

BACKGROUND INFORMATION

❖ Internationally adopted (IA) infants often arrive in the U.S. with multiple risk factors (e.g. poor prenatal care, premature birth) and show signs of regulatory disorders and adjustment difficulties.

❖ The adoptive family provides a special caregiving context that will affect the child's regulatory functioning, emotional and behavioral development, and learning later in life.

❖ Although many IA infants show positive adaptations to new environment, these children may have experienced permanent changes to their stress regulatory systems and are at risk for later developmental and adjustment difficulties.

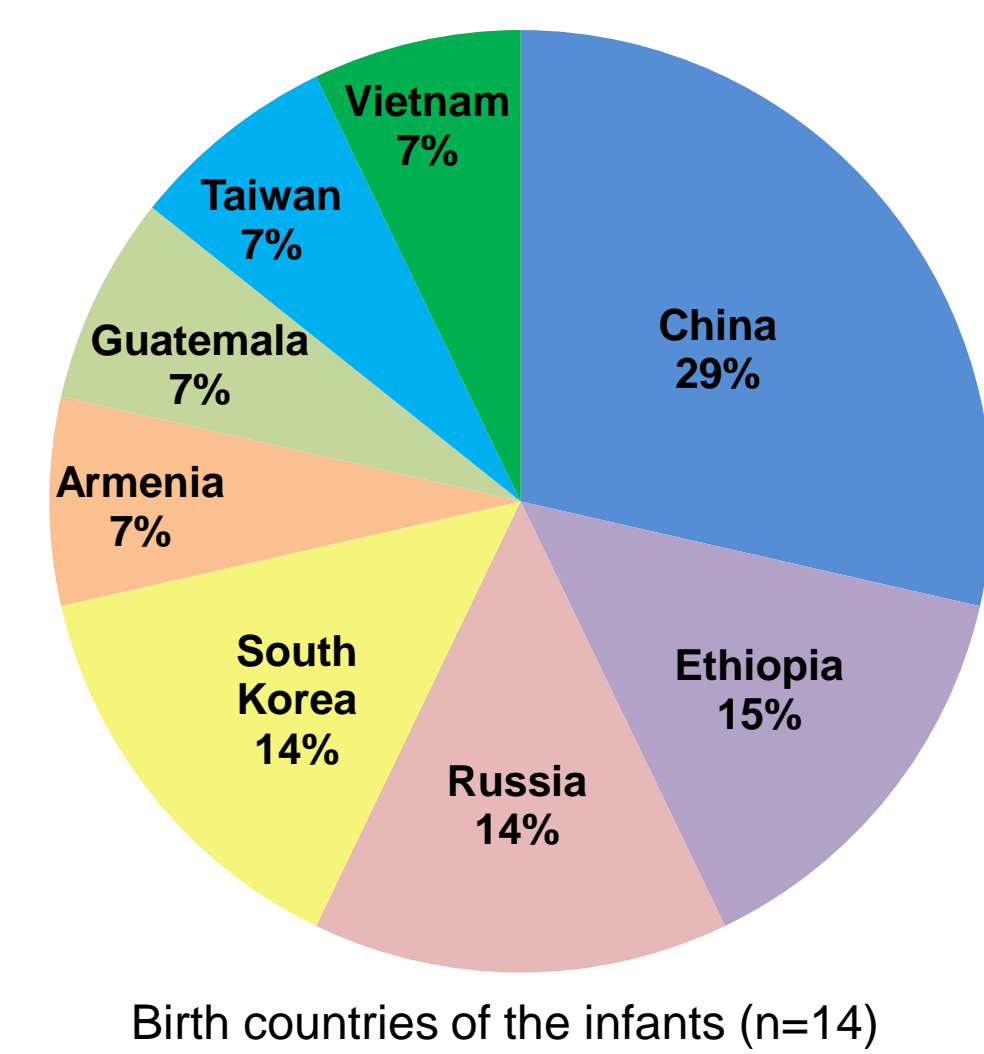
OBJECTIVE

This investigation examined experiences of internationally adopted infants soon (first four months) after placement. Our research examined whether infants might show varied patterns of emotional reactivity and self-regulation across the early months post-adoption. This has never before been investigated in an integrated study.

METHOD

Participants

Infants between six and 20 months were recruited shortly after (within a month) their arrival to the U.S.



	N	Mean	Range	Sample %
Child's age at the first visit	14	14 mths	6 – 20 mths	
Gender				
Female	7	--	--	50%
Male	7	--	--	50%
Pre-placement ^a				
Orphanage	9	--	<1 – 13 mths	64.3%
Foster care	2	--	12 – 12.75 mths	14.3%
Hospital	3	--	<1 – 3 mths	21.4%
Other	2	--	1 – 6 mths	14.3%

^a Some children have experienced more than one placements before adoption

Procedure

❖ Families participated in two lab visits (three weeks post-placement and three months after the initial visit).

