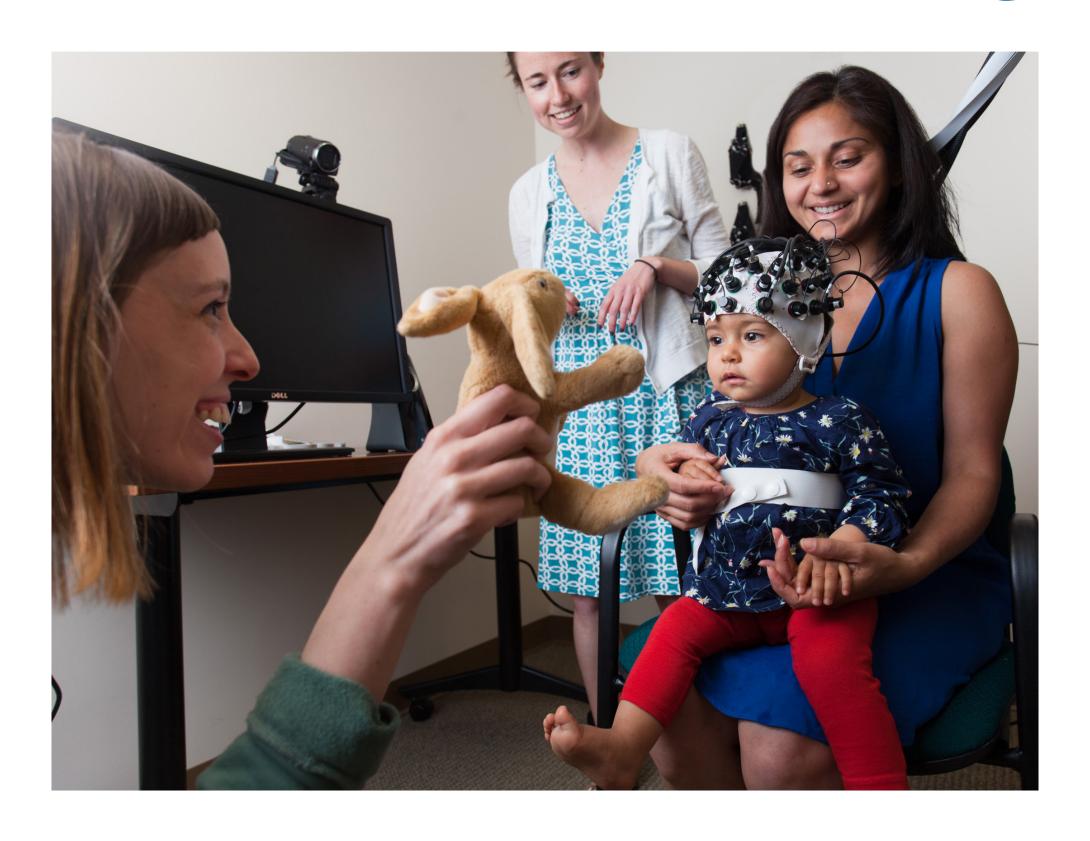
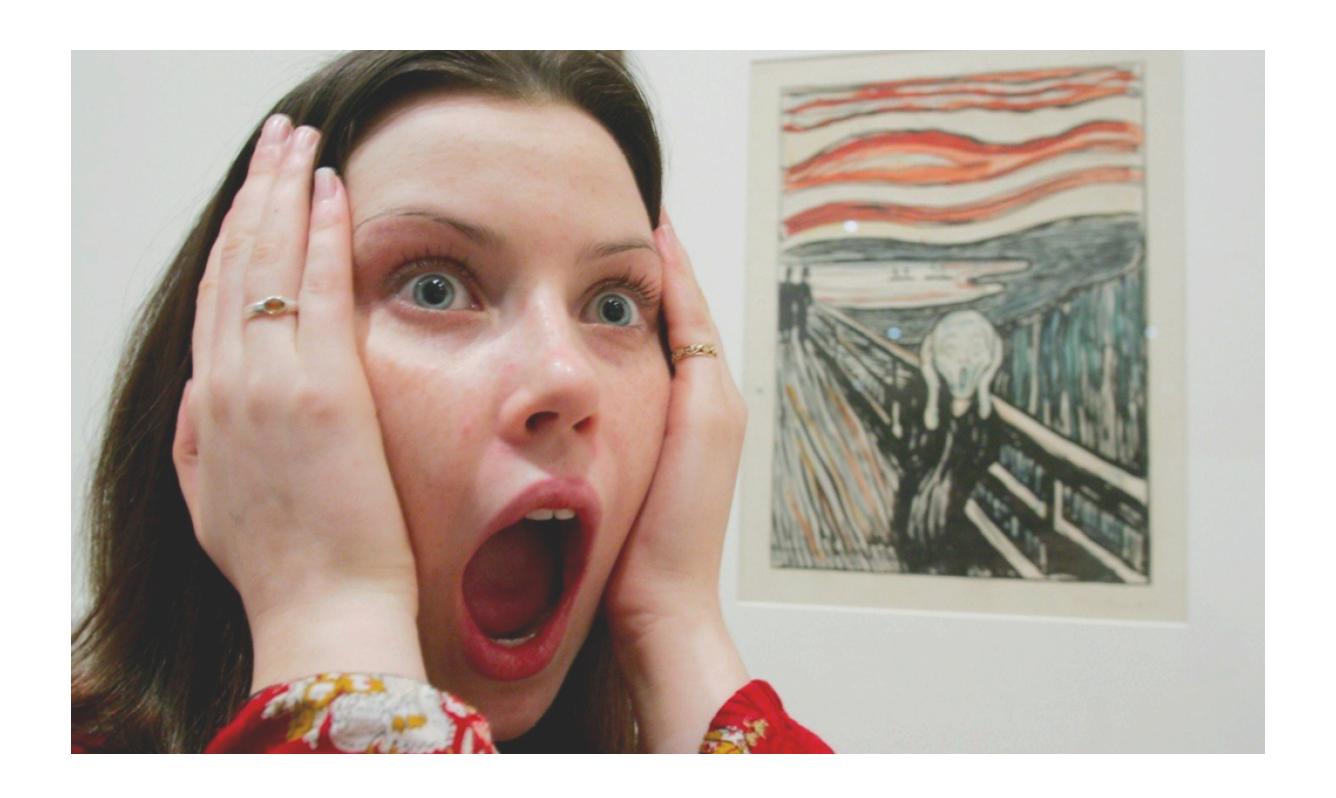
Origins of the caring mind



