



# 2016 SWOMA Conference: Moving On

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Learning to Move / Moving to Learn:  
A Focus on Early Orientation Development

Presented by

Tanni L. Anthony, Ph.D., COMS

Colorado Department of Education, Denver, CO



# Learning to Move / Moving to Learn: A Focus on Early Orientation Development

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## What is Orientation and Mobility?

Orientation and Mobility or O&M is a profession, which focuses on instructing people of all ages who are blind or visually impaired with safe, independent, purposeful, efficient, and effective travel through their environment.

### Developmental Definition: ORIENTATION:

Orientation can be defined as “knowing oneself as a separate being, where one is in space, where one wants to move in space, and how to get to that place.” It is the “cognitive” component to travel. (Anthony, 1993, p. 116). Simply put, “orientation” means: being aware of where one is in space, knowing where one wants to go, and then getting there. Children must learn about space to know where they are and know where they want to go.

Infancy is a time of constant change. Infancy is a unique period of its own. Early learning is based on senses / actions (looking, listening, touching, moving, doing). The child with BVI is a child first – with temperament (flexible, feisty, fearful), birth order, family dynamics, and cultural overlays. .

Infants are Not Preschoolers. Preschoolers Are NOT School age children. Emotionally, Behaviorally Motorically (fine motor, balance), Academically (ugh)

## Getting Focused on our Role

Supporting learning. Understanding sensory abilities and needs. Creating / tweaking learning environments. Providing multiple opportunities for learning. Recognizing individual differences and experience. Guiding and not teaching.

## The Vehicle of Play

(Linder 2008): Play has long been thought of as the “work” of the young child.” Early-childhood experts agree that play is a both a vehicle to support ongoing developmental growth and a window to interpret a young child’s knowledge and skills.

Learning that comes from WITHIN is the best learning. This is true for conceptual thinking and this is absolutely true for motor development and refinement. Self-powered learning is the most powerful.

The child with BVI may have concomitant disabilities such as other health impairment (e.g., seizures), orthopedic impairment (e.g., cerebral palsy), hearing loss, traumatic

brain injury, speech or language impairment, and/or intellectual disability. Caution – always assume intellectual competence.

## **Stages of Infancy:**

Three primary stages for the first three years of life Based on themes and discoveries. These three set the stage for the preschool years and beyond. Work of Far West Laboratories. This work ties beautifully to developmental Orientation and Mobility. As we review this work, think of the characteristics of BVI and how they may impact each theme.

### **Stage 1: The Young Infant:**

**Age: Birth – 6 months**

Theme: SECURITY

Discoveries: Oneness with caregiver, feeling safe, & organization / regulation of sensory information.

Caregiver-Infant Relationship = Bonding (parents' role) + Attachment (infant's role). "I am loved."

Quote by T. Berry Brazelton, 1993: It is in the first weeks and months of life that children first try to understand and master their environment; and find their efforts encouraged – or not; First attempt to concentrate and find it possible – or not. First conclude the world is orderly and predictable – or not. First learn that others are basically caring –or not; It is in these years that the foundations for later learning are laid down – or not.

### **Attachment Development:**

Babies are hard-wired to develop strong emotional connections with caregivers. Assists with social emotional development and regulation of stress / distress. Baby attends to sight and sounds. Baby sends signals. Caregiver learns to interpret the signals and respond. This is a reciprocal action. Babies develop the capacity to maintain a continuous flow of interaction and experience a range of emotions

#### **Secure attachment:**

Baby develops trust and a sense of who he or she is in relation to the caregiver. (Anne Heintzelman, 9/15)

### **Sensory Development Sequence**

INTERNAL Touch, Vestibular / Proprioception

EXTERNAL: Taste, Smell, Auditory, Vision

## **Factors of BVI Impact Upon Development:**

High heterogeneity within the population: type of vision loss, degree of vision loss, age of onset of vision loss, presence of additional disabilities, family supports, culture

## **Attachment and Mobility:**

Secure attachment is believed to be related to the willingness of infants to venture out into the environment to explore and experience it. Infants' early social-emotional responses elicit and maintain proximity and interactions with other people for protection and survival, and facilitate development in all domains. Warren & Hatton, 2003 O&M must be a confidence-based skill if the child is to be safe, efficient and comfortable in movement and travel. When children develop a confidence base to their blindness skills such confidence will last a lifetime. Cutter, 2007, p. 29

## **Stage 1: Discoveries: Oneness with caregiver (attachment), feeling safe.**

### **Things that can interfere:**

- hospitalizations with care that cannot be controlled for optimal consistency,
- predictability,
- customized sensory approach for the child's BVI needs.

