A Behavioral Analysis of the DSM-5 Criteria for Autism:
"Failure of Normal Back-and-Forth Conversation"

Mark L. Sundberg, Ph.D., BCBA-D

(www.marksundberg.com)

Introduction

- The historical progression of behavior analysis and autism treatment: from basic to complex behavioral repertoires

- "In a scientific analysis it is seldom possible to proceed directly to complex cases. We begin with the simple and build up to the complex, step by step" (Skinner, 1953, p. 204)

- Conversation is one of the most complex aspects of human social behavior, and is especially difficult for those with autism

- DSM-5: "Persistent deficits in social communication and social interaction"

- DSM-5: "failure of normal back-and-forth conversation"

- What constitutes a "conversation?"

Definition of a Conversation

- An oral exchange of sentiments, observations, opinions, or ideas" (Merriam-Webster)

- "The exchange of thoughts and feelings by means of speech or sign language" (The Free Dictionary)

- "A talk, especially an informal one, between two or more people, in which news and ideas are exchanged" (Oxford Dictionary)

- "Conversation is a complex and perplexing activity" (infed.org)

- "No generally accepted definition of conversation exists... Consequently, the term is often defined by what it is not" (e.g., lecture, interview, giving orders, testimony, greetings) (Wikipedia)

Definition of a Conversation

- Laura Carpenter (DSM-5 collaborator)
- *Failure of normal back-and-forth conversation*
- "Poor pragmatic/social use of language (e.g., does not clarify if not understood; does not provide background information)"
- "Does not initiate conversation"
- "One-sided conversations/monologues/tangential speech"
- Also a negative focus

Definition of a Conversation

- Dave Palmer (2014)
- A conversation is:
  - A kind of social behavior
  - A kind of verbal behavior
- Palmer's (2014) tentative definition:
- "A **verbal exchange** among two or more people in which the responses of each party are controlled in part by the contributions of the **previous speaker**, by the **immediate circumstances**, and by **speakers' histories**."
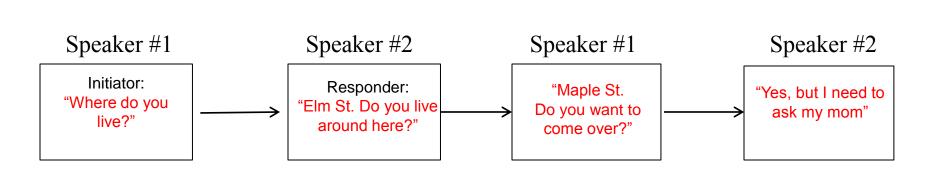
A Behavioral Analysis of Conversation

- Conversation constitutes a type of complex behavior (i.e., multiple and interacting variables are involved)
- Some behavioral operations and repertoires involved in conversation
  - Social behavior
  - All aspects of verbal behavior (both speaker and listener skills)
  - Motivating operations
  - Multiple control
  - Covert self-editing (speaker as a self-listener)
  - Complex types of discriminations (e.g., conditional discriminations)
  - Autoclitic behavior (accompanying verbal information for the listener)
  - Emotions, affect, empathy (respondent behaviors)
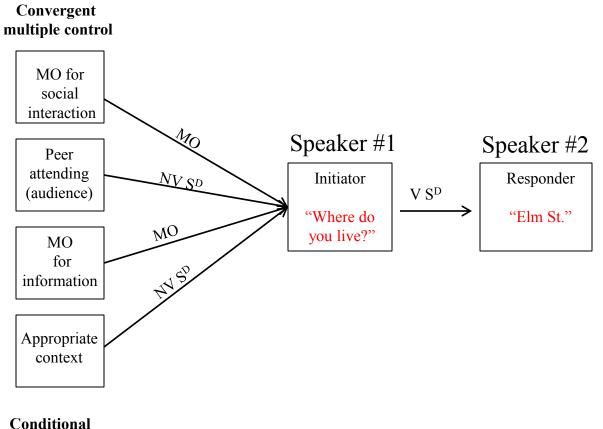 - Accommodate novel variables, produce generative (untrained) behaviors

Three Components of Social Behavior and Their Relation to Conversations

- Nonverbal repertoires (e.g., eye contact, proximity, posture, facial expressions, movement, volume, turn taking)

- Listener repertoires (e.g., attending to a speaker, reinforcing a speaker, minimal interruptions and disruptions, personal motivators controlled, maintaining the topic in the speaker-listener dyad)

- Verbal repertoires (e.g., mands for information, intraverbal responding, tacts, initiating interactions, appropriate content and self-editing, contextual awareness)

- Mixture of repertoires, casual, spontaneous, novel, generative, produces equivalence and emerging (untrained) relations

