

**AAC & Autism:  
Teaching Communication  
Through Motor Planning**

---

AAC Strategies for Promoting the Development of Communication for Individuals with Autism Spectrum Disorder

**The Center for AAC&Autism**  
Learn. Hope. Share. Succeed.

**LAMP:**  
Language Acquisition through Motor Planning

Thank you...

Pennsylvania Speech-Language-Hearing Association  
Amy Goldman

---

AAC Strategies for Promoting the Development of Communication for Individuals with Autism Spectrum Disorder

**The Center for AAC&Autism**  
Learn. Hope. Share. Succeed.

**The Mission of LAMP**

To improve public awareness of the unique qualities of the power of AAC to change the lives of non-verbal individuals with autism and other developmental disabilities by:

- Providing specialized clinical training to health care professionals, teachers, and parents
- Supporting Clinical Research
- Supporting clients and families with education, resources and information

By the end of this session you will be able to:

1. Describe the five key elements of LAMP
2. Identify the relationship between motor planning and communication using AAC
3. Identify the benefits of using core words to teach communication using AAC

**What is LAMP?**

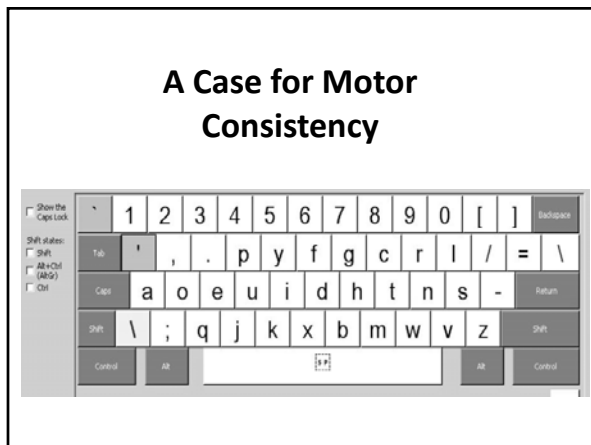
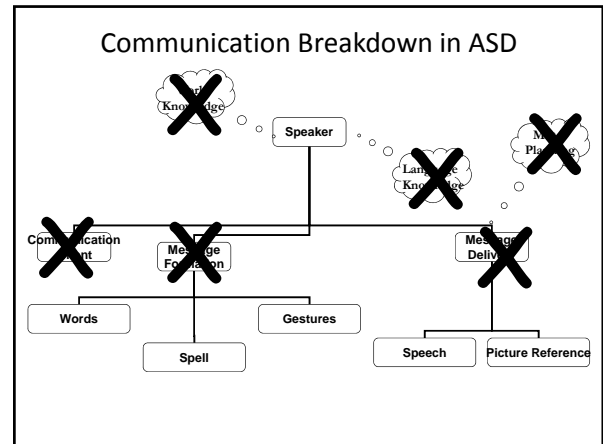
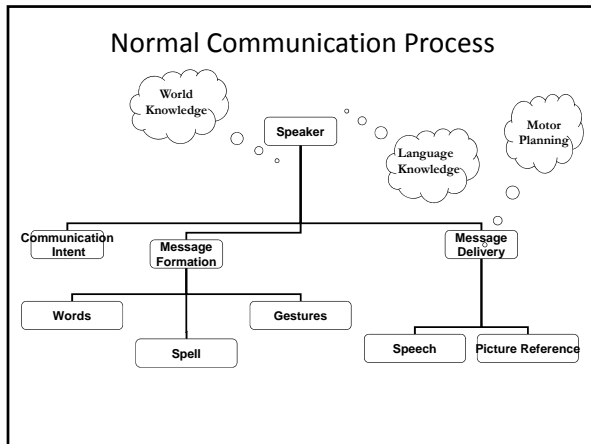
**Language Acquisition Through Motor Planning**

- A therapeutic approach

**What is LAMP?**

**Language Acquisition Through Motor Planning**

- A therapeutic approach
- Built on principles of motor-learning



**"In the practiced automatic *movements* of daily life attention is directed to the sense impression and not to the movement. So, in piano playing, the beginner may attend to his fingers but the practiced player attends only to the notes or to the melody. In speaking, writing and reading aloud, and in games and manual work, attention is always directed to the goal, never to the movement. In fact, as soon as attention is directed to the movement, this becomes less automatic and less dependable."**

Cattell, J.M.

