

Neurobiology and Morality: Attending to Evolution, Development and Culture

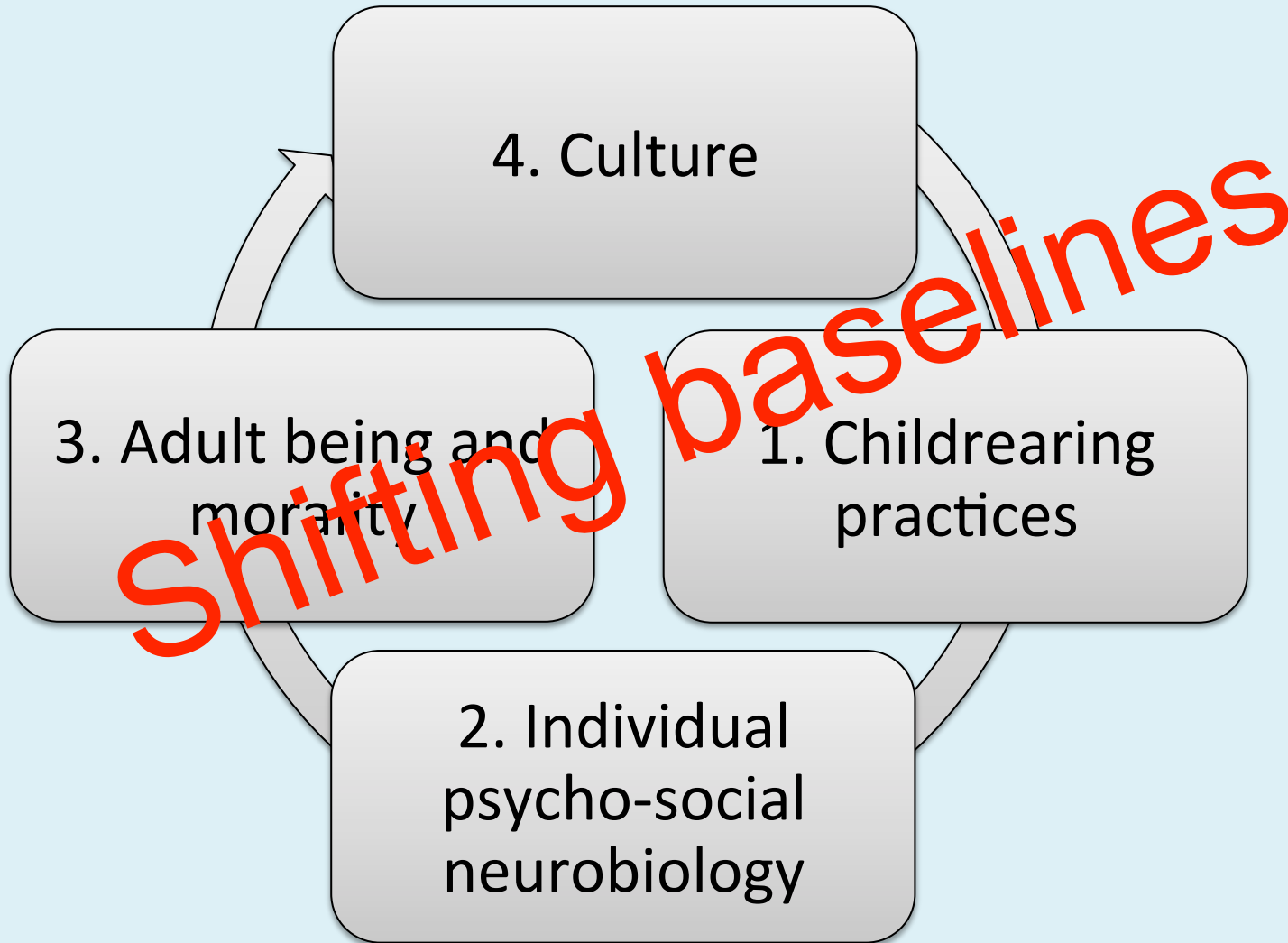
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Analyzing the crisis