Communication signals may be less obvious and the impact of BVI may not be well understood by primary caregivers. Signals not read at all or misinterpreted, wait time not provided. Presence of other disabilities may further confound communication signals. Beginning of decreased incidental learning.

### **Risks to Secure Attachment:**

- Biological - Conditions that affect the child's ability to send signals or to respond to caregiver's input.
- Parental - Conditions that impact consistency / predictability of caregiving routines such as poor health and/or mental health, substance abuse, unhealthy relationships.
- Environmental - Poverty, poor safety / security

## **Attachment Strategies By Anne Heintzelman (9/15)**

### **Interview Caregiver:**

How clear are the baby's cues? How does the child's respond to touch, holding, care routines? How does the parent experience the child – hope, pleasure, concern, despair? What are the supports for the parents? What are the barriers and solutions? How to match parent's expectations to the baby's capacity. How to help read cues, identify strengths, and needs. Put in context.. "I wonder what it is like for you, baby?"

## **Attachment Strategies:**

Body / movement interaction is a powerful attachment beginning. (Van Dijk's resonance phenomena). Tactile interaction is often a good way to elicit a parent/child response. Reading a quiet / still face or body may be a listening child who is waiting for the next steps. Watching the child's hands will inform whether a child is asking "where are you" or "I am here." Body orienting to sound may be a way to establish joint attention.

## **Stage 1: Discoveries: organization / regulation of sensory information - Internal / External Sensory overload:**

Internal variables that compromise sensory regulation abilities. Too much external information, unpredictable information. Caregivers and professionals may not understand the presence /actual diagnosis of BVI and the environment may not be "controlled" for the child. May not read how sensory information is missed, fragmented, or overdone. The child is dependent upon others to filter / customize.

## **Sensory Processing:**

Sensory processing involves two major components.

- Arousal—the ability of children to maintain and transition between different sleep and wake states
- Attention—the ability to focus selectively on an object or task

## **Arousal States:**

Deep sleep; Light sleep; Drowsy; Quiet alert; Active alert; Crying.

Young children learn and attend best in the quiet alert state. Increasingly more time in this state – which opens the door to taking in information. Their perceptual information is the basis for early self-knowledge. Very young babies (3 months) will lean into a visual scenario to gain more information – moving toward... As physical capacity grows, so does awareness and knowledge of the world.

## **Signs of Sensory Overload:**

Grimacing; Frowning; Finger splaying; Back arching. Changes in respiratory rates; Sneezing; Yawning; Hiccupping; Averting gaze; Changes in complexion

## **Detail Likes and Dislikes**

People; Objects; Places; Clothing; Sounds / Music; Touch Styles / Movement. Vibration / Rhythm / Resonance; Colors / Lights / Reflection; Scents / Tastes

(Kathee Scoggins)

## **Auditory Localization Sequence:**

Sounds presented directly at ear level; Sounds presented at ear level and downward; Sounds presented at ear level and upward; Sounds presented directly upward, and Sounds presented in front of child's body and at almost any other angle

## Promoting the Development of Auditory Localization:

Note children's reactions to sounds. Allow children to explore the source of the sound. Label sound source. Encourage older children to travel to the sound source

## Strategies to Encourage Hearing in Routines:

Introduce sounds and their sources in the course of the daily routine with objects and events that are meaningful to the child. When possible, present sounds initially in isolation to avoid auditory figure-ground confusion. Take a moment to listen to and investigate sounds in home, the neighborhood, and community. Monitor children for overstimulation and hypersensitivity to specific sounds and settings. Lowry, 2004

## Echolocation/Spatial Hearing:

Echolocation or spatial hearing allows the traveler to: avoid large objects, use sound to trail, locate openings, and detect large spaces.

