4. In order to afford Ari the opportunity to learn from others, Ari's social contacts throughout the day should be increased—this includes play dates as well as spontaneous interactions in less formal settings like the grocery store.

5. Increase the variety of actions Ari demonstrates during play. In order to learn a variety of different actions we want to interact with Ari in ways that encourage exploration of actions and sounds. One way to encourage this is by joining in his play and then changing the actions or sounds. The more Ari is mutually engaged during these exchanges, the more the play will encourage the use of new actions and sounds.

Please feel free to contact us at (614) 292-9844 if you have questions or concerns.

Paula C. Rabidoux, Ph.D./CCC-SLP
Licensed Speech Therapist

Aly M. Rivero, B.A.
LEND Speech-Language Pathology Trainee

Language Form: Ari's MLU (Mean Length of Utterance of Morphemes) was 1.38 (average for his age is 2.96 – 4.60). This indicates that the length of Ari's utterances is less than most children his age.

Language Content: Ari mainly used single words to label his environment. He verbalized very few actions in his utterances.

Language Use: Ari's communicative functions were limited consisting mainly of naming objects.

Oral Motor Exam: Lips, tongue, and facial musculature appeared within normal limits. Ari's vocal quality was within normal limits.

V. Impressions and Recommendations

At this time, Ari demonstrates a poorly developed pattern of social play, turn taking, and communication skills. His play is solitary and repetitive with little social interaction noted. While Ari stayed in interactive exchanges with physical prompts, he prefers to play alone rather than with others. This results in frequent missed opportunities to learn from others.

The following recommendations are suggested to enhance Ari's ability to communicate successfully in a variety of situations:

1. Improving Ari's ability to stay with others in play. This might include playing in the same activity as the adult, using actions to initiate and respond to others, using functional and meaningful actions with others, and playing more with others rather than alone. Increasing the quality and the quantity of Ari's interactive time with people will provide him with increased opportunities for social learning.

2. Increasing Ari's attempts to imitate others in large and small actions and vocalizations. Learning to "do as others do" is an important goal for learning in general and for communication in particular because it will allow Ari to use others as models for learning new behaviors.

3. Keep Ari attending and interacting during play. Start by doing things that he can do so he can successfully participate. Match the actions he does in order to assure adults come into his world, and not demand he comes into the adult world. Heightened interest will create opportunities for learning and interaction. If and when Ari retreats, it should be the responsibility of the communication/play partner to maintain his participation and attention for at least one more turn in order to begin slowly increasing the length of time he will engage in social interactions.

other aspects of cognitive processing. A standardized score was obtained for Ari, which indicated performance in the low average range.

On the Cognitive Scale, Ari performed the following cognitive skills: assembling objects, matching pictures, representational play, color matching (3 colors), imaginary play, color concept grouping, and understanding the concept of one.

On the Cognitive Scale, Ari had difficulty completing the following tasks: imitating a two-step action, multischeme combination play, size concept grouping, comparing masses, matching size, discriminating pictures, and identifying a simple pattern.

EcoScales

The **EcoScales,** an observational rating scale used to observe child competencies and adult interactions, was utilized with Ari during play with the clinicians. This allows us to systematically observe his interaction, communication, and language-literacy development while he engages in dynamic interactions with others. Ari's competencies and interactive profile is as follows:

Social Play and Turn taking

Ari is not yet habitually interactive, rather he stays interacting with others only briefly. He prefers to play alone rather than with others, and tends to dominate and direct interactions during play. While Ari demonstrated some early pretend play skills (with phone, doll, and face cloth), overall his play was repetitive and unelaborated.

Ari used actions to initiate more than to respond and did not typically take turns or show a sense of give and take. He rarely used functional and meaningful actions in his interactions with others. Ari did not imitate others easily.

Nonverbal Communication and Language

Ari's rate of communicative exchange was limited by his difficulty staying in interactions with others for more than one turn. He required physical prompts to keep interactions beyond one exchange.

Language Analysis

Ari's spontaneous utterances during a variety of play-based activities were obtained. Analyses of this language sample consisted of analyzing language form (morphology, syntactic construction and comprehension, and contextually based variations of form), language content (lexicon at the word level, semantic roles used and understood at the sentence level, topics and topic organization strategies at the discourse level, and the ability to encode and decode information representing general knowledge), and language use (the ability to communicate a variety of intentions to organize conversations, and to use and understand contextually based variation in linguistic and nonlinguistic communicative features).

danger in his environment. Additional concerns include interaction with peers, expressive and receptive language, self-care, and sleep.