❖ Infant heart rate was taken twice and three salivary cortisol samples were collected to assess infants' emotion regulation and stress responsivity. Heart rate was taken at the beginning of the visit and after the two emotion challenges: a loud noise at a safe volume and the presence of a costumed stranger. The first cortisol sample was taken early in the visit. The second cortisol sample was taken twenty minutes after both emotion challenges during a free play period. A third cortisol sample was taken after an additional twenty minutes of free play.

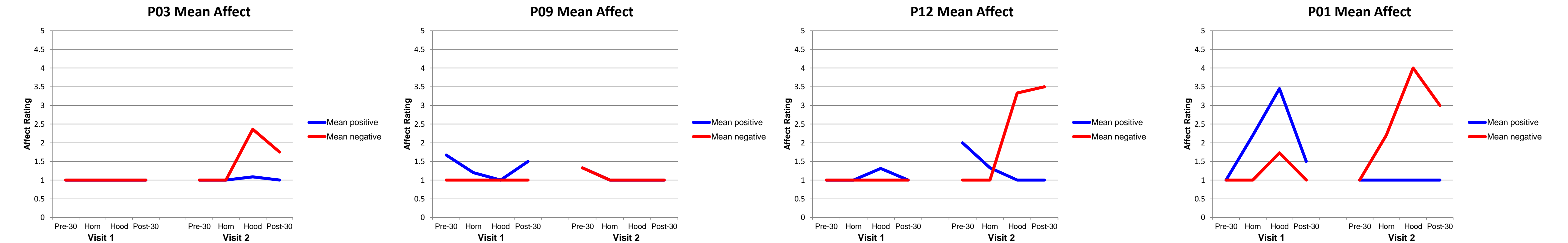
❖ Emotion challenges were videotaped and coded for affective expression and series of behaviors.

❖ The same experimental protocol was repeated three months later.



RESULTS

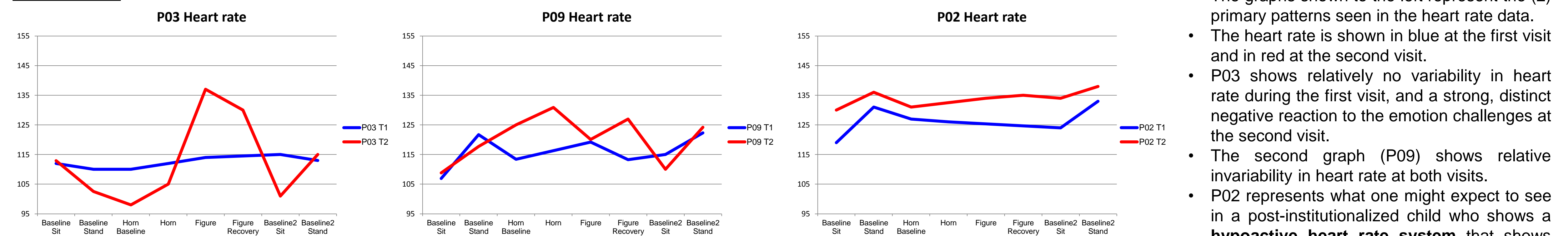
Affective Expression



- The graphs show **mean** affect scores over each laboratory visit.
- Positive and negative affect are coded separately on a scale from 1 to 4.
- P03 shows one of *two primary patterns* in the affect: a child that shows very little or no variance in affect at the first visit, but is much more negative at the second visit.
- P09 shows the *second pattern* seen in the data: relatively little or no affective expression at either visit.

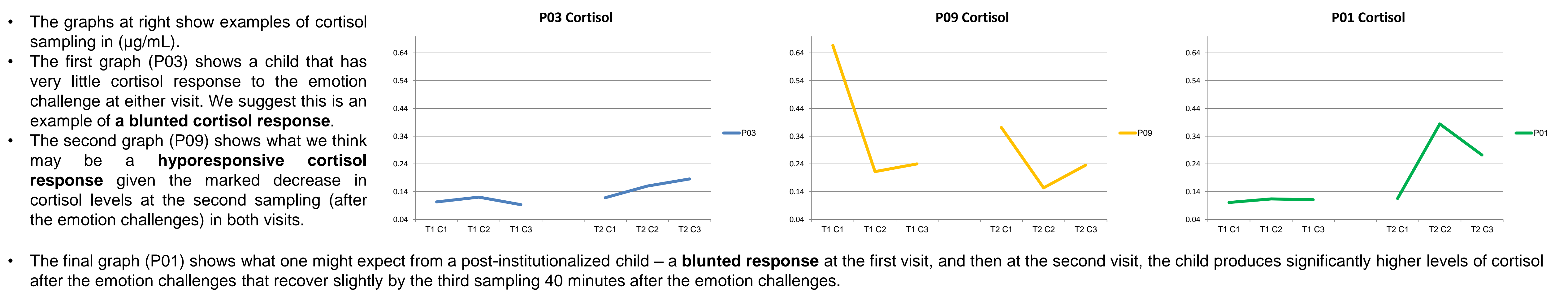
- P12 show a more extreme version of the first pattern, where we see relatively no affective expression at the first visit and an extremely negative reaction at the second visit. The final graph (P01) shows an anomalous reaction where the child was highly positive at the first visit and then highly negative at the second visit. We believe this response may be evidence of **indiscriminant social behavior** often seen in post-institutionalized children.