## Spatial Packaging Strategies:

Provide physical boundaries to define space and provide a surface for the child to "work off of" – especially with their feet. Place baby on an adult's reclining chest as opposed to directly in a horizontal prone position. Serves as a human resonance board. Place baby over a boppy pillow or blank roll to break up full horizontal prone position. Use a wedge so the baby's head is slightly elevated than feet and bottom while in a prone position. (Greeley & McCall, 2005)

## Spatial Packaging Strategies:

Bell bracelets at wrist and ankle can provide arm and leg movements. Body games with specific body movements. Play rolling games accompanied by songs, rhythms, and using gentle movement. Use a play space that invites reaching to the side. (Greeley & McCall, 2005)

## Stage 2: The Mobile Infant:

**Age: 6-18 months.**

**Theme: EXPLORATION**

"I am worthy of love" = child prepares for early separation (moving out into space – what is needed for budding orientation skills at this point?)

## Moving on Out!

At nine months, a baby begins to think about his or her own bonding. Prior to this time, it is more sensory recognition. This is timed with independent ambulation when he or she begins to physically separate with the caregiver.

## Concepts:

Concepts are mental representations of images and ideas and, for orientation and mobility, can be categorized as: body concepts, object concepts, environmental concepts, and spatial and positional concepts. Long & Hill, 1997; Skellenger & Hill, 1997

## **Important Body Concepts:**

Body parts and planes (e.g., top/bottom, front/back, sides) and their relationships; Body movements—entire body and body parts such as arms or legs (e.g., up/down, backwards/forwards). Body positions and movements in relation to objects (beside, between, over/under, in/out); Laterality/ Directionality (left/right sides of body); Laterality in relation to objects

## **For Example: Body Concept:**

Body concept describes the ability to perceive and understand the positions or potential positions of one's body.

## **Object Concepts:**

Object concept refers to understanding what an object is and, later, its function and meaning. Through repeated and meaningful experiences with objects such as bottles, rattles, and rubber squeak toys, infants begin to recognize the sensory features of objects. This should include objects tied to O&M such as a long cane. Objects used in daily routines and natural learning opportunities help children to anticipate and participate in daily routines.

## **Spatial Concepts:**

In order to move effectively and efficiently, children must use sensory information to establish their position in space and their relationship to significant objects in space. To achieve this spatial orientation, children must understand self-to-object and object-to-object relationships. Cognitive maps of these relationships facilitate efficient independent travel. Long & Hill, 1997

## **Vision and Spatial Concepts:**

Vision permits simultaneous perceptions of multiple objects and allows individuals to perceive distant environmental features. Most environments have abundant visual information that is continuous, unlike auditory or olfactory input. Children with some useful vision have better spatial concepts than children without vision. Long & Hill, 1997; Warren, 1994

## **Mapping of Proximal Space:**

Children begin to express interest in learning “what is out there.” Defined spaces will help the child learn about the world beyond the body. A “Little Room” can help a child learn to map proximal space (Nielsen, 1992).

## **Mapping of Distant Space:**

Children are able to understand sound cues within the environment, recognize landmarks within the environment, and move with goal-oriented intention (e.g., rolling toward a parent's voice). Anthony et al., 2002

## **OP, CE, and ME!**

Object permanence is the development of internal mental images of objects not directly within immediate experience or perpetual range. Typically developed by nine months of age. As memory increases, child is becoming intentional with behavior and communication! Means-end causality and means-end concepts are gearing up.

### **Variations to Exploration:**

Lack of secure base (physically and/or emotionally); “Realistic” delays of object permanence; Reduced physical readiness; Poor reinforcement for movement and exploration; Limitations of experience; Over-protectiveness of caregivers and professionals.