Current Communication Skills
Ari follows simple commands. He communicates his needs by vocalizing, gesturing, pointing, or guiding an adult toward something. Ari has some rote words and phrases that he repeats.

Play Skills
Ari enjoys Bob the Builder and Thomas the Tank. Additionally, he enjoys playing with vehicles, animals, and books. Ari plays appropriately with the other children; he shares and takes turns with other children.

Reading/Writing
Ari will listen to a storybook, and he can identify letters and numbers.

Feeding/Swallowing
Ari is a very picky eater and prefers spicy foods.

IV. Testing and Observations

BAYLEY SCALES OF INFANT DEVELOPMENT
(Cognitive Scale)

The **Bayley Scales of Infant Development-third edition (BSID-III)** is a standardized norm-referenced assessment used to examine gross and fine motor, cognitive, visual motor, and language skills in children ages 1 month to 42 months. On the Cognitive and Language Scales, raw scores are converted to scaled scores and range from 1 – 19, with a mean of 10 and a standard deviation (SD) of 3. Composite scores are derived from various sums of subtest scaled scores. The composite scores are scaled to a metric with a mean of 100 and a SD of 15, and range from 40 – 160. The confidence interval describes a band of scores within which the child's true score is likely to fall.

The following is a score summary of Ari's performance on the Cognitive Scale of the BSID-III.

BSID III	Scaled Score	Composite Score	Confidence Interval
Cognitive	7	85	16th (80 - 93)

COGNITIVE SCALE

The Cognitive Scale of the BSID III is designed to assess sensorimotor development, exploration and manipulation, object relatedness, concept formation, memory, and

FAMILY DIRECTED CLINIC
Nisonger Center UCEDD
The Ohio State University

I. Background

Name: Ari Levinson
DOB: 08/31/02
Date: 02/22/06
Chronological Age: 3 years, 5 months
Discipline: Communication/Language
Paula Rabidoux, Ph.D./CCC-SLP
Speech Therapist
Aly Rivero, B.A.
LEND Speech-Language Pathology Trainee

II. History

Ari was seen at the Nisonger Center's Family Directed Clinic for a comprehensive developmental evaluation. He was accompanied by his mother, father, and 4-month old brother.

Ari attends Marburn Early Childhood Learning Center (ECLC) four half days where he receives OT, PT, Speech and APE.

Ari's language was evaluated on three separate occasions using the *Preschool Language Scale – 4* (PLS-4), a norm referenced instrument of general language ability. Initial testing was completed on 10/04 in Kentucky at the Early Intervention program. Later testing was completed at Easter Seals on 8/05, and most recently testing was completed at the Franklin County Board of MR/DD on 11/05. Results by date are as follows:

Subtests	**Standard Score (85-115 WNL)**		
	10/04	**8/05**	**11/05**
Auditory Comprehension (AC)	59	55	61
Expressive Communication (EC)	68	74	73
Total Language Score (TLS)	60	61	64

III. Family Interview

Chief Concern
Mr. and Ms. Levinson indicated concerns regarding safety issues, decreased awareness of surroundings, decreased impulse control, and decreased awareness of

IMPRESSIONS/RECOMMENDATIONS:

In the area of gross motor skill development, Ari was able to perform a variety of functional skills such as stair negotiation, jumping, and running. He appeared to perform many of these skills at close to age level although a standardized motor assessment was not re-administered today. Ari demonstrated functional levels of strength, postural control, range of motion, coordination, and balance during observations of mobility and gross motor skill performance. His school-based PT could continue to monitor his gross motor development and determine his need for continued services n ext school year. Ari demonstrates an emerging ability to imitate motor movements and postures during play activities. Motor imitation skills are important for Ari to integrate his foundational gross motor skills into functional gross motor play activities with peers. It is recommended that Ari continue Adapted Physical Education services to further develop his gross motor development and play skills. At home, Ari's family could help improve his imitation skills through interactive motor imitation activities (reciprocal ball play, songs with hand and body movements, follow the leader, etc).

In the area of fine motor skill development, Ari demonstrated functional bilateral hand use and strength. He demonstrated below average pre-handwriting skills and age appropriate fine motor skills. Although many of Ari's upper extremity movements are functional, additional attention should be given to timing and coordination to improve his fine motor precision. Ari exhibits minimal interest in fine motor activities. Therefore, special emphasis should be given on having participation in fine activities be an enjoyable time for him. Continued occupational therapy services are recommended to continue work on further development of Ari's fine motor skills.

