Fragmentation of Maternal Behavior Differs in Depressed and Non-Depressed Mothers
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**Aims**
- Maternal behavior has lasting effects on child health and development.
- Rodent research (Project 1) demonstrates that fragmented maternal care leads to cognitive impairments and anhedonia in the offspring.
- Little is known about how patterns of maternal behavior influence development among humans.
- **Project 3** aims to assess the long-term consequences of early exposure to fragmented maternal signals, including maternal behavior.
- **Aim 1**: To test the hypothesis that exposure to fragmented maternal care during the early postnatal period increases risk for mental illness.

**Example of T-Pattern**

**Depression and Fragmentation**
- Maternal depression is associated with poor quality of maternal care such as decreased responsibility and sensitivity toward the child.
- Quality of maternal care is associated with increased likelihood for negative child outcomes such as internalizing and externalizing problems.
- The current study evaluates whether fragmented maternal behavior is characteristic of mothers with elevated levels of depressive symptoms.
- **Characterization of maternal depression**
  - Maternal depression was measured using the Edinburgh Postnatal Depression Scale (EPDS).
  - Twenty-two mothers scored 10 or higher on the EPDS, crossing the threshold for possible depression.

**Findings**

**Figure 1.** This figure displays the occurrences of a single T-pattern of a non-fragmented mother throughout one observation. This pattern is 9 behaviors in length and occurs 5 times throughout the observation. This mother may be considered non-fragmented because she has long patterns and displays long patterns repeatedly.

**Figure 2.** Distribution of pattern length among sample.

**Figure 3.** Mothers above the cutoff for possible depression had a shorter maximum pattern length than mothers below the cutoff ($t(133)=2.05; p<.05$).

**Figure 4.** Mothers above the cutoff for possible depression had fewer long patterns (4+ behaviors) than mothers below the cutoff ($t(7.31)=2.82; p<.01$).

**Implications**
- Mothers above the cutoff for possible depression display fragmented behavior when interacting with their infants.
- Inconsistencies in maternal behavioral patterns may be a mechanism by which maternal depressive symptoms affect child cognitive and emotional vulnerability.
- Future work will examine the association between T-pattern characteristics and child mental health.

**Fragmentation of Maternal Behavior**

**Coding of behavioral data**
- Ten-minute free play period for 135 mother-child dyads at 12 months postpartum
- 27 distinct maternal behaviors (including child and toy interaction, vocalizations, and looking behavior) coded continuously in real time
- Average number of events per observation = 287.6 ; Range = 55-492

**Detecting patterns in maternal behavior**
- Theme statistical software used to detect T-patterns
- T-patterns are a set of events that consistently occur within predictable time intervals relative to one another.
- T-patterns consider both the sequence and timing of events.
- Fragmented maternal behavior is defined as unpredictable or disrupted behavioral patterns, such as exhibiting primarily short T-patterns and few long T-patterns.