## 1893

### Dziuk et al. (2007)

- found that an impairment in praxis (i.e., motor planning) performance in 47 children with ASD , was broadly associated with measures of the social, communicative, and repetitive behaviors...
- They suggested that dyspraxia may be the core feature of Autism...

Mirenda, P. (2008) A back door approach to autism and AAC; *Augmentative and Alternative Communication*, 24, 220-234


### Ming, Brimacombe, Wagner 2007

- 154 Children with ASD found that 41% of 2–6 year olds and 27% 7-18 year olds showed clear evidence of oral motor and/or hand muscle apraxia

Mirenda, P. (2008) A back door approach to autism and AAC; *Augmentative and Alternative Communication*, 24, 220-234

### Motor Planning Indicators and ASD

**High prevalence of motor planning  
difficulties in ASD**



- > *Speech requires high degree of motor planning*
- > *Automaticity facilitates motor action*

We can take advantage of motor planning when:

- Each word has its own motor pattern due to consistent icon locations
- Motor patterns don't change
- Patterns build upon themselves as language grows

We cannot take advantage of Motor Planning when:

- Significant navigation of the system is required
- Requires continuous visual refocus and visual reorientation
- Large bank of icons to learn
- Same motor plan has different language outcome
- Too many or inconsistent rules for generating language

### What is LAMP?

#### **Language Acquisition Through Motor Planning**

- A therapeutic approach
- Built on principles of motor-learning
- Emphasizes independent access across environments

### Communication Goal

**Same as for all AAC users...**

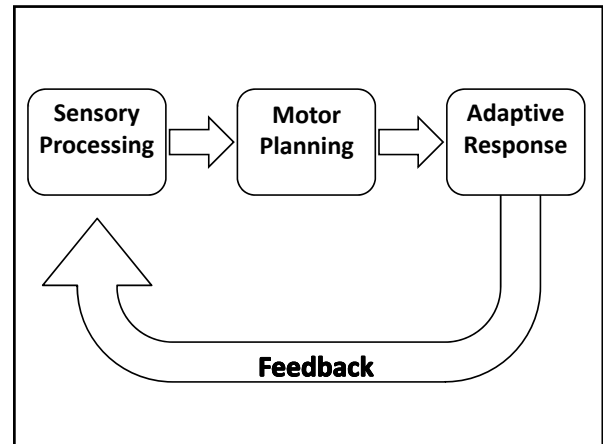
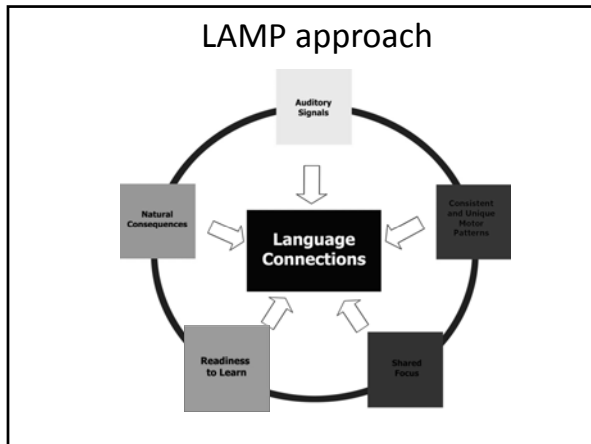
***S: Spontaneous***  
***N: Novel***  
***U: Utterance***  
***G: Generation***

*i.e. expressive, generative communication*

### What is LAMP?

#### **Language Acquisition Through Motor Planning**

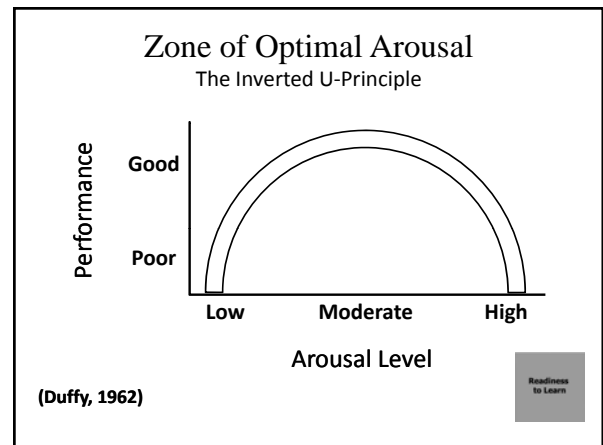
- A therapeutic approach
- Built on principles of motor-learning
- Emphasizes independent access across environments
- Multi-sensory