Tobias Grossmann tg3ny@virginia.edu

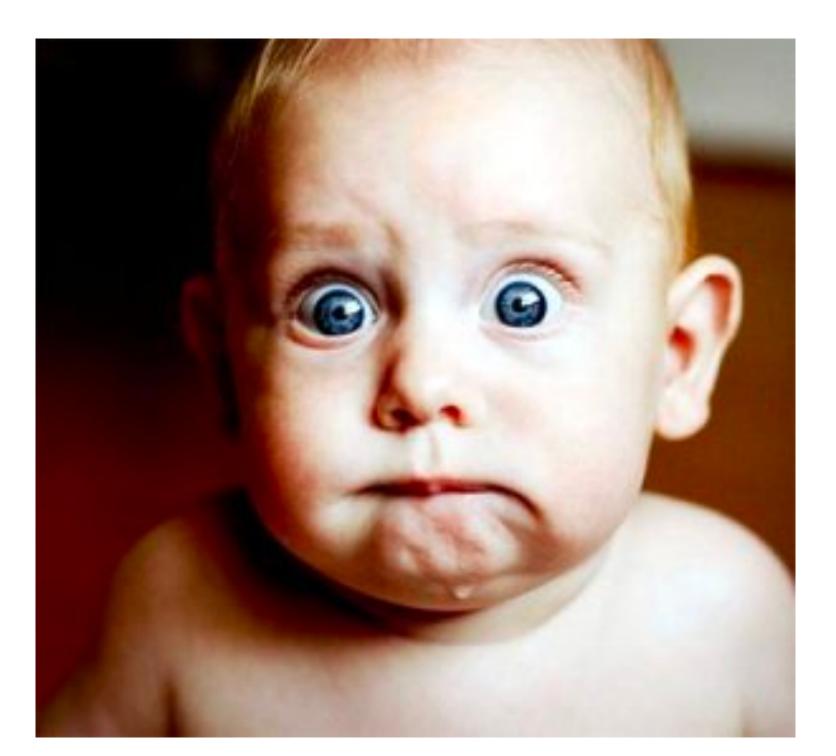






Heightened fearfulness primarily viewed as maladaptive

- increased risk for anxiety and depression





Human infants shown to be more fearful than other great apes

Affective origins of cooperative care

- Part 1. Framework- Rethinking human fear
- Part 2. Evidence- Development
- Part 3. 'De'constructing the paradox- Culture

Cooperative Care



Humans only great apes that engage in cooperative child care

- infants and children cared for by mothers and others

Cooperative Care



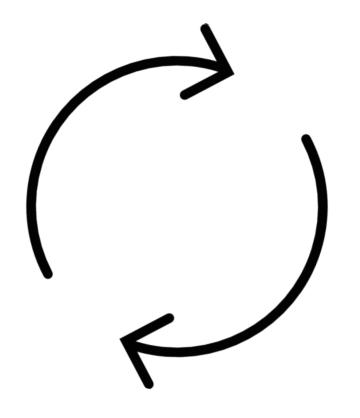
Cooperative care precondition for emergence of enhanced fearfulness