What Plants Need

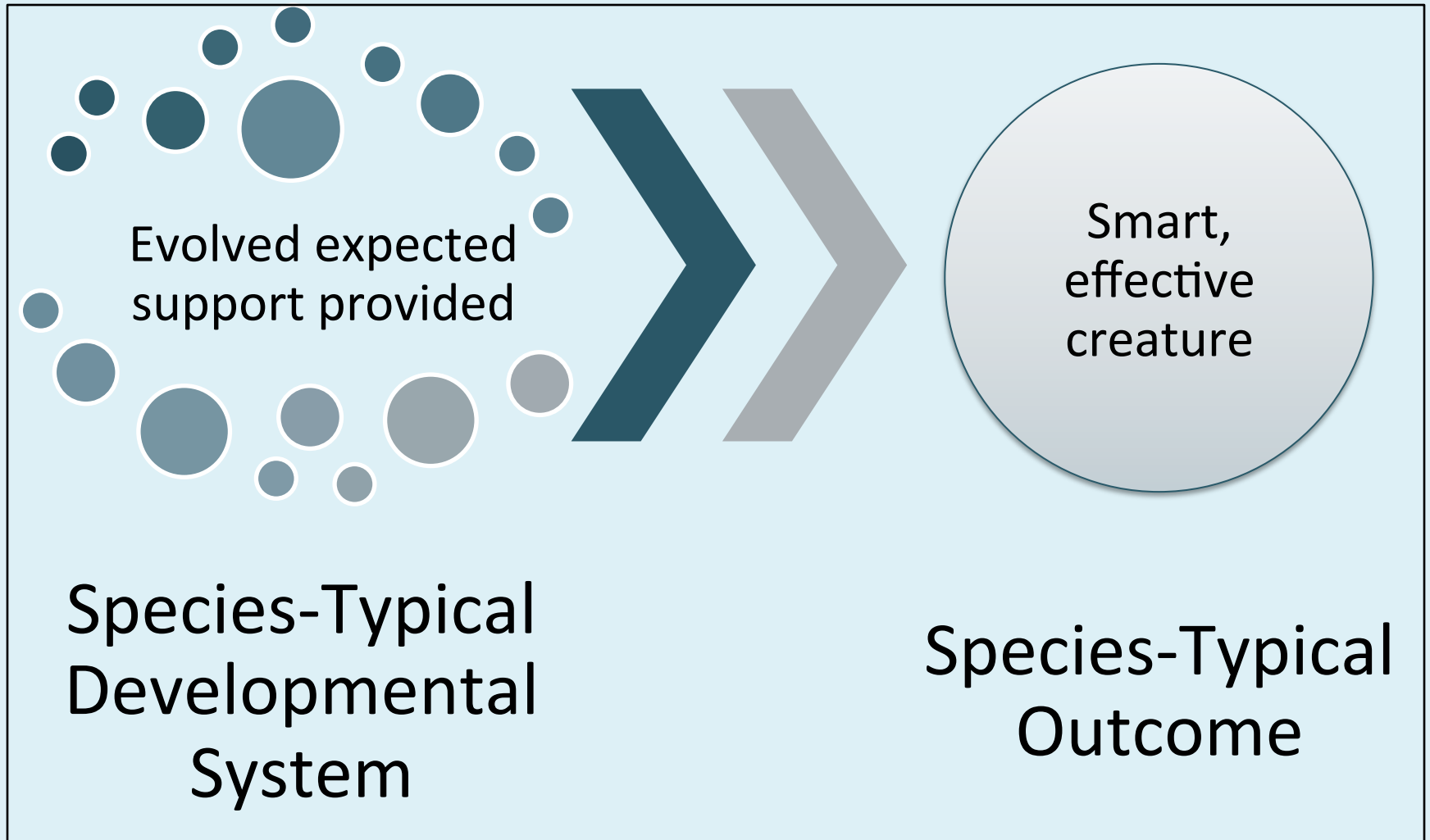


Stunted

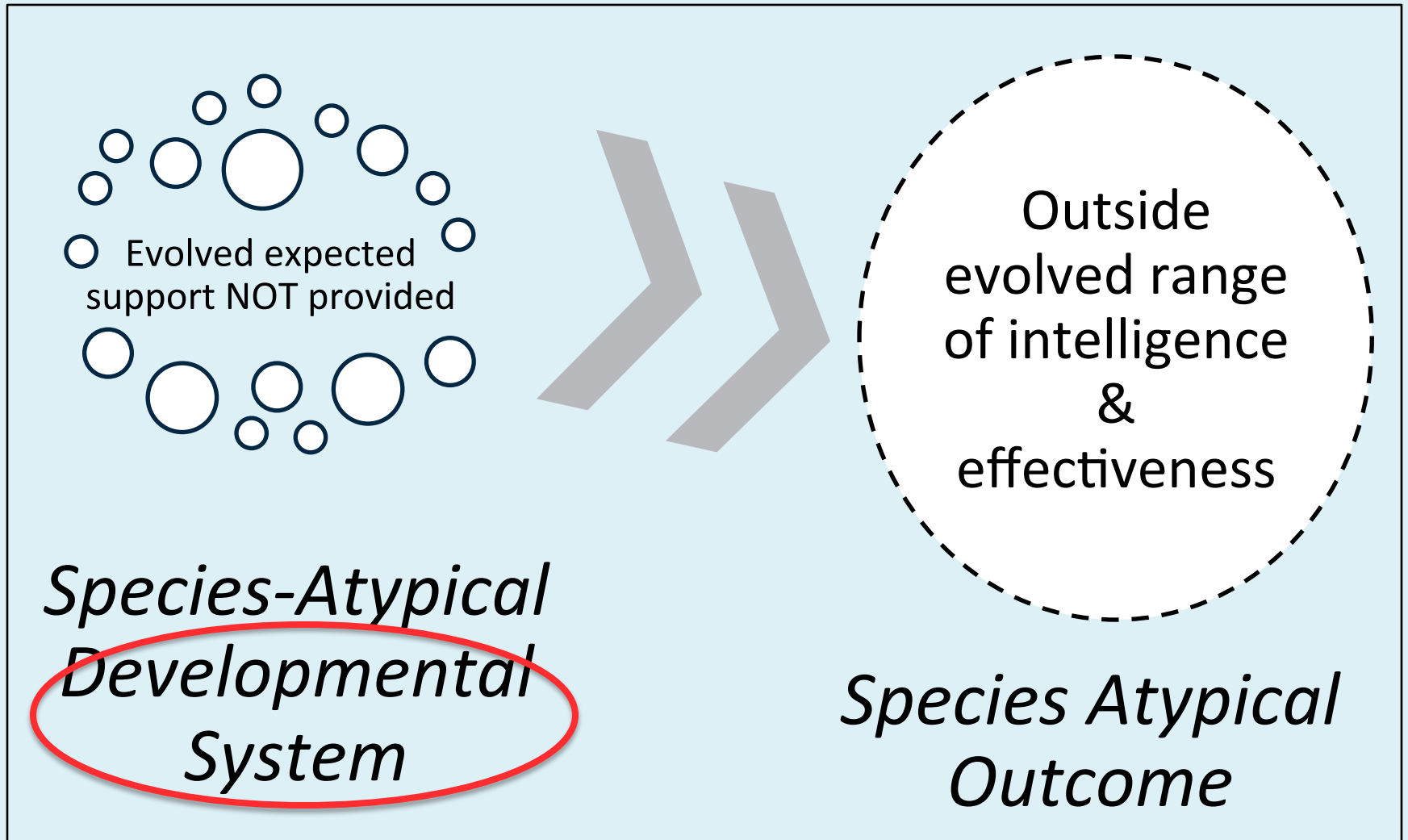
Susceptible to illness

Early death

What do we learn from evolution?



What do we learn from evolution?



Developmental System = Evolved Developmental Niche

- “The reliable and repeatable features of stimulation and experience occurring in an organism’s developmental context”
 - the set of ecological & social circumstances typically inherited by members of a given species

Oyama, Griffiths & Gray, 2001

Who are human beings and what do they need?