Conversation: A Verbal Exchange Between Two People
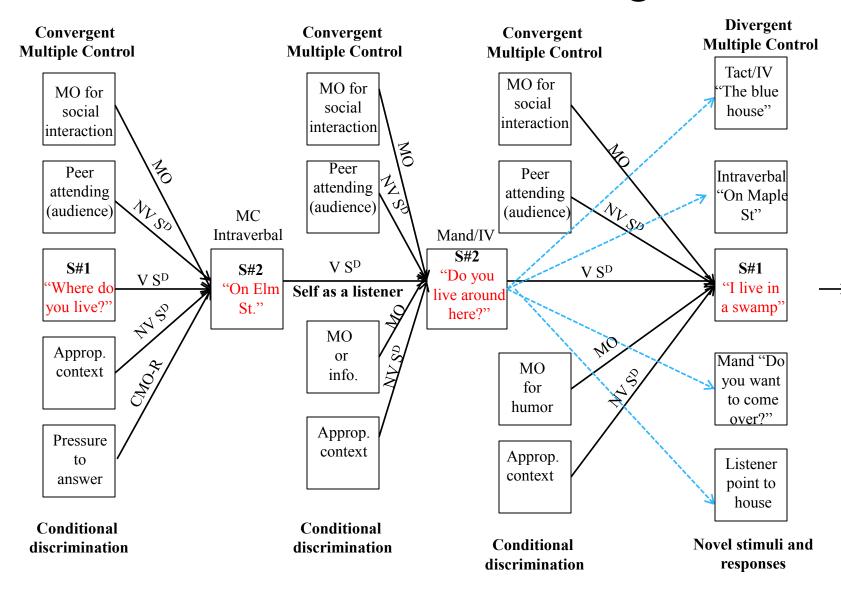
Speaker #1	Speaker #2	Speaker #1	Speaker #2
Initiator: "Where do you live?"	Responder: "Elm St. Do you live around here?"	"Maple St. Do you want to come over?"	"Yes, but I need to ask my mom"

A Conversation: Initiator Mands

Convergent multiple control

MO for social interaction

Peer attending (audience)

MO for information

Appropriate context

MO

NV S^D

MO

NV S^D

Conditional discrimination

Speaker #1

Initiator
"Where do you live?"

V S^D

Speaker #2

Responder
"Elm St."

The Responding Partner and Two Conversational Exchanges

A Behavioral Analysis of Conversation

- Complexity of a single verbal interaction
  - Motivating operations
  - Multiple control
  - Social behavior
  - All aspects of verbal behavior (speaker and listener skills)
  - Complex types of discriminations (e.g., conditional discriminations)
  - Generative based, accommodate novelty, produce emerging relations
  - Casual, no set pattern of variables
  - "Conversation is the medium through which relationships develop" (Palmer, 2014)

Applications: Assessment

- What is a "normal back-and-forth conversation?"
- A specific "conversation" assessment, involving mixed variables
- VB-MAPP Level 3 (30-48 months, typical development)
- Intraverbal assessment (e.g., verbal conditional discriminations)
- Mand assessment (e.g., mands for information)
- Listener assessment (e.g., eye contact, reinforcing the speaker)
- Social skills assessment (e.g., securing and maintaining a listener)
- Motivation assessment
- Multiple control assessment (including conditional discriminations)
- Self-editing assessment (self as a listener)

Applications: Intervention

- Assessment results guide the intervention
- A developmentally-matched conversation curriculum is needed
- Begin with the simple components of conversation (single mand or intraverbal exchange) and build to more complex interactions
- Develop the social nonverbal, listener, and speaker skills
- Target weak or impaired areas (MOs, mand, intraverbal, securing a listener, being a listener, turn taking)
- Merge known verbal and listener skills into a conversation framework
- Build to more complex known variables

Applications: Intervention

- Develop a bank of "conversation starters"
- Use modeling, video modeling, social stories, social games, etc.
- Reinforce approximations, make it fun
- Systematically introduce new variables (e.g., types of multiple control)
- Systematically introduce unpredictability
- Monitor errors and behavior problems, revise when necessary
- Need for measurement, quantification, and analysis protocols
- Research (e.g., intraverbal research has yielded 53 publications in past 10 years)

Summary

- Conversations are a type of complex behavior involving several different repertoires
- "In a scientific analysis it is seldom possible to proceed directly to complex cases. We begin with the simple and build up to the complex, step by step" (Skinner, 1953, p. 204)
- Behavior analysis can be valuable for the analysis, assessment, and intervention necessary for teaching conversational skills
- Clearly, "deficits in back-and-forth conversations" is a problem for most persons with autism and needs to be systematically addressed
- The hope is that the current analysis will stimulate further research and development in this complex aspect of autism

Thank You!

For more information on verbal behavior and links to additional material visit:

www.marksundberg.com