- elicits more care and provisioning from mothers and others (allomothers)

Evolutionary scenario

Fearful infants

Cooperative
Caring
Environment

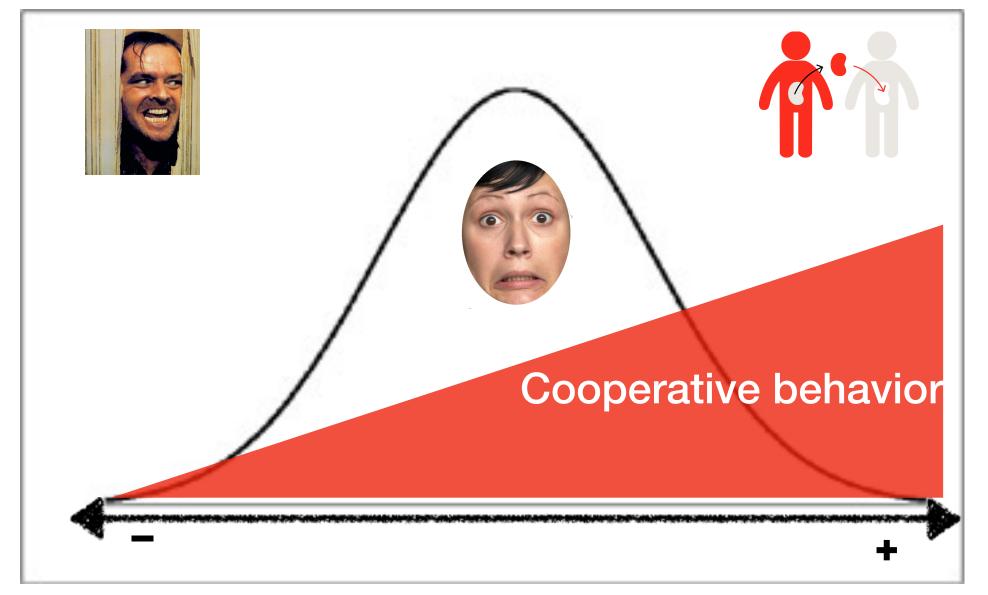


Elicit concern and care in others

Become more concerned, caring, cooperative children, adolescents, parents

Fearful faces as distress signals

Viewing others in distress (fearful face) elicits empathic concern in observer (linked to prosocial/cooperative behavior) in adults



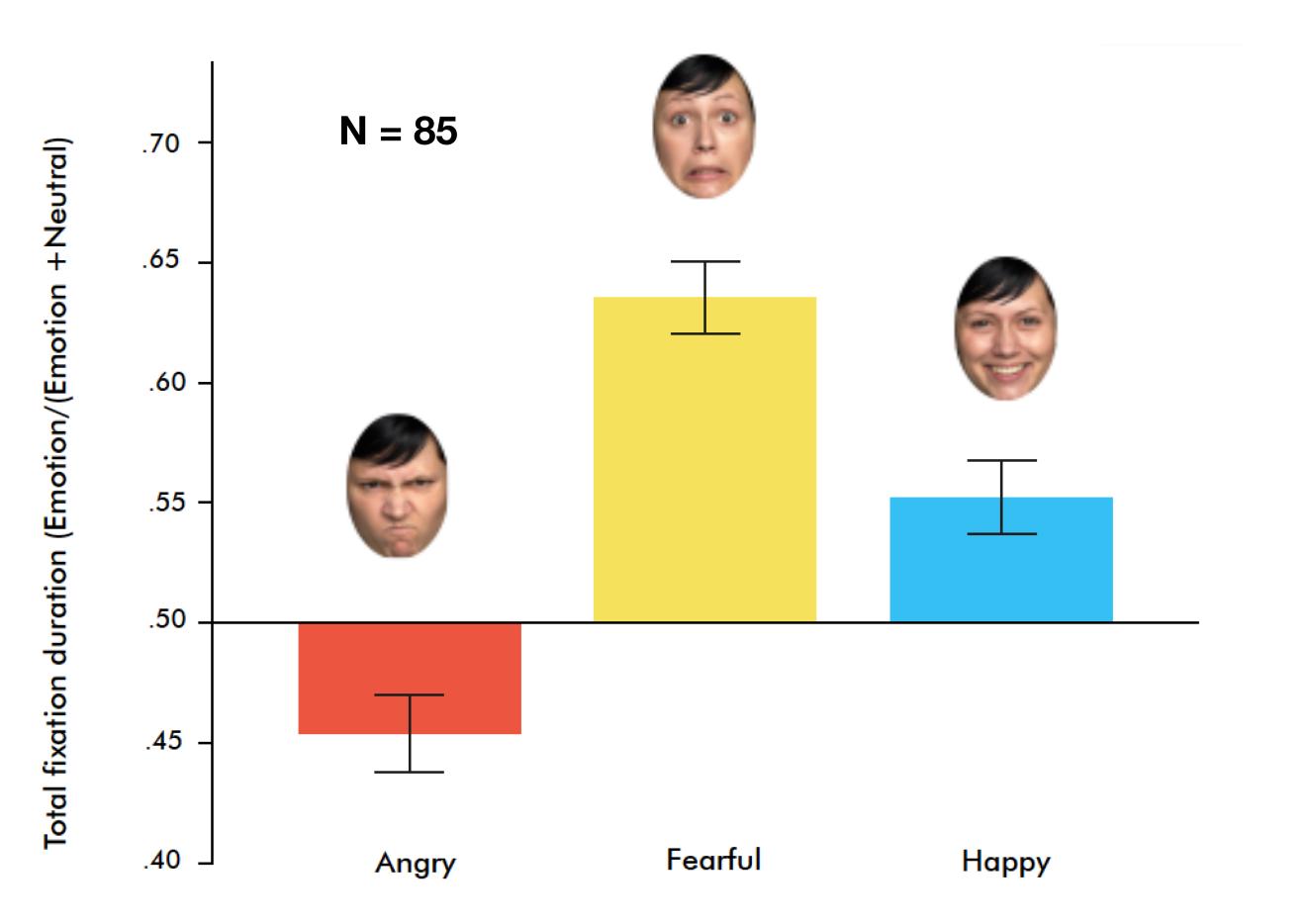
Highly antisocial individuals (psychopaths) show blunted responses to fearful faces, whereas highly prosocial individuals (kidney donors) show enhanced responses to fearful faces