Ari's sensory processing did not overtly appear to affect his overall level of functioning. His behaviors should continue to be examined to determine their true cause(s), such as limited ability to communicate frustration or needing a break from a difficult activity. Additionally, because of Ari's parents report on his difficulty falling asleep independently, consultative occupational therapy services are recommended to provide practical recommendations to address these concerns.

Helen Alexander, PT

Helen Alexander, PT, MHS, PCS
Physical Therapist

Lori Barhorst, OTR/L

Lori Barhorst, OTR/L
Occupational Therapist

cooperation and persistence with structured testing was variable but he participated in unstructured play activities for longer time periods with examiner encouragement.

GROSS MOTOR OBSERVATIONS:
Ari's movement patterns were observed to be symmetrical and coordinated during mobility and self-directed play. There was no evidence of significant muscle hypertonicity or hypotonicity (muscle tone). Ari demonstrated functional levels of strength, range of motion, postural control, and balance during mobility and gross motor skills.

Ari ascended stairs using an alternating foot pattern with a rail. He was able to ascend and descend stairs without a rail using a step to foot pattern. He was observed to jump up, forward, and down from low surfaces. He ran with functional speed and coordination, transitioned to standing through a mature pattern of half-kneeling, and balanced on one leg for functional lengths of time. He was unable to pedal a tricycle and galloping or hopping was not observed. Ari demonstrated good safety awareness during gross motor play activities. Ari reportedly is beginning to play more independently on playground equipment but requires some assistance with more challenging climbing activities; he also likes to swing. Ari placed a ball in the basketball hoop repetitively but would not consistently pass the ball reciprocally with the examiner.

Ari demonstrated the ability to imitate simple motor movements and postures performed by the examiners during play when motivated.

FINE MOTOR OBSERVATIONS:
Ari's upper extremity movements were also observed to be symmetrical and without significant evidence of hypertonicity or hypotonicity.

Ari required encouragement to participate in seated, tabletop fine motor activities. He was able to stack a tower of 10 1" blocks with refined movements of his right hand. Ari initially attempted to string beads on a shoelace but quickly abandoned the task when not immediately successful. He was able to participate in simple bilateral activities, such as throwing a ball, but presented with coordination difficulties with more complex activities. Ari was able to unzip a large zipper with encouragement but no other fastener manipulation was observed. Ari often tended to use an object to interact with another object. For example, he used a small dinosaur to point to a book.

SENSORY INTEGRATION:
Sensory processing and modulation refers to a child's ability to take in sensory information from the environment and from his own body, and process it in the nervous system in order to respond appropriately to the demands of a given task or environment. These sensory inputs include sound, vision, touch (tactile), movement (vestibular), and body position sense (proprioception). No overt "sensory issues" were noted during the evaluation. However, Ari attempted to calm and regulate himself when overstimulated by pushing evaluators away and seeking a quiet place. During the parental interview, it was noted that Ari has difficulty calming himself independently before going to sleep, craving deep pressure from his parents. Therefore, it is felt that a trial use of some compensatory techniques can help in this area.

FAMILY-DIRECTED DEVELOPMENT CLINIC
The Nisonger Center
Physical and Occupational Therapy Assessment

CHILD: Ari Levinson
BIRTHDATE: 08/31/02
AGE: 3 yr. 5 mo.
TEST DATE: 02/22/06
EXAMINERS: Helen Alexander, PT
Lori Barhorst, OTR/L

INTRODUCTION

Ari was referred for a comprehensive developmental evaluation due to concerns about autistic characteristics. Ari attended the evaluation with his parents and grandmother who expressed concerns about his speech and communication skills, social skills, safety awareness, and self-care skills. Ari's family reports that he has made good progress with gross motor skills and express no specific concerns in this area. Please refer to the Developmental Pediatrician's report for details of his medical history.

A physical therapy evaluation was performed in September 2005 as a part of Ari's MFE. Results of the Peabody Developmental Motor Scales (PDMS-2) indicated delays in all 3 gross motor subtests. The therapist indicated that Ari demonstrated a functional level of gross motor development but immature skills in some areas.

An occupational therapy evaluation was also completed in the fall of 2005 as part of Ari's MFE. The PDMS-2 and clinical observations were the assessment tools used. PDMS-2 indicated delayed pre-handwriting strokes, lack of hand preference, and limited tool use especially with scissors. Ari's sensory processing and sensorimotor behaviors were evaluated through clinical observations. It was noted that Ari often attempts to flee the gross motor room but is able to be redirected. Ari enjoys heavy work activities as an organizing input. A Sensory Profile Parent Questionnaire was completed in September 2005 and revealed a definite difference in Ari's sensory processing for the following areas: vestibular processing, multisensory processing, oral sensory processing, sensory seeking, and fine motor/perceptual.

