Keynote Address
Mastery Motivation in Young Children

George A. Morgan

Education and Human Development
Colorado State University
Acknowledgements

• American Colleagues:
  K. Barrett, N. Busch-Rossnagel, R. Harmon, C. Maslin-Cole

• European and Australian Colleagues:
  M. Cuskelley, L. Gilmore, K. Jozsa

• Asian Colleagues:
  H.-F. Liao, A.-W. Hwang, J. Wang, P.-J. Wang, Q. Xu

• Many others have shared their DMQ data including
  S.-Y. Huang, K.-L. Lay

• Translation & Assisting with the workshop:
  P.J. Wang , Y.L. Pan, C.L. Chen, H.Y. Liu
What is Motivation?

- A psychological force that leads one to either approach or avoid an object or goal
- Persistence, curiosity, exploration and interest are all general indicators of motivation
- A motivated child is not necessarily highly competent and may not have good skills at the present time
What is Mastery Motivation?

Mastery Motivation is a psychological force that stimulates an individual to attempt independently, in a focused and persistent manner, to solve a problem or master a skill or task which is at least moderately challenging for him or her.

(Morgan, Harmon, & Maslin-Cole, 1990)
Key Features of Mastery Motivation

- Child’s **attempts** to solve problems may not be successful.
  
  Motivation ≠ Competence or ability

- Attempts are **persistent and focused** on a goal or task.

- Task should be **moderately challenging** for each **individual child**. Not too hard or too easy.
Importance of Mastery Motivation

- Early indicators of mastery motivation seem to be precursors of later competence (e.g., Yarrow, et al, 1975; Messer et al., 1986; Jozsa & Molnar, in press; Gilmore & Cuskelley, 2009)
Assumptions

- Infant mastery motivation is primarily *intrinsic* or built into all young children.
- However, there are marked *individual differences*.
- Both *genetics and environment* influence these individual differences, especially as the infant becomes a toddler and older.
More Assumptions

- Mastery motivation is more malleable than intelligence or temperament. It is affected by experience.
- Infants with high mastery motivation will become high in competence later. Attempts to master lead to learning and competence.
Key Mastery Motivation Behaviors

What behaviors are indexes or measures of Mastery Motivation?

Historically, mastery motivation focused primarily on persistence at object-oriented behavioral tasks in infants and toddlers. Two key measures are:

- **Persistence** (task-directedness) at moderately challenging tasks
- **Mastery pleasure**: positive affect during task-directed behavior or just after a solution
Shape Sorter Mastery Task

Tester Demonstrates

Child is Task-Directed (whether or not the shape goes into the hole)
Lock Board Mastery Task

Child Shows Task Directed Behavior

Child is Off Task
Mastery Pleasure
Four Ways of Assessing Mastery Motivation in Young Children

1. Structured, problem-posing tasks
2. Ratings of overall home or school behavior by parent, teacher or self — The Dimensions of Mastery Questionnaire (DMQ)
3. Global ratings of goal-directed persistence during standardized tests or mastery tasks
4. Observations of semi-structured or free play
Structured Mastery Tasks

- Originally (Yarrow et al 1982, 1983) the tasks were selected to be challenging for a typical child of a specific age (for example 12 months)
- All children received the same tasks
- So they were too hard for some and too easy for others
- Later (Morgan et al 1992) developed the individualized task method
Individualized Task Method
(Morgan et al., 1992)

- Sets of similar tasks that vary in level of difficulty
- Select level presumed to be moderately challenging for this child
- If task is too hard, use an easier one
  - If task is too easy, use a harder one until find moderately challenging task
- Task is moderately challenging if this child can solve part of it, but not all of it quickly
Puzzles and Shape Sorters
Easiest to Hardest
Lockboards and Cause & Effect Toys
Dimensions of Mastery Questionnaire (DMQ) (Morgan et al., 2009)

- The DMQ assesses six aspects of adults’ perceptions of children’s mastery related behaviors and also a measure of the child’s competence.
- Used by over 70 samples of 6-month to 19-year olds rated by their parent or teacher, and/or elementary school-age and teens rated themselves.
- Children are assessed on 5-point Likert-type scales of how typical each of 45 behaviors is for the child.
DMQ Scales

**Instrumental aspects of mastery motivation**
1. Cognitive Object-oriented persistence 9
2. Gross motor persistence 8
3. Social persistence/mastery motivation with adults 6
4. Social persistence/mastery motivation with children 6

**Expressive aspects of mastery motivation**
5. Mastery pleasure 6
6. Negative reactions to failure in mastery situations 5

