Steps to a Decision Making Ecology: Implications for Child Welfare Prevention and Intervention

John D. Fluke, Ph.D.
Children’s Innovation Institute
American Humane Association

2012 Council on Contemporary Families Annual Conference,
Chicago, IL

April 27, 2012
Overview

• The Economics and Psychology of Decision Making
• Decision Making in Child Welfare
• The Decision Making Ecology
• Thresholds and the General Assessment and Decision Making Model (GADM)
• Some Theory on Decision Outcomes
• A Few Question
Understanding Decision-Making Frameworks: Advances in Economics and Psychology

• Economics and Exchange Theory
  – Assumption of rationality
  – People weigh the costs and benefits of a decision and optimize

• Herbert Simon and Satisfying
  – Bounded rationality- we do “well enough”
  – Reason is limited and we do not optimize

• Tversky, Kahneman and Meehl
  – Reason is very limited and we are poor decision-makers
  – Under conditions of uncertainty we use heuristics (rules of thumb) and make errors
  – Thinking fast and slow under different circumstances
  – Cumulative Prospect Theory (choices based on gains and losses)

• Gigerenzer
  – heuristics work a lot of the time
  – Fast and frugal reasoning (based on probability cues)
  – We make the choice with the best cue
Understanding Decision-Making Frameworks: Assumptions

• Assumptions
  – Decisions have psychological (cognitive, motivational and emotional) properties and are at the individual level
  – Decisions have a context
  – People have different thresholds for different decisions
  – People make errors when they make decisions
  – Sources of error and accuracy can be empirically understood and improved upon
Understanding Decision-Making Frameworks: Implicit and Explicit Judgments

• Implicit (Intuitive) Judgments
  – Powers of intuition (fast thinking): Somewhat instantaneous making for efficiency
  – Limits of intuition: The speed can make us error prone when we need to slow down and think about things more

• Explicit Judgments
  – Powers of explicit judgments (slow thinking): The length of processing can make us less error prone
  – Limits of explicit judgments: Cognitively labor intensive and inefficient
The Continuum of Child Welfare Intervention

- Assessments and decisions are made at key points along the child protection continuum.
- Each key decision point requires a specific decision and action.
Research and Risk Assessment
What Do We Know about What is Tied to Risk?

– Prior History of Maltreatment
– Child Disability
– Type(s) of Maltreatment
– Severity of Maltreatment
– Substance Abuse
– Younger children
– Domestic Violence
– Family Stress
– Lacking Social Supports
– Inability to Use Resources
– Provision of Services

“Risk Assessment is Not All There Is”
Len Dalgleish
DECISION-MAKING ECOLOGY (DME)
Decision Making Ecology
(Baumann, Dalgleish, Fluke & Kern, 2011)

- Case Factors
- Organizational Factors
- External Factors
- Decision Maker Factors

Decision Making

Outcomes
Decision Making Ecology

- **Case Factors**
- **Organizational Factors**
- **External Factors**
- **Decision Maker Factors**

Decision Making

**Influences** → **Decisions** → **Outcomes**
GENERAL ASSESSMENT AND DECISION MAKING (GADM) MODEL: THE PROCESS OF DECISION-MAKING
Assessment and decision making are difficult tasks

- Assessments and decisions are based on information that is often unclear, noisy and uncertain.
- Sometimes made under time pressure in a highly emotional atmosphere.
- There are structural and resource constraints, media interest, unpredictability of outcomes.
- This is: Decision making under uncertainty.
Crucial points:
The general model for assessment and decision making.

Separates: The assessment of the situation.
From: The decision to something about it.
– Qualitatively different factors influence assessment and decision making.

Distinguishes: The person’s ability to detect the need to take action (how good they are).
From: The person’s willingness to take action (their threshold).
The Big Problem in Making Decisions Under Uncertainty: An Illustration Using the Receiver Operator Characteristic Curve-Risk Assessment Accuracy Estimate
Effect of Thresholds on False Positives

The assessment has an Area Under the Receiver Operator Curve = 63%: Prevalence assumed to be 10%: Applied to 100,000 children

63,000 False Positives

LOW THRESHOLD

34,000 False Positives

HIGHER THRESHOLD
Assessments and thresholds are influenced by different factors

- The Risk Assessment derives from case information on the Child, the Family and the nature of the current and past concerns.
- Information organized into operationally defined factors.
  E.g. A comprehensive system
  Dalgleish and Drew (1989)

- From Theory, the Threshold for Action derives from the experiences and history of the worker.
  - Possible consequences for the different stakeholders.
  - How the worker values the consequences.
A General Model for Assessing the Situation and Deciding what to do about it - Dalgleish

If the Assessment is ABOVE the Threshold, then ACTION is taken.

If the Assessment is BELOW the Threshold, then NO ACTION is taken.
Decision Making Ecology

- Case Factors
- Organizational Factors
- External Factors
- Decision Maker Factors
- Decision Making

Influences, Decisions, Outcomes
Outcomes/Consequences

• Children
  – Safety
  – Permanence
  – Well-Being

• Workers/Supervisors
  – Satisfaction
  – Turnover
  – Corrective Actions
  – Reorganization
  – Redefinition of Functions

• External
  – Public Anxiety
  – Media Scrutiny
  – Legislative Scrutiny
Cumulative Prospect Theory (Tversky & Kahneman, 1992)

- A psychological theory for explaining non-rational decisions under uncertainty

Principles

- We make choices based on change in gains and losses relative to a reference point; a reference point based on what we have or know. Child Welfare
  - Example: a child is safe at home.

- Given the choice of a large sure loss compared to a chance that we either might not have a loss or have a large loss, we tend to take the risker option; we take a sure gain and do not take a risk even when a risk might increase our gains. We dislike losing more than we like winning.
Cumulative Prospect Theory (Tversky & Kahneman, 1992)

• Principles
  – Given the equal choice of a larger gain and smaller loss we tend to choose neither; asymmetric loss aversion.
    • Example: There is a 50/50 chance If we provide a specific service a child will be safe for 6 months, or the child will certainly be maltreated again in 4 months.
  – We tend to make choices based on very unlikely events as if they are more likely; overweighting unlikely events.
    • Example: Involving the court in a child maltreatment case is a large worry.
Relationships of Gains and Losses in Prospect Theory

1) Relative Utility
   This is illustrated by the curve of the line

2) Loss Aversion
   This is illustrated by the line being steeper for losses than gains

3) Reference Point
   Notice how this is compared to gains and losses on the x axis and utility on the y axis
A CHILD WELFARE EXERCISE IN PROSPECT THEORY
Some Questions

• Worker/Supervisory Level

• Given that Validated Risk and Safety Assessment is Not Very Accurate:
  – Can we improve it?
  – Can we do better at combining risk assessment with a formulation of expertise?
  • How can we provide feedback given that outcomes emerge over time?
Some More Questions

• Administrative and system level
• In the DME can we leverage our empirically based understanding of decision influences to make work force changes in areas like disparities?
  – Example: exposure to families of color
• Can we leverage our empirically based understanding of decision influences to help modify and target services?
  – Example: Supply driven resources such as congregate care
Some More Questions

• Research (there is a growing body of research)

• Can we develop a clearer sense of how to measure decision errors?
  – Example: better ways to define false positives and negatives for key child welfare decisions

• Can we develop a better understanding of decision influences?
  – Example: multi-level modeling: simulation methods
  – Example: applications of prospect theory
  – Example: decision making processes in groups