Response to fearful faces 'empathic concern'

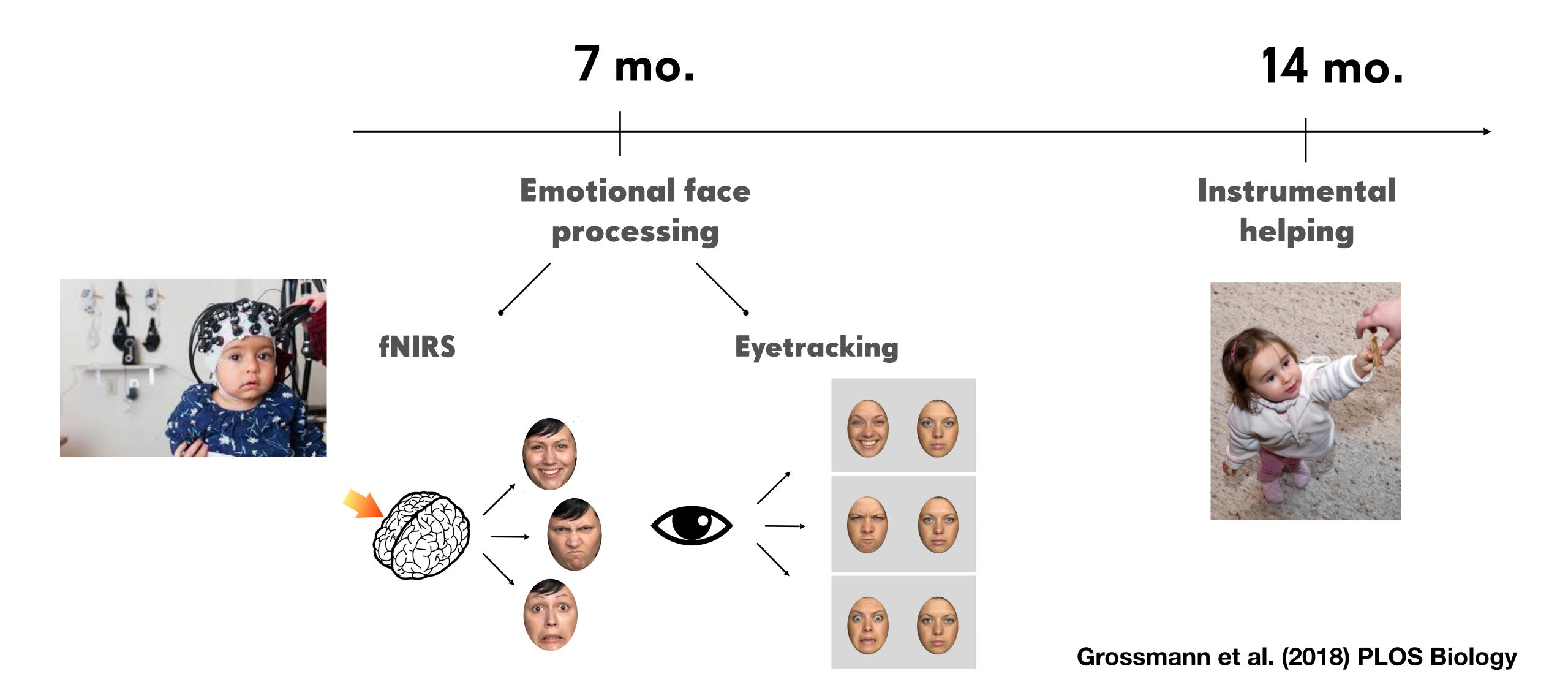
CARING CONTINUUM

Fear bias in infancy

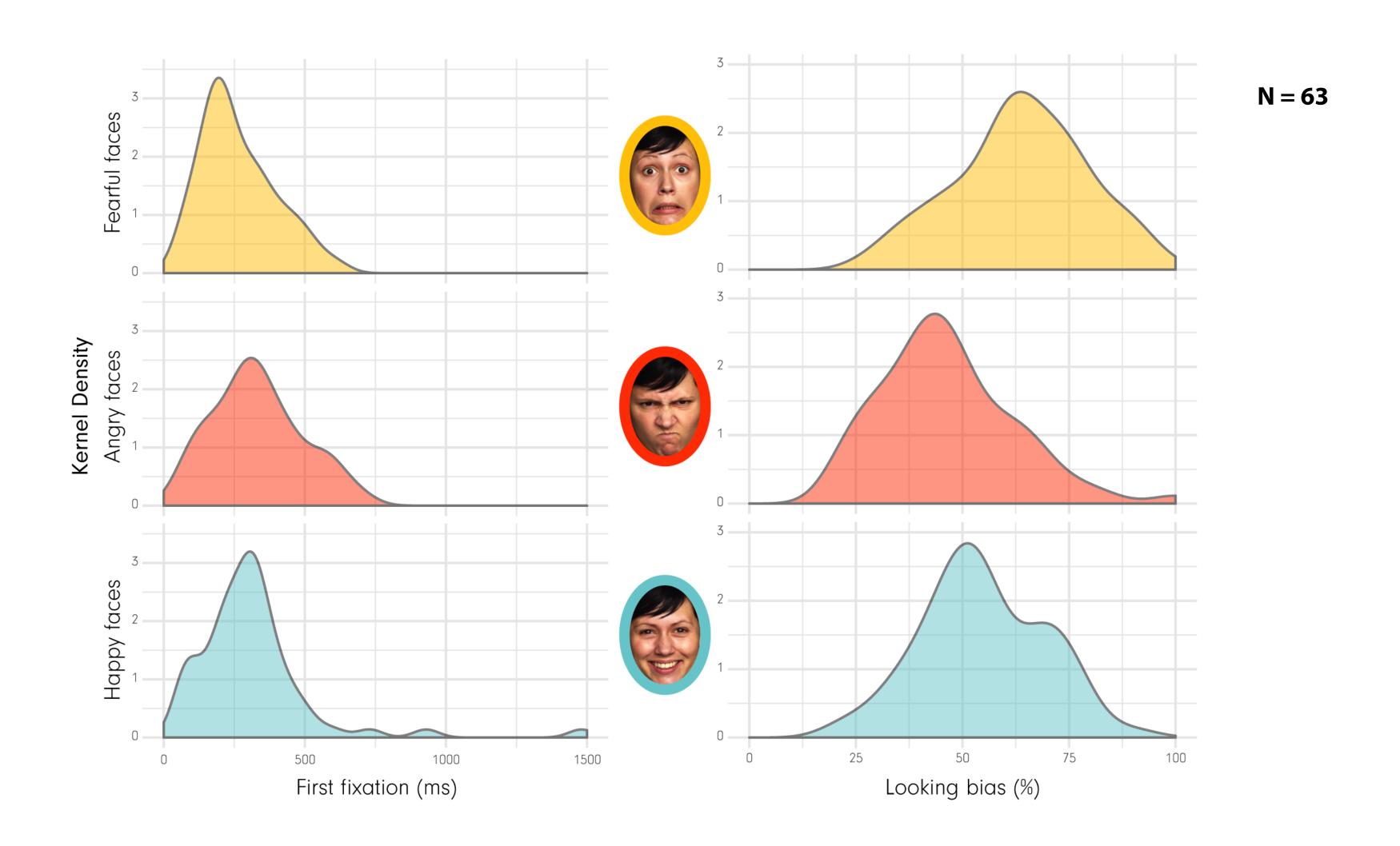
at 7 months but not younger