Ari currently attends special needs preschool at Marburn 4 days/week for half-day classes. He receives physical, occupational, and speech therapy services in addition to Adapted Physical Education (APE).

This developmental evaluation for Ari was conducted through parent interview and observation of motor skills during play activities.

CLINICAL OBSERVATIONS:

BEHAVIORAL OBSERVATIONS:

Ari actively explored the testing room and appeared to enjoy a variety of motor movements and activities. He was observed to climb on the slide, steps, play basketball, and engage in play with a variety of toys. Ari's play skills were observed to be self-directed, immature and frequently repetitive; his pretend play skills were limited. He demonstrated brief displays of eye contact and social interaction when approached by the examiners. He participated in a variety of testing activities with the team with consistent encouragement and redirection. His

Neurological Examination: Cranial nerves II through XII appeared to be grossly intact and normal. He seemed to have normal muscle mass, strength and tone. He had a normal walking gait. There were some times when motor planning appeared to be a bit discoordinated. He tended to use both hands fairly equally during today's evaluation. Very limited pretend play skills were seen and Ari, as mentioned, tends to be somewhat repetitive in his play themes.

Impression:

Ari is a youngster who meets DSM-IV criteria for autism by history and observation here today. He scores in the low average range on the cognitive scale of the Bayley III per other team members.

Recommendations:

1. Continue school based services.
2. I strongly recommend Early Intensive Behavioral Intervention as this is a method of autism intervention that has been showed by research to have positive effects.
3. Consider private occupational therapy to work on fine motor skills as well as establishing a sensory diet to assist with self regulation skills.
4. Fragile X testing at some point in the future if Ari has blood drawn. He has already had chromosomes done and they were within normal limits. Further recommendations per Speech and Language and OT/PT.

Karen Ratliff-Schaub, M.D. 3-9-06
Karen Ratliff-Schaub, M.D. Date
Developmental and Behavioral Pediatrics

KRS/ecc

Ari is described as a picky eater who prefers chicken nuggets and spicy or very flavorful foods. About 80% of his diet consists of carbohydrates according to dad. He really does not like any fruits and vegetables. He does eat some cheese and peanut butter and will drink fruit juices. He is able to drink from a regular cup and straw and can feed himself with utensils.

Development;

Ari walked around 12 months of age and is able to pedal a tricycle at school. The parents report that around 12 months of age they noticed that he really wasn't playing very well with toys. Ari does do puzzles, although sometimes gets frustrated if he can't fit the piece in exactly, and will want mom or dad to do it for him. He does scribble some and tends to use his right hand more, although there are still some issues with mixed dominance. Ari is assisting with dressing but cannot dress himself yet. He will undress. The family has not yet started toilet training. Ari is not dry for long periods of time and is not consistently signaling when he is soiled or wet.

Family and Social History:

Ari lives with both parents and maternal grandmother. There is also a 4 month old brother. The parents report that Ari did have some behavioral regression after his brother was born, including severe tantrums. These have improved. Ari seems to like his brother and did come over to him and comment on some of his activities today. There is a family history of Type I Diabetes late onset. There is also a family history of a paternal uncle and some paternal cousins who are reportedly slow in learning language, but then did well without subsequent learning difficulties. There is no history of learning disabilities, developmental disabilities, or mental health concerns.

Physical Examination:

Weight: 37.6lbs (75^{th} %ile)
Height: 40.5in (90^{th} %ile)
HC: approximately 50cm (50^{th} %ile)

Ari was well developed, well nourished, slender appearing youngster in no distress. He did tend to have an open mouth posture. His attention span was somewhat short, although it wasn't clear whether at times he was moving on from one activity to another to avoid interaction with some of the adults and examiners. Ari did make brief eye contact. He had a great deal of repetitive play as well as some repetitive speech (frequently coming to people and saying "hi" for instance). He also did a lot of labeling of objects and used mostly single words. At one point he came and sat down on my lap, a gesture that seemed more intended to use me to sit on rather than to establish interaction. Ari did have some difficulty with some transitions, but generally did fairly well. He showed some fair cooperation for a modified physical exam which was only remarkable for some nasal congestion.