**“A house will stand if the roof is shaky, but it falls apart if the foundation is not secure.”**

- Jane Ayres

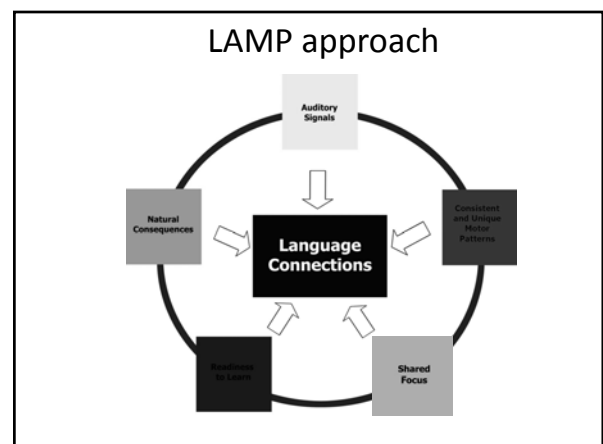
Readiness to Learn



**Considerations for Treatment**

- Enhance or minimize sensory input
- Manipulate sensory input to maintain a “zone of optimal arousal”:
  - Client must be able to orient, discriminate, attend, explore, interact, and learn
  - Match activity to level of arousal
  - Incorporate sensory strategies throughout the day to help maintain appropriate arousal level

Readiness to Learn



***Child-Focused***

Shared Focus

As suggested by Stanley Greenspan, enter the child's activities and follow the child's lead. If the child wants to line up cars in a row or twirl a top, the parents will join the child in his or her preferred activity (*with the intent of developing this action into an affective interaction*) rather than demanding that the child join them in their preferred activity (a process which, at best, will produce no more than rote action and reaction).

From Autism National Committee <http://www.autcom.org/behaviorism.html>

Shared Focus

- Follow the child's lead: Watch for what interests the child and use that interest to create a meaningful language learning experience.
- Join in with the child: Shared focus develops through interaction.

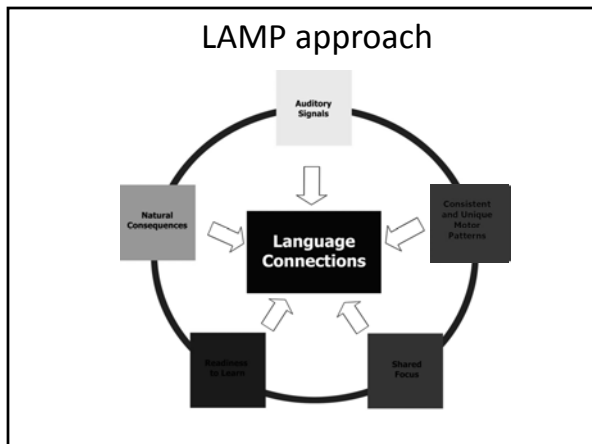
Shared Focus

***Surprising and Novel***

***Purposeful and Intentional***


***Use Movement***

Shared Focus



***LAMP  
LAW...***

Consistent and Unique Motor Patterns

***LAMP LAW...*** 

- Initiating a unique motor plan
- Hearing the word produced by that movement
- Experiencing another's reaction to the word

Consistent and Unique Motor Patterns

***Things to remember:***

- *Device Position*

Consistent and Unique Motor Patterns

***And...***

- *Random Selection and Perseveration*

Consistent and Unique Motor Patterns

**When using AAC,  
teach location, NOT metaphor**

**Why??**

***Stable key location enables  
the development of automaticity***

Consistent and Unique Motor Patterns

**Each consistent pattern of one, two or three hits on the AAC device must always result in production of a unique word.**

Consistent and Unique Motor Patterns