- **Animal** needs for nourishment and warmth
- **Mammalian** needs for affection and play
- **Social mammalian** needs for extensive bonding, and community support

Genus	Gestation (days)	Brain volume at full-term birth (% of adult)	Menarche (years)	Eruption of first and last permanent teeth (years)	Average length of nursing (range observed in years)	Completion of general physical growth (years)	Maximum Life span
Gorilla	252	75%	10	3/10.5	3-4	11	35
Orangutan	273	38%	7	3/9.8	4	11	50 in captivity, 40 in wild
Chimp	231	35%	8.8	2.9/10.2	4-6	11	50-60 in captivity (40-50 in wild)
Bonobo	240	35%	10	3.5/10.0	4-5 (1 yr. exclusive)	14-16	Captivity: average 40, but up to 60 Wild: unknown
Small-band hunter-gatherers	?	25%	17	6.2/20.5	4 yrs (2-8 yrs)	20	70 after age 15 (50% mortality before age 15) ¹
Modern human	280 USA: 271.5 (range= 259-294)#		17 in 1850, Europe; Currently, 13 in world; 12.5 in USA		USA: <6 months World: 3-4 yrs (0-11 yrs)		77.9 life expectancy at birth (2007)

Adapted from Montagu, 1968, with additional info from Dettwayler, 1997; Harvey & Clutton-Brock, 1985; Konner, 2010; Trevathan, 2011; World Health Organization

Where do we get the baseline for human childrearing?

***HUMAN EVOLVED
DEVELOPMENT NICHE***

Our 99%: Small-Band Hunter-Gatherers

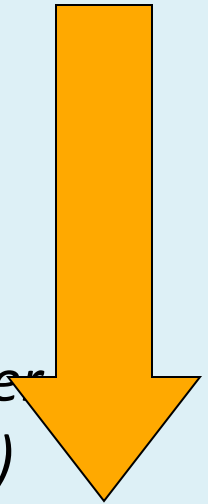


- **Immediate-return societies** (vs. delayed-return societies who invested in cultivation, domestication, or resource accumulation)
- Foragers with few possessions
- Culture and childrearing practices more intense
 - Address **human needs** for lifelong belonging and meaning making

Human Evolved Developmental Niche

- **TOUCH:** *Held or kept near others constantly*
- **RESPONSIVITY:** *Prompt responses to fusses and cries*
- **BREASTFEEDING:** *Nursed frequently (2-3 times/hr initially) for 2-5 years*
- **ALLOPARENTS:** *Frequently cared for by individuals other than mothers (fathers and grandmothers, in particular)*
- **PLAY:** *Enjoy free play in natural world with multiage playmates*
- **POSITIVE SOCIAL SUPPORT:** High social embeddedness
- **SOOTHING PERINATAL EXPERIENCES**

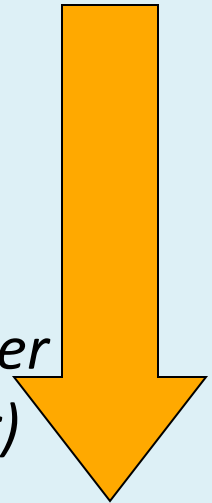
Hewlett & Lamb, 2005; Konner, 2010; Narvaez, Panksepp, Schore & Gleason, 2013)



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Hewlett & Lamb, 2005; Konner, 2010; Narvaez, Panksepp, Schore & Gleason, 2012)



All systems are affected

- **TOUCH:** Epigenetics for anxiety (Meaney), growth (Field)
- **RESPONSIVITY:** HPA axis (McEwan), Vagal tone (Porges)
- **BREASTFEEDING:** Intelligence, health (USDHHS)
- **ALLOPARENTS:** Greater openness, greater maternal responsiveness (Hrdy)
- **PLAY:** More self control, social skills (e.g., Panksepp)
- **POSITIVE SOCIAL SUPPORT:** Greater health and wellbeing
- **SOOTHING PERINATAL** Bonding (Bystrova), Intelligence (Simon-Areces), immunity (Schlinzig)

All are related to regulation & wellbeing

Human babies are especially needy

- Developmentally born 9-18 months early
 - 25% of adult brain volume at full-term birth (40-42 weeks) (80% by age 3)
- Human babies require “extergestation” (external womb)

(Montagu, 1978)