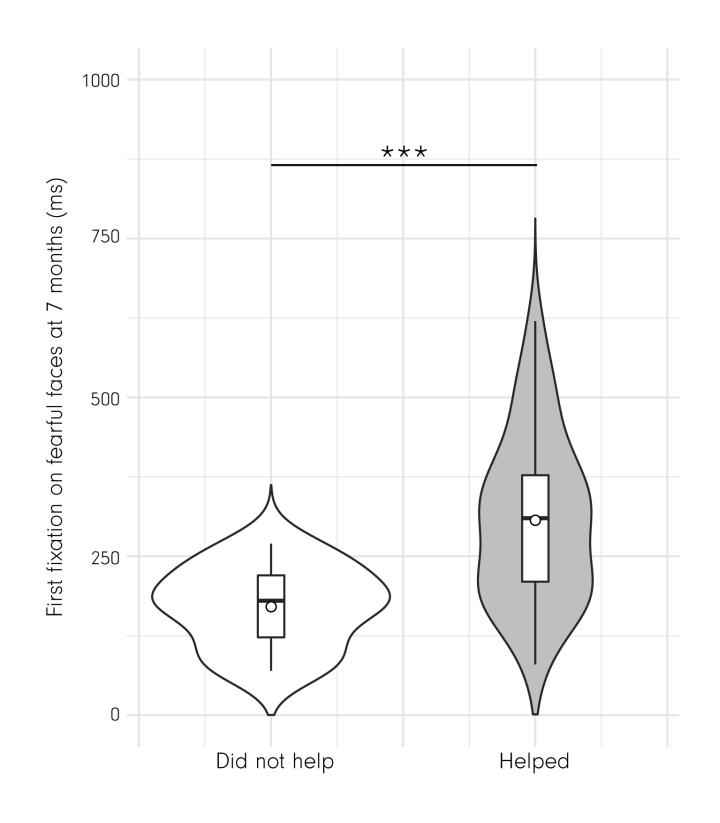
Fear responses and cooperative behavior in infancy



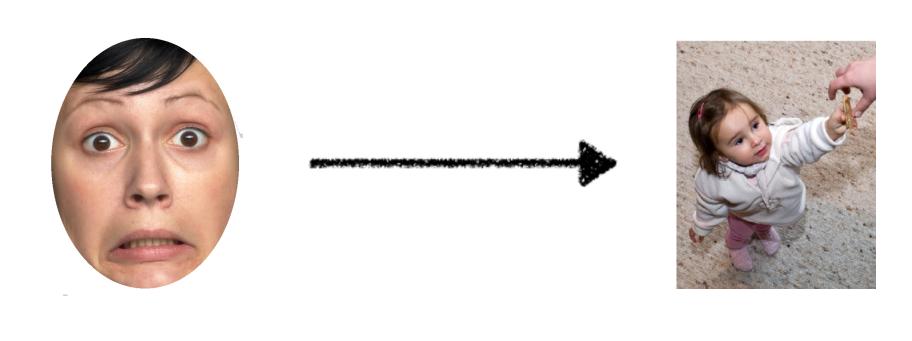
Variability in responses to fear



Variability in responses to fear predicts helping