### **Stage 2: Discovery “Hatching;” first movements away from immediacy of the caregiver**

Orthopedic / other health impairment challenges may confound volitional / self-initiated movement (base to move is compromised – movement is compromised). The lures (reinforcers) may not be matched to the child’s BVI needs. –

### **Stage 2: Discovery - Decreased Object Permanence:**

Children with significant visual impairments cannot readily perceive the: physical layout of their environments; spatial relations among objects; spatial relation of self to the object and physical space

### **Cognitive Development Drives Purposeful Movement:**

Children with severe visual impairments do not locomote—move purposefully and independently—until they acquire the object concept, the understanding that objects exist even though they may not be directly perceived. Bigelow, 1986, 1990, 1992; Fraiberg, 1977; Rogers & Puchalski, 1988; Tröster & Brambring, 1993; Warren & Hatton, 2003

“Before the blind baby is able to achieve a direct reach on a sound cue alone, he must be able to solve a conceptual problem. When he hears the sound of his favorite musical toy “out there,” the sound must connote a thing which has certain tactile and acoustical properties which constitute its identify and its wholeness. (Fraiberg, 1968, p. 282)

### **Cycle of Cognition and Motor Ties:**

“As children who are blind begin to master the environment and adequately move within it, they often grow cognitively and physically, their motivation to move and explore further increases; their greater motivation, in turn, ensures the continued expansion of their learning, control, and independence.” (Galloway, 1981)

### **Our Work: The Three Ps:**

Determine and Attend to Sensory Preferences -Provide Safe Proximity to Objects;  
Ensure Opportunities for Repetition / Practice

## **Stage 3: The Older Infant**

**Age: 18-36 months**

**Theme: IDENTITY**

“I am capable of love.” True instruction of orientation concepts

### **Promoting Independence:**

Independence requires active involvement in a wide range of daily routines at home and in childcare centers (clean-up, meal times, dressing, etc.) Participation does not need to be complex—it can be very simple and brief for young children.

### **Identity is Accomplished By:**

- Freedom to make choices.
- Opportunities to be independent.
- Expectation of initiative.
- Peer interaction opportunities.
- Ongoing expansion of play and recreation skills.

### **Stage 3: Identity - Increasing self-initiative, showing unique interests, taking charge.**

- Reduced incidental learning.
- Lack of meaningful experience to become proficient (frequency).
- Ties to expectation / interest / repetition opportunities.
- Passivity / Learned helpless Overprotection

### **Promoting Independence:**

Without the ability to visually monitor the environment, children with visual impairments may exhibit wariness. Families, caregivers, and interventionists of infants who are blind must be extraordinarily persistent in motivating their children to move out into the world. Often, families and caregivers also must overcome their own fearfulness and tendency to be overprotective. Lowry & Hatton, 2002

### **Foundational Orientation Skills:**

- 1) Naming and labeling (name hallways, rooms, landmarks, streets, and so on);
- 2) Landmarks and clues (identify and use landmarks and clues);
- 3) Intersections and turns (identify intersections and have spatial awareness of turns); and
- 4) Directions (understand the spatial concepts of right, left, straight ahead, and behind).

Brauner, 2009

## **Naming / Labeling**

(Brauner, 2009): Give meaningful/ consistent names/ labels to: environmental objects; cubbies; doors; hallways; landmarks; structures (playground equipment)

## **Self Familiarization**

(Brauner, 2009): Label four walls of square / rectangle room by #1, #2, #3, ad #4. Each wall should have a descriptive feature. Highlight landmarks by vision / touch / sound. Name hallways or intersections. Back to wall to feel the turn. Name directions. Use pointing to confirm.

## **Tactile Cues”**

Tactile cues can easily be added to an existing environment. This can be as simple as putting a door mat in front of a classroom door to give a landmark to a child traveling down a long hallway.

## **Provide Opportunities to Expand and Challenge Motor Skills:**

Encourage problem solving that requires moving her body such as encouraging her to squeeze behind the couch and the chair in the living room to retrieve a ball that has rolled to this location. Change up the location of an activity that the child enjoys. Container play such as dropping pennies into a metal can be done on the floor in a sitting position or at a lower table in a kneeling position or at a higher table in a standing position.

## **Example Mini-Route:**

Where is the storybook located? In a consistent place in reach of the child, I hope. Part of the daily routine of reading the book can be to have the child retrieve the book.

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Figure 1 Region 11 ESC logo.

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Figure 2 TSBVI logo.



"This project is supported by the U.S. Department of Education, Office of Special Education Programs (OSEP). Opinions expressed herein are those of the authors and do not necessarily represent the position of the U.S. Department of Education."

Figure 3 Two images: IDEAs that Work logo and OSEP disclaimer.