Early body/mind co-construction by caregivers

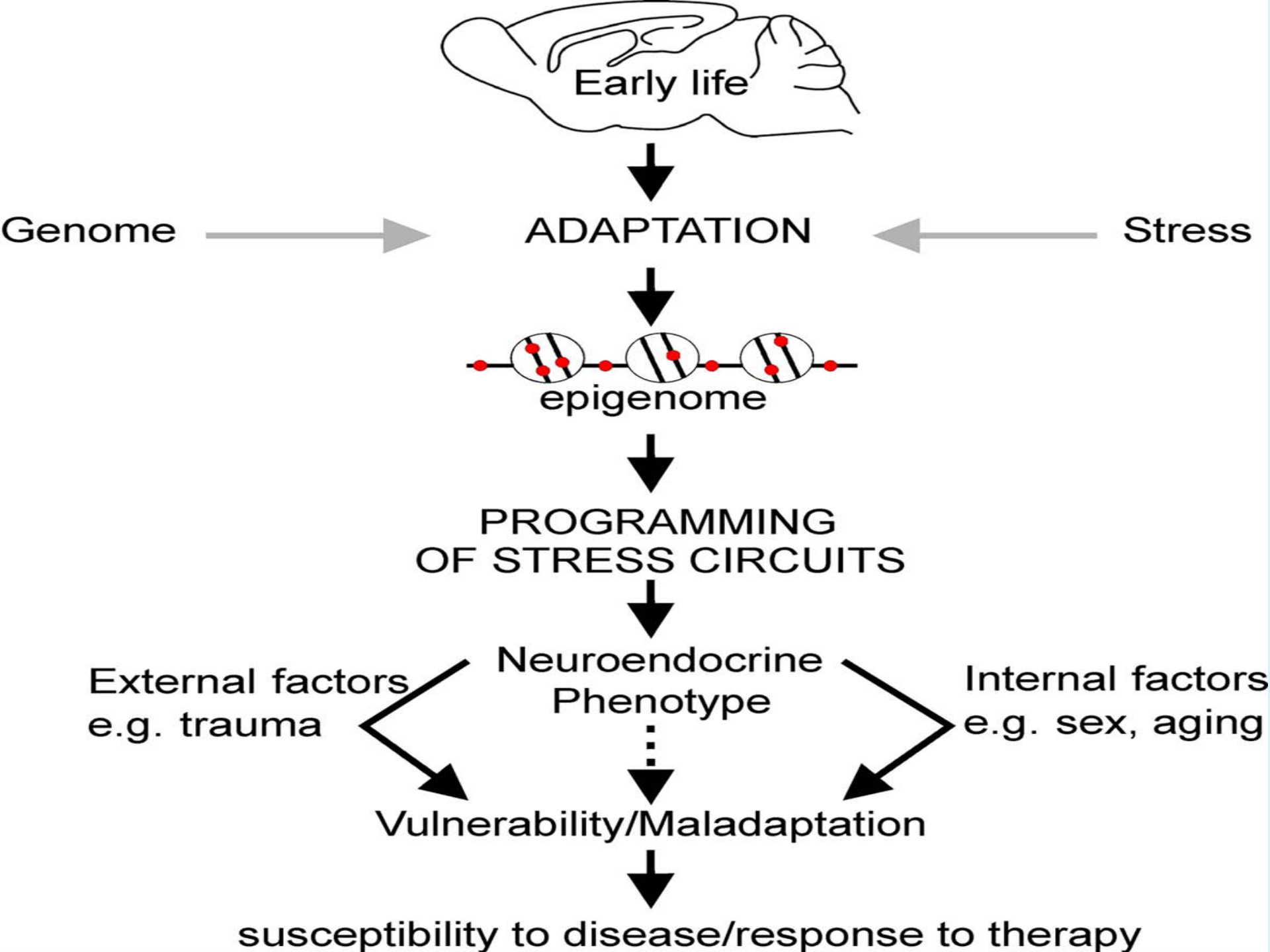
- Developmentally plastic dynamic system
 - ‘**Constructive interactionism**’ (Oyama)
- Constant interaction between “nature” and “nurture”
 - Timing, duration, intensity matter
- Epigenetic effects of early experience for all systems
 - Emotion systems, pleasure focus and social worldview (*Tomkins*);
 - Self (social and moral) (*Schore; Stern; Trevarthen*)

Secure Attachment in Infancy

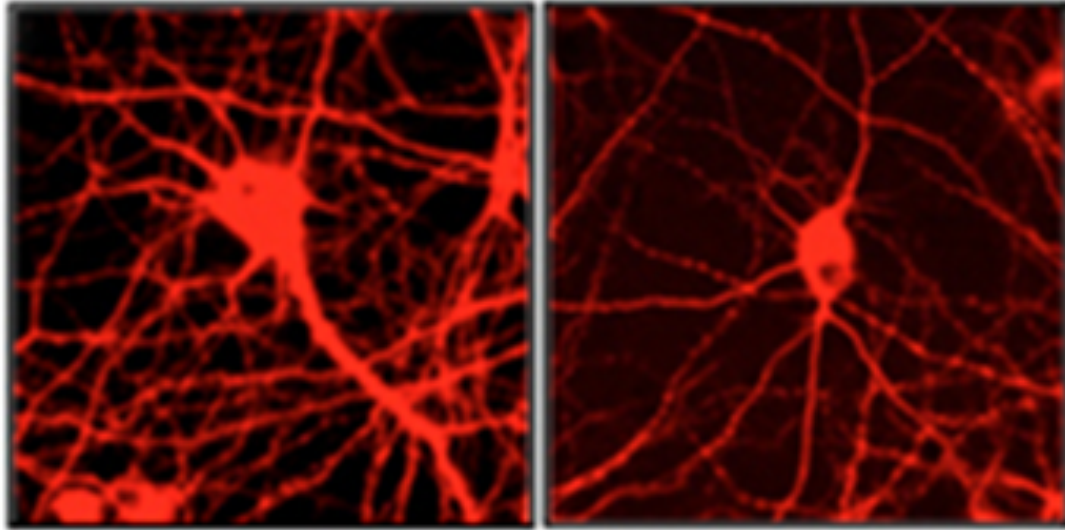
- Caregivers
 - comfort distressed immature reflexive systems
 - condition systems to be calm
 - predictably consistent in cognitive and emotional signaling
- Child learns communicative value of interpersonal signals, both cognitive and affective.

Undercare leads to Insecure Attachment

- Toxic stress of poor caregiving relationship
 - Disrupts emotional functioning
 - Compromises social abilities
 - Promotes a permanent emotional bias towards anxious self-preservation
- Deficiencies in
 - Brain structural integrity
 - Hormonal regulation
 - System integration that lead to sociality



Stress changes gene expression which alters synapses



Kang HJ, Voleti B, Hajszan T, Rajkowska G, Stockmeier CA, Licznernski P, Lepack A, Majik MS, Jeong LS, Banasr M, Son H, Duman RS (August 2012). Decreased expression of synapse-related genes and loss of synapses in major depressive disorder. *Nature Medicine* 18.

Right Brain Underdevelopment

- Self-regulation
- Intersubjectivity and social pleasure
- Emotional intelligence
- Empathy
- Beingness
- Self transcendence
- Higher consciousness

Luckily, the right brain can grow throughout life!