Heart Rate



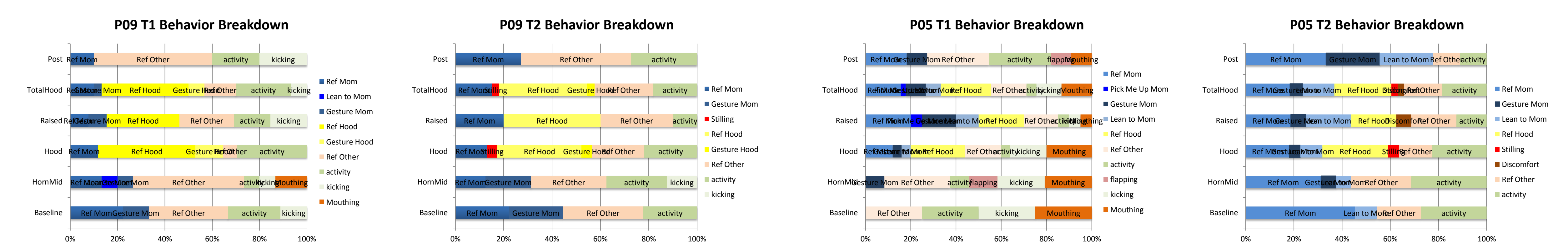
- The graphs shown to the left represent the (2) primary patterns seen in the heart rate data.
- The heart rate is shown in blue at the first visit and in red at the second visit.
- P03 shows relatively no variability in heart rate during the first visit, and a strong, distinct negative reaction to the emotion challenges at the second visit.
- The second graph (P09) shows relative invariability in heart rate at both visits.
- P02 represents what one might expect to see in a post-institutionalized child who shows a **hypoactive heart rate system** that shows recovery at the second visit three months later.

Cortisol



- The graphs at right show examples of cortisol sampling in (ug/mL).
- The first graph (P03) shows a child that has very little cortisol response to the emotion challenge at either visit. We suggest this is an example of a **blunted cortisol response**.
- The second graph (P09) shows what we think may be a **hyporesponsive cortisol response** given the marked decrease in cortisol levels at the second sampling (after the emotion challenges) in both visits.
- The final graph (P01) shows what one might expect from a post-institutionalized child – a **blunted response** at the first visit, and then at the second visit, the child produces significantly higher levels of cortisol after the emotion challenges that recover slightly by the third sampling 40 minutes after the emotion challenges.

Behavioral Expression



- The above graphs show sample behavioral data for two participants at Visit 1 and at Visit 2.
- Secure-base behaviors are in blue. Institutionalization-related behaviors are shown in the red color family. Referencing of the hooded figure is shown in yellow.
- Behaviors are shown as a proportion of the different time intervals we segmented the emotion challenges into: the baseline 30 seconds before the horn, the time period including the horn and the ~30 seconds following, the section labeled Hood includes the hooded figure's entry and approach, the section labeled Raised includes the segment where the hooded figure raises her arms and exits the room and the final section, Post, includes the subsequent 30 seconds after the hooded figure's exit.
- As is shown here, in both participants **we see more referencing of, leaning towards, gesturing to the primary caregiver (usually the adoptive mother) at Visit 2.**

DISCUSSION

❖ While we must be mindful of our limited sample size, it appears that affective expression, behavioral expression and heart rate show a positive correspondence. These three modalities do share temporal resolution, which may contribute to this positive relationship. However, the cortisol data does not show the same positive relationship with the other measurement modalities.

❖ We take this to mean that the systems driving the responses in affect, behavior and heart rate are impacted differently than the stress regulatory system driving cortisol production (the HPA axis) by the same adjustment experiences. We believe this to be evidence that the HPA axis takes longer to show adjustment and re-regulation post-adoption.

❖ The data shows increased secure-base behavior at the second visit, suggesting that internationally adopted infants are forming attachments and that within two to three months post-placement, the adoptive-parent-infant relationship is serving a compensatory function.

❖ This is an ongoing project and we hope to continue recruitment, with future plans of including both non-adopted and domestically adopted comparison samples.