Duration of first fixation on fearful faces (not angry or happy) at 7 months predicts whether or not infant helped at 14 months



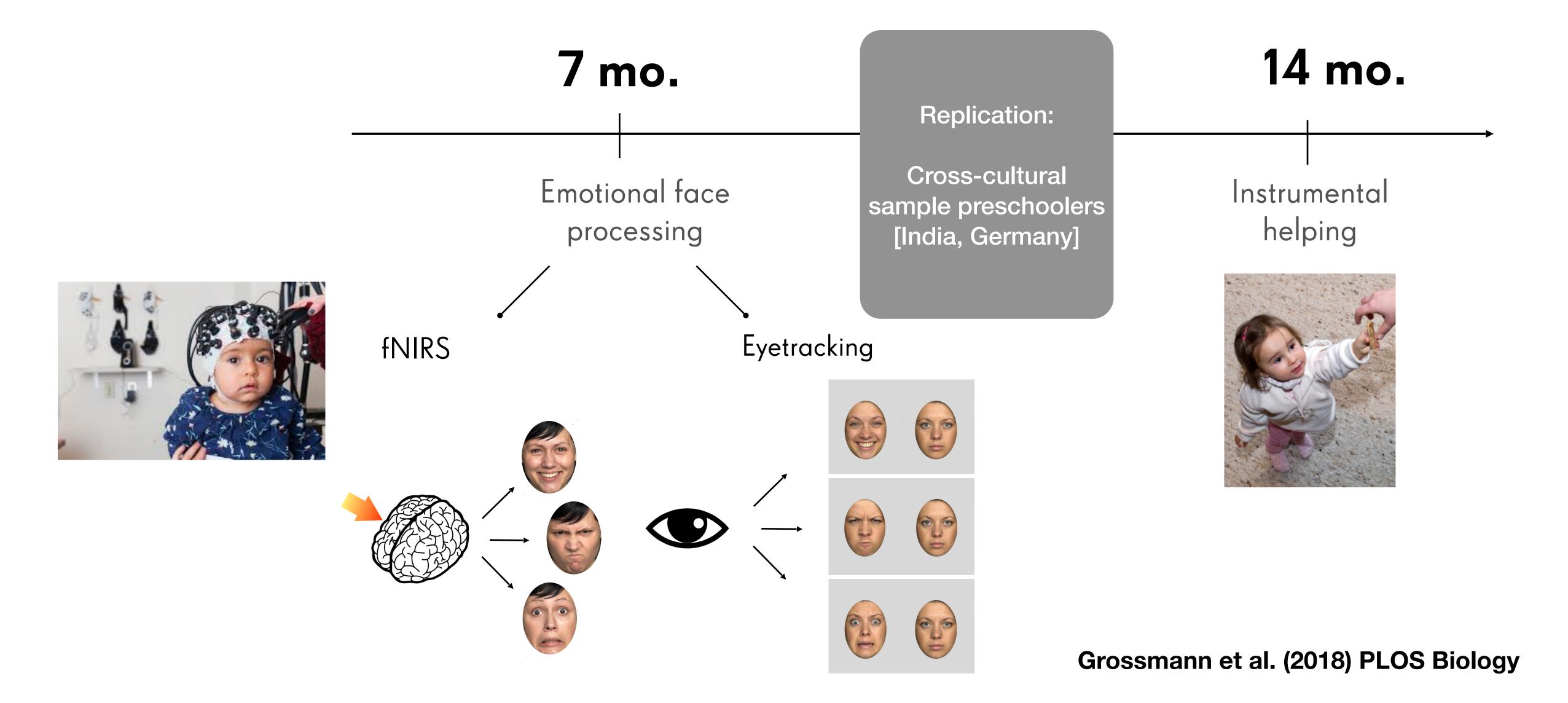
Variability in responses to fear predicts helping