Sets of Brain Systems (MacLean)

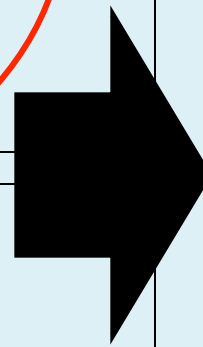
Protoreptilian

- **Survival systems:** anger, fear, panic (fight, flight, freeze, faint)

Toxic Stress

Mammalian

- **Social:** care, play



Human

- **Executive controls interact with survival and prosocial systems**

MORAL FUNCTIONING

Biosocial being

Getting along with others

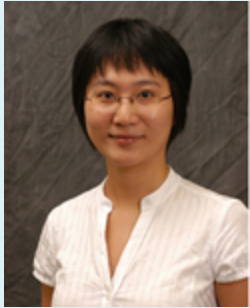
Sharing the benefits and burdens of social life

Early Life Sets the Stage for Social and Moral Development

- **Responsiveness matters!**
- **Mutually responsive orientation** (*Kochanska*) and **secure attachment** (*e.g., Kochanska, 2002; Weinfield et al., 2008*)
 - **Empathy** (*Zahn-Waxler, Radke-Yarrow, Eisenberg*)
 - **Self-regulation** (*Weinfield et al., 2008*)
 - **Conscience** (*Kochanska*)
 - **Openness** (*Greenspan & Shanker, 2004*)
 - **Agency/self-efficacy/competence** (*Weinfield et al., 2008*)

How about the other evolved parenting practices?

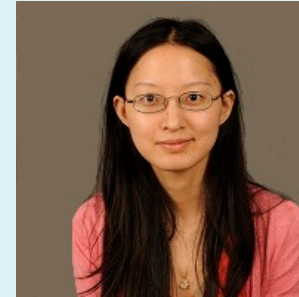
Family Life Project



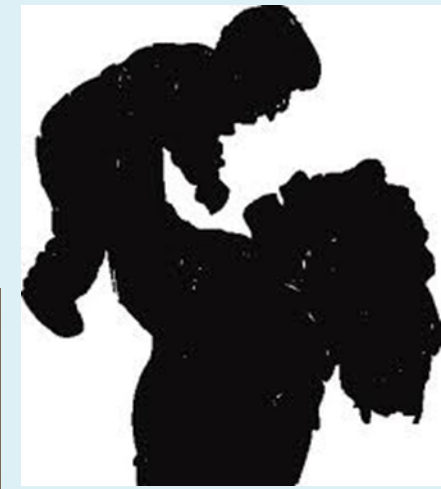
Lijuan Wang



Jennifer Lefever



Ying (Alison) Cheng



Tracy Gleason



Wellesley
COLLEGE

THANKS TO

- **Spencer Foundation**
- **University of Notre Dame**
 - College of Arts and Letters
 - Office of Research
 - Institute for Scholarship in the Liberal Arts
 - Department of Psychology
- **Members of the Moral Psychology Lab**

Family Life Project



- a. Longitudinal observational & maternal questionnaires and interviews from 4 to 36 months (*data from the Centers for the Prevention of Child Neglect; n=636*)
- b. Maternal surveys of EDN behavior and attitudes in China (n=383) and USA (n=436)
- c. Maternal survey of nurturing parenting attitudes USA (n=166)

- a. Narvaez, Gleason, Wang, Brooks, Lefever, Cheng, & Centers for the Prevention of Child Neglect (2013)
- b. Narvaez, Wang, Gleason, Cheng, Lefever, & Deng (2013);
- c. Gleason et al. (under review)

Primal Parenting for young children: The Evolved Developmental Niche

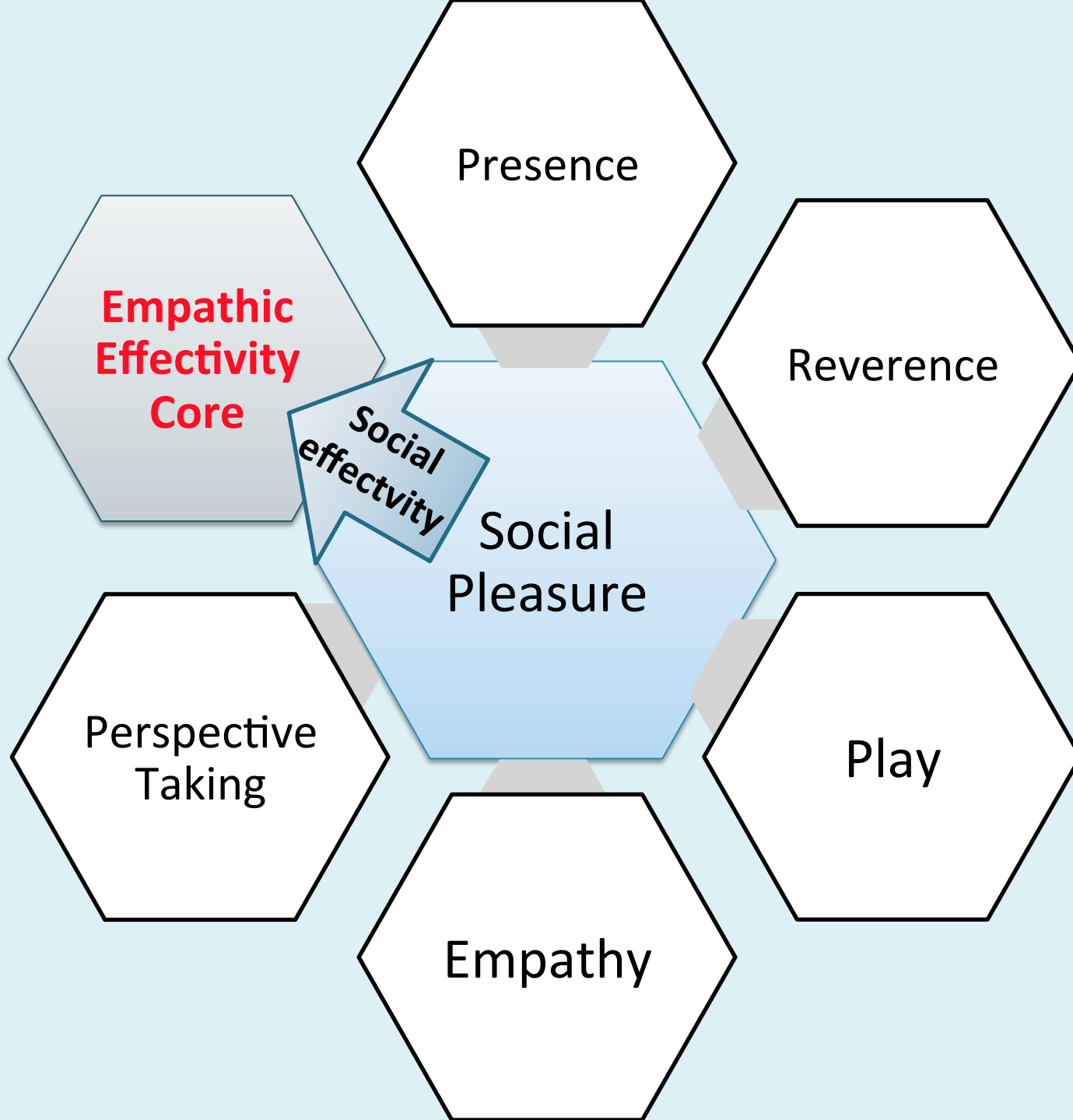
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- 3. BREASTFEEDING:** *Nursed frequently (2-3 times/hr initially) for 2-5 years*
- 4. SOOTHING PERINATAL EXPERIENCES:** *No distress imposed*
- 5. MATERNAL SUPPORT and ALLOPARENTS:** *Shared care by adults other than mothers*
- 6. PLAY:** *Enjoy free play in natural world with multiage playmates*
- 7. POSITIVE CLIMATE OF SUPPORT:** *Positive interactions with community*

