding and Intervening With the Challenging Behavior of Young Children With Autism Spectrum Disorder. *Language, Speech, and Hearing Services in Schools*, *34*(3), 217–227.
- Carr, E.G, & Durand, V.M. (1985). *Reducing Behavior Problems Through Functional Communication Training*. Journal of Applied Behavior Analysis, 18, 111-126.
- Cooper, J.O, Heron, T.E, Heward, W.L. (2014) Applied Behaviro Analysis (2nd ed.). Eddinburgh Gate, Essex, England: Pearson Education Limited
- Donaldson, A. L., & Stahmer, A. C. (2014). Team Collaboration: The Use of Behavior Principles for Serving Students With ASD. *Language, Speech, and Hearing Services in Schools*, *45*(4), 261–276.
- Griffin, R. (2017). Engaging in Interprofessional Practice in Schools: A Case Example. *Perspectives of the ASHA Special Interest Groups*, *2*(16), 71–80.
- Hagopian, L..P, Fischer, W.W., Sullivan, M.T., Acquisto, J., & LeBlanc, L.A (1998). *Effectivenenss of Functional Communication Training With and Without Extinction and Punishment: A Summary of 21 Inpatient Cases.* Journal of Applied Behavior Analysis, 31, 211-235
- Ingersoll, B., Meyer, K., Bonter, N., & Jelinek, S. (2012). A Comparison of Developmental Social–Pragmatic and Naturalistic Behavioral Interventions on Language Use and Social Engagement in Children With Autism. *Journal of Speech, Language, and Hearing Research*, *55*(5), 1301–1313.

References

- Kester, E. S. (2018). Speech-Language Pathologists Engaging in Interprofessional Practice: The Whole Is Greater Than the Sum of Its Parts. *Perspectives of the ASHA Special Interest Groups*, *3*(16), 20–26.
- Marks, A. K. (2018). Interprofessionalism on the Augmentative and Alternative Communication Team: Mending the Divide. *Perspectives of the ASHA Special Interest Groups*, *3*(12), 70–79.
- Mazefsky, C. A. (2012). Managing Problem Emotions and Behaviors in Children With ASD: An Assessment-Driven Three-Step Approach. *Perspectives on Language Learning and Education*, *19*(2), 38–47.
- Mirenda, P., & Brown, K. (2007). Supporting Individuals With Autism and Problem Behavior Using AAC. *Perspectives on Augmentative and Alternative Communication*, *16*(2), 26–31.
- Prelock, P. A. (2002). Interventions for Children With Autism Spectrum Disorders: Making Decisions Based on the Evidence. *Perspectives on Language Learning and Education*, *9*(2), 3–8.

QUESTIONS???

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