# TEMPERAMENT IN INFANCY

## What is temperament?
- Biologically based source of individual differences
- Emerges early in life
- Expressed behaviorally
  - Influenced by heredity, maturation and experience over time
- Early foundation for personality

## Features of temperament
- **Temporal:**
  - Latency - behavior onset after stimulus
  - Rise time - behavior escalation
  - Duration - length of behavior
  - Recovery - how slowly behavior fades
- **Intensive:**
  - Amplitude - strength of expressed behavior
  - Threshold - sensitivity to stimulus

### Example

**Temporal features:** how quickly baby cries after rubber band snap and how long they cry after each snap

**Intensive features:** acoustics of cry and properties of rubber band snap - how loud or hard of a snap to elicit crying

LaGasse et al. 2005
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Goodness-of-fit Model
- Between child and the developmental context
- Development is likely to be optimized when the environment is sensitively adapted to the child's temperamental characteristics
- Successful adjustment depends on the interaction between temperament and demands of environment

Niche Picking
- Tool used to select an environment correlated to dispositions
- Ex: highly sociable kids elicit play with adults and this interaction has an effect on their development
- Responses in turn affect development
- High activity child: sports
- Low activity child: reading

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Thomas & Chess
- The New York Longitudinal Study
- Developed questionnaire that allowed parents to rate their infant's temperament along 9 dimensions:
  - Activity Level
  - Rhythmicity
  - Distractibility
  - Approach/Withdrawal
  - Adaptability
  - Attention Span and Persistence
  - Intensity of Reactions
  - Threshold of Responsiveness
  - Quality of Mood

3 broader temperament styles
- Easy babies (40%): positive in mood, friendly, happy and adaptable, approached new situations positively and reacted with low to moderate intensity
- Difficult babies (10%): negative in mood, slept and ate irregularly, became easily upset by new situations, often withdrew and experienced extremes of fussiness and crying
- Slow-to-warm (15%): negative in mood, low in activity level and tend to be very cautious and maintain a wariness of new stimuli at first but slowly adapt to new objects and novel experiences after repeated contact with them

TEMPERAMENT IN INFANCY

Buss & Plomin
- Behavior genetics perspective:
  - Temperament viewed as a set of inherited personality traits
  - Emerges early in life
  - See temperament as early core of personality
  - Exclusively genetic origins
  - Predictable phenotypes remain highly stable throughout life

3 Dimensions
- Same as the "difficult" dimensions used by others
  - Appears very early in life
  - Strongly inherited
  - Dependent on one another
    - Activity level
    - Negative emotionality
    - Sociability

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Rothbart & Bates

Biological and Psychological Factors:
- Temperament defined in terms of reactivity and self-regulation
- Viewed temperament as a biological foundation of personality
- Emphasized development
- Reactivity—excitability or arousability of the individual’s response systems
- Measured in terms of time and intensity
- Self-regulation—processes that modulate reactivity through approach or avoidance, inhibition, or attention

3 Dimensions
- Orienting/regulation—attention focus, inhibitory control, perceptual sensitivity, and low-intensity pleasure
- Broad factors—negative emotionality
- Frustration, fear, discomfort, sadness, and soothability
- Extraversion/surgency—activity, approach, shyness, high-intensity pleasure, smiling and laughter, impulsivity, positive anticipation, and affiliation

Measuring Temperament
- Parent report
  - Invites bias
  - Subjective viewpoint, personality or unique experiences
- Direct observations
  - More objective, but
  - Observer effects—reactions of infants to a stranger
  - Context effects—differences between lab and home observations
- Multi-method approach
  - Combine of home observations and parent report
  - Compare lab observations and home observations

Reliability and Validity
- Reliability: overall consistency with which a measure yields the same information about the same child
  - Test-retest reliability: provides same score on day 1 as it does on day 27
  - Inter-rater reliability: the degree of agreement among raters
  - Intrarater reliability: whether repeated scores that purport to measure the same general construct provide similar scores
- Validity: the extent to which a test measures what it claims to measure
  - Discriminate validity: ensures that concepts or measurements being used are independent and non-overlapping
  - Predictive validity: ensures that a measure provides scores that allow for prediction of later behavior in children

Individuality of Temperament
- Kagan
  - Neural correlates of inhibited and reactive children
  - Behavioral Inhibition
    - Type of temperament that is characterized by extreme wariness and withdrawal in the face of novelty, particularly social novelty, appears early in toddlerhood (12-14 months), and is relatively stable
    - Inhibited children have lower threshold of reactivity in limbic structures
  - Twin Studies
    - Test heredity of temperament
    - Monozygotic (100% shared genes) vs dizygotic twins (50% shared)
    - Indicate hereditary individual differences in emotionality, activity level, and sociability
      - MZ correlations of .50-80
      - DZ correlations of .50 or less
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**Culture and Temperament**

- Studied in neonates or very young infants
- Culture and genes confound each other
- Some observed differences:
  - Chinese American and Japanese American newborns are less perturbable and better able to self-soothe than European American newborns
  - Polish infants showed more positive affect ending laughing high intensity pleasure
  - Japanese and Russian infants showed highest levels of fearfulness
  - Collectivist cultures: children spend very little time away from mothers

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**Gender Differences**

- Few consistent studies showing gender differences
- Some observed differences:
  - Girls rated higher in effortful control
  - Boys rated higher in surgency
  - No differences seen in negative affect
  - Girls show higher levels of fear
  - Genetically based?
  - Culturally stereotypic?

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**Temperament and Cognition**

- Individuality in temperament may affect cognitive processing
- Attributes of temperament can facilitate cognitive performance
- Indirect influence based on responses evoked from others

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**Summary**

- Is rigidly stable?
- Has consistent long-term influence?
- Resists modification?