Parenting Practice & Child Outcomes

	Empathy	Conscience	Self-regulation	Cooperation	IQ	Depression (not)	Aggression (not)
Natural Childbirth	Blue		Purple	Grey	Grey	Grey	Grey
Breastfeeding initiation		Green		Yellow			Red
Breastfeeding Length		Green	Purple	Grey	Grey	Grey	Grey
Touch	Blue	Green	Purple		Light Orange		
Responsivity	Blue	Green	Purple	Yellow	Light Pink	Green	Red
Play	Blue	Green	Purple	Grey	Grey	Grey	Grey
Social support/ Multiple caregivers		Green	Purple	Yellow	Light Orange		Red

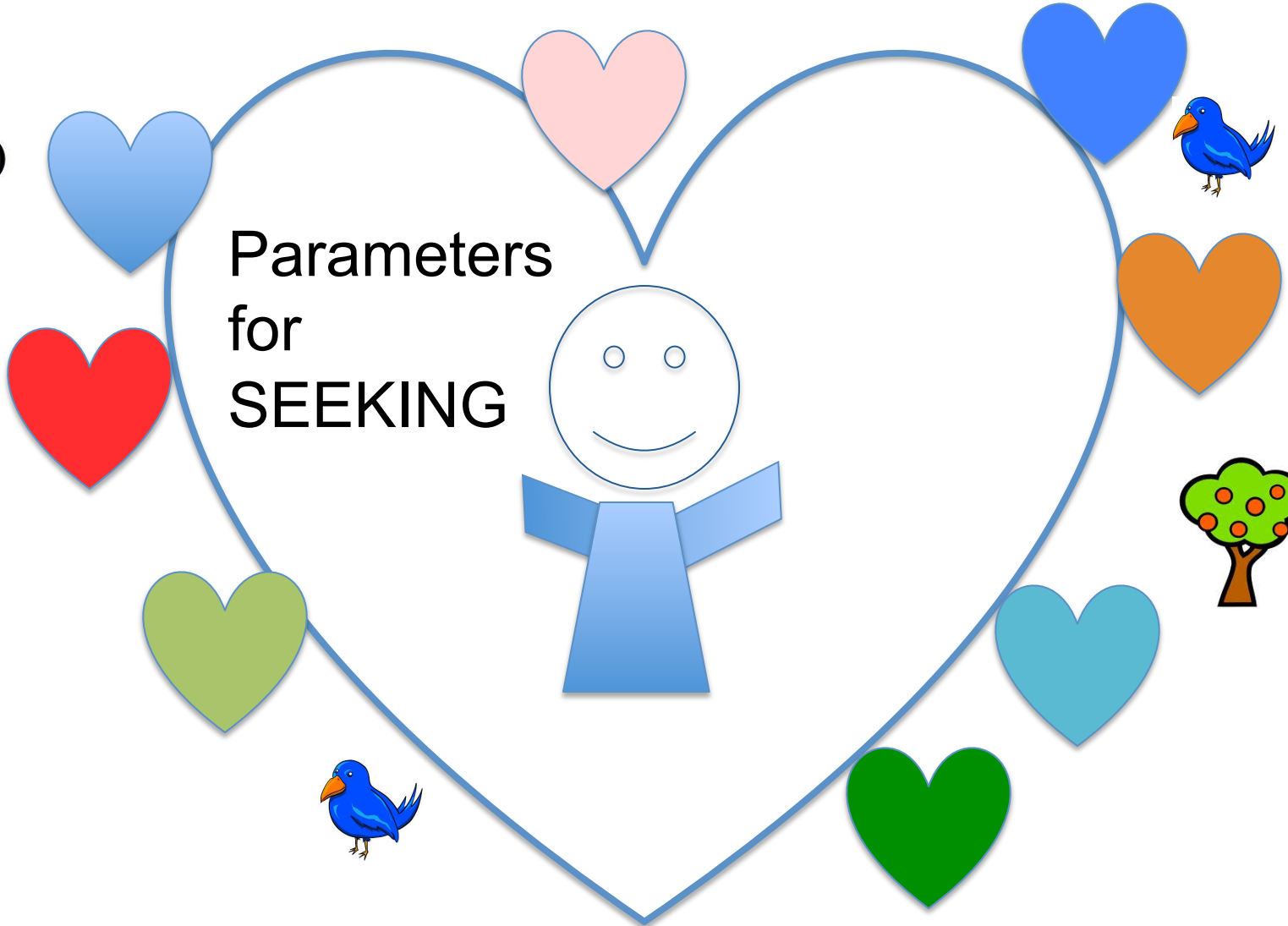
Back to the Baseline

- Small-band hunter-gatherers have different moral personalities
- Two groundings for morality built in early life
 - Empathic **effectivity** roots
 - Communal **autonomy space**