- (1) Longer duration of first fixation on fear associated with greater helping frequency
- (2) Reduced overall attentional bias (over 15 sec.) to fear associated with greater helping

Response to fear at 7 months predicts

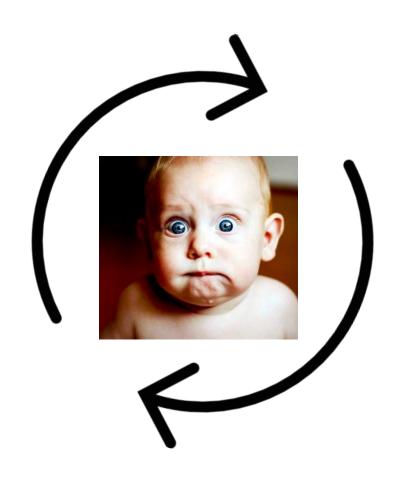
helping at 14 months Explains almost 40% of variability in helping behavior!







The fearful ape hypothesis









Enhanced fear in perception and action develops in infancy

Enhanced fear linked to eliciting and displaying greater prosocial tendencies and cooperative behaviors

Enhanced fear considered relatively stable trait across the human lifespan

Enhanced fear underpinned by integrated perception-action coupling system

Care-based responding to cues of distress and infantile helplessness linked to approach and prosocial behaviors

Mediated by changes in serotonin, oxytocin and dopamine systems

Fearful Ape Hypothesis

Humans are the only great apes who display enhanced fear, not seen in chimpanzees and bonobos

Enhanced fear emerged after last common ancestor with chimpanzees and bonobos

Emergence first linked to the development of cooperative breeding in Homo erectus

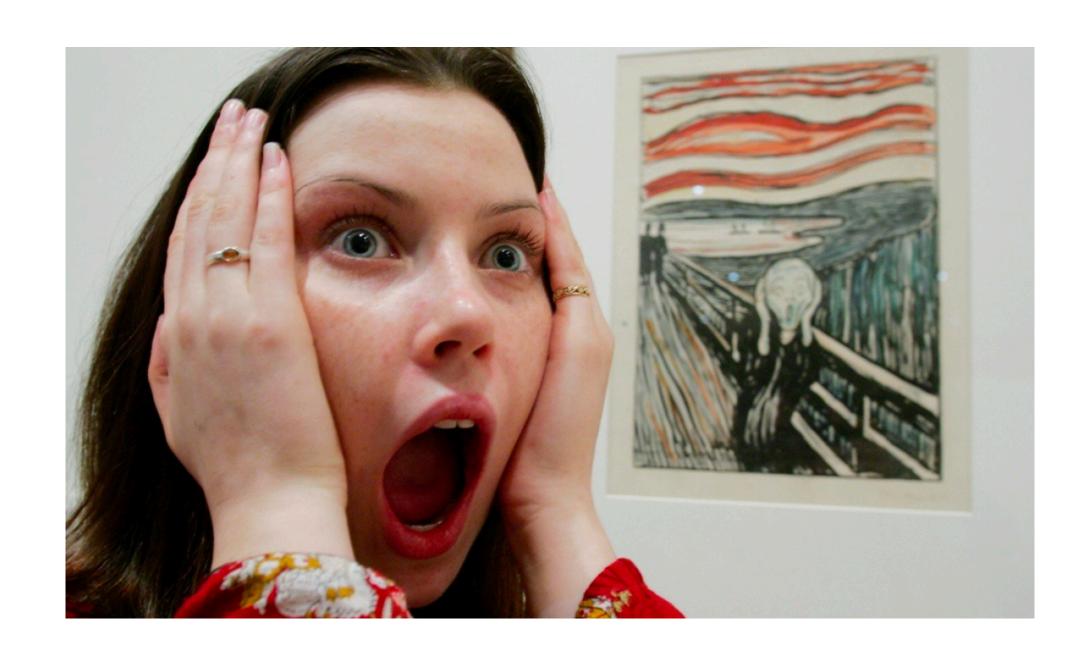
Enhanced fear hypothesized to serve cooperative care functions, which improved survival and reproduction by:

soliciting greater care and provisioning from others especially during infancy and childhood

becoming more caring and cooperative individuals that help others as valued family and group members







What psychological traits are viewed as adaptive and healthy depends on cultural values and norms!

Hunter-gatherer life



Enhanced fearfulness may have been <u>adaptive</u> in our ancestral environment (interdependent human societies built on cooperative care and success).

WEIRD life



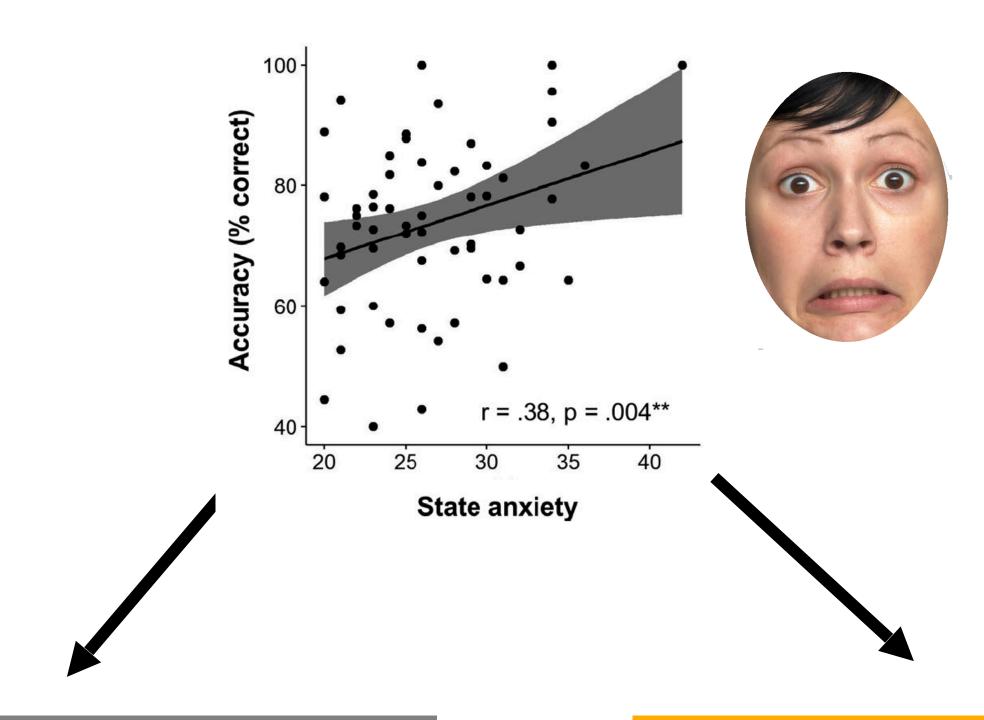
Enhanced fearfulness can become <u>maladaptive</u> in largescale, independent human societies built on individual success.

WEIRD



Exceedingly high rates of anxiety in WEIRD societies might need to be added to the list of <u>evolutionary mismatch diseases</u>?

Rethink how to interpret and use data



Clinically-orientated threat bias and anxiety framework

Intervention- threat bias modification, individual-based therapy

Evolutionary-orientated fear bias and cooperation framework

Intervention- focused on mismatch systems- and community-based interventions focussed on care

Need for cross-cultural research



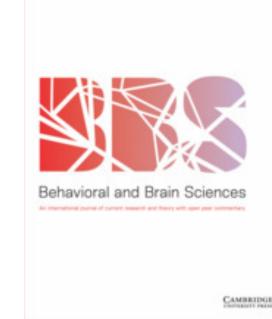
Enhanced fearfulness among infants and young children is more common in Eastern collectivistic societies than in Western individualistic societies.

Fearfulness in infancy, which in WEIRD individualistic contexts has been associated with a heightened risk for maladaptive developmental outcomes, predicted largely positive developmental outcomes including greater cooperative behavior in a sample of Chinese children.

Accepted manuscript

The human fear paradox: Affective origins of cooperative care









Thank you!