**Ability to master in contrast to motivation to master tasks**
7. General competence 5

**Total mastery motivation scales (1, 2, 3, 4, 5)**

| No. of Items | 35 |
## Sample Items of the Preschool Version of the DMQ

<table>
<thead>
<tr>
<th>DMQ Scales</th>
<th>Example items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive/Object Persistence</td>
<td>Repeats a new skill until he or she can do it well.</td>
</tr>
<tr>
<td>Gross Motor Persistence</td>
<td>Tries to do well at physical activities even when they are hard.</td>
</tr>
<tr>
<td>Social Persistence with Adults</td>
<td>Enjoys talking to adults, and tries to keep them interested.</td>
</tr>
<tr>
<td>Social Persistence with Children</td>
<td>Tries to get included when other children are playing.</td>
</tr>
<tr>
<td>Mastery Pleasure</td>
<td>Smiles when he or she makes something happen.</td>
</tr>
<tr>
<td>Negative Reaction to Failure</td>
<td>Gets upset if he or she cannot do something after trying hard.</td>
</tr>
<tr>
<td>General Competence</td>
<td>Is good at doing things.</td>
</tr>
</tbody>
</table>
Global Ratings of Goal Directed Persistence during Testing

- Nine point rating scale from
  1. No evidence of goal-directed effort to
  9. Very high absorption in mastery tasks, even if they are very difficult for the child
- Can be used to rate the child’s motivation during developmental tests or mastery tasks
Free Play Assessment

- Used by researchers in the 1970s and 1980s to assess infant and toddler motivation (e.g., Jennings et al., 1979, Morgan et al., 1991; Vondra and Belsky, 1991)
- Several different coding procedures, but none widely used by other researchers
- Free play measures are useful for other purposes, but not very good to assess motivation to master challenging tasks
Four Issues

1. Can mastery motivation and competence be separated? Are they inseparably intertwined?
2. Is mastery motivation a useful concept in domains other than for object-oriented tasks?
3. Are there developmental transformations and age changes in mastery motivation?
4. How can we facilitate/encourage high mastery motivation in children?
First Issue

Can mastery motivation and competence be separated?

- **High mastery motivation** but low competence: Some children try hard to do things that are challenging for them, even if they aren’t very good at them initially.
- **High competence** but low mastery motivation: Others are good at solving problems but don’t persist at things they can not do quickly.
- However competence and persistence are correlated for most children.
Mastery Motivation vs Competence

- Early studies found them to be moderately interrelated. Also true of the DMQ.
- Can they be separated? Maybe.
- The individualized assessment method helps by attempting to give every child tasks that are moderately difficult for each of them individually.
- Thus, children with lower developmental ages should get easier tasks that are moderately challenging for them personally.
Second Issue

Is mastery motivation a useful construct in domains other than for object oriented tasks? Is there more than one type or domain of mastery motivation?

Yes.
(Busch-Rossnagel and Morgan, in press)
Domains of Mastery Motivation

- At least 3 types/domains exist:
  - Object-oriented mastery motivation
  - Gross-motor mastery motivation
  - Socially-oriented mastery motivation includes
    - Social with peers, and
    - Social with adults
- Children may be high in one, but low in another domain of mastery motivation.
Third Issue

Are there developmental transformations in mastery motivation?

- Does mastery motivation change as children grow?
- Yes, in infancy. (Barrett & Morgan, 1995)
- Maybe not later.
- But it seems to decline after about age 10. (Jozsa & Molnar, in press)
Developmental Transitions

(Barrett & Morgan, 1995)

Mastery motivation changes as child grows

- **Birth to approximately 9 months**: exploration, interest in novel objects, pleasure when makes something happen
- **9 months to approximately 18 months**: practicing emerging skills and joy at being a cause
- **18 months to approximately 3 years**: persistence at completing tasks, pleasure in meeting standards, and negative reactions to failure
- **Older than 3 years**: persistence at many types of tasks, mastery pleasure, and preference for challenge
Fourth Issue

Can we produce/facilitate high mastery motivation in children?

Probably, but how is complex and not fully understood.
Some Parental Factors Found to Positively Influence Mastery Motivation

- **Early sensory stimulation**: variety and type are more important than amount, especially if stimulation interrupts or controls the child’s behavior.
- **Support for autonomy** versus overprotection, controlling, or interfering with mastery attempts.
- **Contingent responsiveness** to the child’s care cues.
- **Maternal warmth** and positive mother-child affective exchanges.
- **Maternal scaffolding of task**: Unobtrusive guidance, focusing, pointing out critical features.

Based on a variety of research studies. See references.
Some Parental Factors Found to Negatively Influence Mastery Motivation

- Over protectiveness
- Overstimulation and over structuring/highly directive of mastery attempts
- Negative affective exchanges
- Maternal depression
- Parental stress and burden

Based on a variety of research studies. See references.
Actions to Promote in Interventions to Increase Mastery Motivation (1)

- Provide moderately challenging goals
  - Appropriate match between the child’s skill and environment demands.
  - Not too hard nor too easy
- Encourage goal-directed behavior
  - Allow and promote initiation of independent goal-directed behavior
- Reward attention to tasks, effort, and practicing rather than praising the child’s skills and success
- Reward persistence at challenging tasks
Actions to Promote in Interventions to Increase Mastery Motivation (2)

- Promote use of multiple strategies to achieve a goal
- Promote enjoyment of trying and of partial success
- Encourage small steps toward mastery to maintain motivation in the face of challenges and failure in everyday life.

Adapted from
Selected References

Selected References (continued)

Selected References (continued)