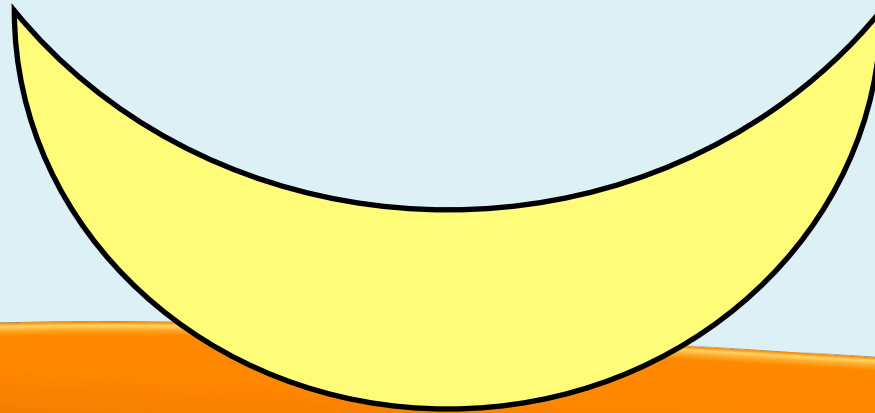


Communal Autonomy Space

Parameters
for
SEEKING

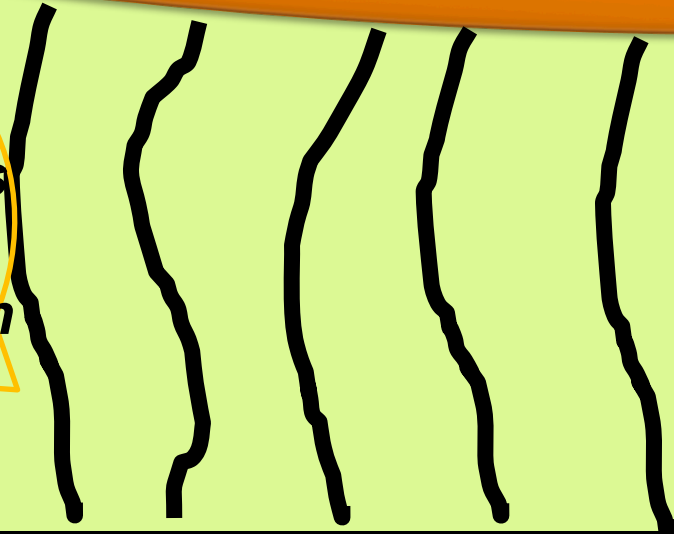


***Parameters
for
agency***



Communal Autonomy Space

***Parameters
for
communion***



**Empathic
Effectivity
Roots**

Ethic of Engagement: Relational Attunement

- Mammalian emotional systems drive us towards intimacy
 - Social and sexual instincts, empathy and parental care, play (*Darwin, 1871*) that underlie Darwin's "moral sense"

Emotion systems: CARE, PLAY

Behaviors: compassionate response, egalitarian social play, acceptance, social non-self

Engagement Calm

- Full presence in the moment
 - Intersubjectivity
 - Resonance with the Other
- Primed by supportive, caring relationships and environments
 - Secure attachment (Bowlby)
 - Companionship care (Trevarthen)
- Persons relationally focused in the present
 - Devoted mother

Engagement Ethic



- Primary emotional force behind “positive” moral behavior
- For most Gentile rescuers of Jews in World War II “caring compelled action” (Oliner, 2002; p. 125)
 - most were driven by “pity, compassion, concern and affection” (ibid).

The Moral Power of Brain Systems

Pretoreptilian

- **Survival:** anger, fear, panic (fight, flight, freeze, faint)
- *Morality is self-protective*

Mammalian

- **Social:** care, play
- *Morality is compassionate*

Human

- **Executive controls** interact with survival and prosocial systems
- *Moral imagination can build on either*

Ethic of Imagination: Reflective Abstraction

- Coordinates functioning
- Neo & Prefrontal Cortices
- Reflective behaviors:
abstraction, deliberation,
imagination
- Executive functions (plan,
stop, start, maintain,
change course)
- Empathy