At social gatherings Ari sometimes will join in with what is going on, and this seems to have gotten better. Ari does greet dad when he comes home from work. The parents do report that Ari doesn't really seem to understand emotional reactions, although is starting to offer some of his toys to his baby brother as of way of comforting him when he cries. Ari does bring things to parents to show them to share enjoyment. Language is obviously delayed and has some repetitive features such as echolalia. Ari likes to play with vehicles and toy animals. He likes to look at books and just recently began to allow parents to read to him. He does show an interest in letters and numbers. "Bob the Builder" is a particular favorite right now. The parents don't report seeing much pretend play, but report that most of his play with objects seems to be appropriate. They report that Ari has noticed he numbers on his "Thomas the Tank" engine trains and when counting, instead of saying " 1, 2, 3" about certain objects he will count according to the train numbers, for instance saying "Thomas, Henry, etc." Some regular counting was also heard today. Ari has great difficulty with transitions and with change, particularly from activities that he really likes to do. He does line things up and likes to carry something around in his hands. For a while he was watching vehicles as they rolled. He is starting to respond to the concept of "one more" of something and then "it's time to stop" and also to some positive incentives for stopping activities. He does do some light flicking. He also sniffs new food.

Past Medical History:

Ari was born at term. His birth weight was 7lbs 4ozs after a pregnancy complicated by some spotting after a subchorionic hemorrhage detected at 13 weeks. Ari had some jaundice that was treated at home with phototherapy. He did well after delivery and in general was described as a very easy baby. He has had no hospitalizations. He did have surgery to remove a penile cyst at age 1 year. He has had no serious injuries and immunizations are up to date. Ari does have a history of possible food allergies and possible allergic reaction to penicillin.

The parents report that Ari has generally been very healthy. He does have some nasal congestion currently. He is taking Benadryl currently for allergies and sleep. He did have one episode of balance issues about a year ago that in combination with some staring off episodes necessitated a trip to the emergency room. It sounds like the physicians that saw him did not think seizures were likely and he has not had any further work-up. The parents report that they rarely see spacing out or staring off now and have never seen any balance issues since that time.

Ari sleeps from about 8:30 p.m. to between 6:00-7:30 a.m. He requires being rocked to sleep. The parents report that he is being rocked in a desk type chair near the computer and part of the bedtime routine is to say goodnight to Bob the Builder characters on the computer screen. Ari is then rocked to sleep and placed in the parents bed and requires the parents to be with him if he awakens in order to go back to sleep. He is described as restless but does not consistently snore unless he has some upper respiratory infection. He does not take naps during the day. Ari has reportedly never been able to put himself to sleep without being in physical contact with someone.

THE NISONGER CENTER
FAMILY DIRECTED CLINIC

Name: Levinson, Ari
DOB: 8/31/02
DOV: 2/22/06

Ari is a 3 year 5 month old whose parents report having concerns about a number of different areas of development. The parents have been concerned since about 18 months of age. One of their concerns is that his speech seems delayed. He, by mom's report, has a huge vocabulary but is very repetitive and often times doesn't seem to understand what he is saying. Currently, Ari is using single words approximately 70% of the time with some short phrases. He does some echoing. He still has difficulty with "yes" and "no" questions. He point to things that he wants. He will also take his parents to objects that he wants. About a third of the time when requesting something he squeals and screams and the parents need to guess what he is referring to. He will also point to show objects. He does use some other gestures, including waving and clapping. The parents also notice some unusual pronunciation of certain words, including drawing out and over emphasis of certain sounds.

Ari is attending Marburn Early Childhood Preschool Program four half-days per week receiving OT, PT, speech and adaptive physical education. The parents report that they have not heard about behavioral difficulties in the classroom. They have noticed a large amount of improvements since Ari began that program in the fall.

At home, Ari is noted to have tantrums when told "no" or when he doesn't get what he wants. During these tantrums he will throw toys, scream and cry and also will hit at mom or grandma. He typically will not hit at dad, even if dad is the one who has provoked the tantrum. These are not long lasting tantrums and he can usually be re-directed or he calms down after sitting on his naughty chair. These do not tend to occur on a daily basis. The parents also have concerns about Ari's judgment in potentially dangerous situations. Ari is noted to try to run off when the family takes him places. Generally this is getting better and the parents report that they can take him out in public. Ari does have difficulty with transitions and his attention span has been noted to be short.

Due to the nature of the above concerns, DSM-IV criteria for autism were reviewed with the family. They reported eye contact is somewhat random, although they do not feel that Ari is avoiding making eye contact. He does respond to his name at home. Overall, dad feels that he is less aware of his surroundings than he probably should be. By dads report, Ari will also respond to his parent's attempts to draw his attention to something. With peers at school, Ari is reported to play with them and not be aggressive or otherwise difficult. Dad, however, does not feel that his social skills with peers are age appropriate.