Engagement Ethic Roots

- Presence
- Reverence
- Synchrony

- Empathy
- Perspective taking
- Social effectivity

- Intersubjectivity
- Perspective taking
- Small I-ego

Communal Imagination

Ethic of Love

Sympathetic
Action

Egalitarian
Respect

**Parameters
for
agency**

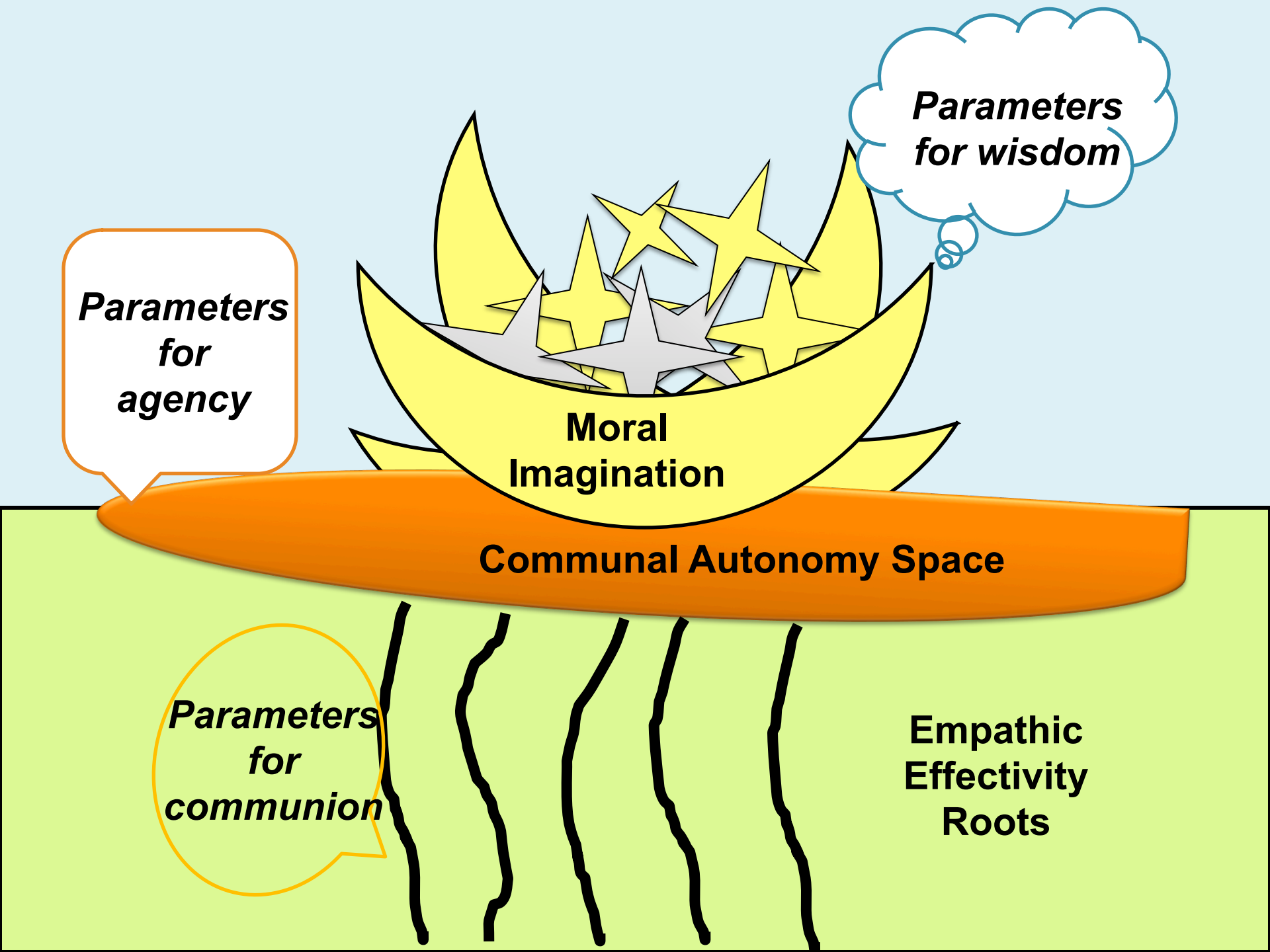
**Parameters
for wisdom**

**Moral
Imagination**

**Communal
Autonomy
Space**

**Parameters
for
communion**

**Empathic
Effectivity
Roots**



Our moral inheritance

Our human essence

- Engagement ethic
- Communal imagination (regarding non-humans too)

Ethic of Engagement is not innate

- Dependent on proper care during infancy and childhood
 - Epigenetic
 - Right brain
 - Brain circuitries necessary for social engagement

Greenspan & Shanker 1999; Panksepp 1998; Schore, 1994

Luckily, the right brain can grow throughout life!

Communal Imagination ethic is not innate

- Connections with emotion systems are built from experience
 - During sensitive periods
- Prefrontal cortex takes decades to develop
 - Not completed until the third decade (Giedd, Blumenthal & Jeffries 1999)
- Executive functions can be damaged from experience
 - Violent experiences (including videogaming; Mathews)
 - Alcohol and drugs (Bechara)

Inflated ego
Distorted thinking
Distorted feeling
Distorted perception
Governed by the past
Self-centered

What happens when early life does not match up with the Evolved Developmental Niche?

One-person psychology
Overextended SEEKING
Ethics are misdeveloped

Ethic of Security:

Relational Self-Protection

- Based primarily in instincts for **survival (brainstem, lower limbic system)**
 - Systems shared with all animals (*Panksepp 1998*)
 - Available at birth
- Instincts primed by perception of fearful climate or situation
- Takes over attention
 - Depletes resources for higher order processes
 - Shifts attention to the self, lowering empathy
- Useful for moments of physical threat, otherwise is pathological

Safety Subtype 1:

Combative (*Bunker*) Morality

- **“Fight”**
 - Based in the sympathetic system
- **Defensive or reactive aggression**
 - Feels “good” and “right”
- **Self-preservational externalizing**
 - Early trauma->personality disposition
 - Ambivalent/Anxious attachment

Emotion systems: SEEKING, RAGE

Behaviors: abuse, bullying, blaming

Henry & Wang, 1998

Safety Subtype 2: Compliant (*Wallflower*) Morality

- **“Freezing” or “Fainting”**
 - Based in the systems that protect body from death or psychological trauma
- **Submission, passivity, disappearance**
 - Compliance with an authority
- **Self-preservational internalizing**
 - Early trauma->personality disposition
 - Anaclytic or introjective depression

Emotion systems: FEAR, SEPARATION DISTRESS

Behaviors: compulsiveness (caregiving, compliance), obsessiveness hoarding, withdrawal, paralysis

Henry & Wang, 1998

What happens to **imagination**?

- Impaired by emotion distortion, stress reactivity
- Adopts one or more “dangerous ideas” (Eidelson & Eidelson, 2003) of
 - **Superiority**
 - Distrust
 - Vulnerability
 - Injustice
 - Helplessness
- Two types
 - Vicious (externalizing)
 - Detached (internalizing or numb)

Imagination Subtype 1: Vicious Imagination

- Fueled by anger, aggression, dominance, system-following, or ideological striving
- Un-egalitarian (power over the Other)
 - Scapegoating
 - “Eliminationism” (Neiwert, 2010)
 - “Moral mandate” (Skitka)
 - “Impositional altruism”



(anxious attachment)

Imagination Subtype 2: Detached Imagination

- “Left brain” dominant (*McGilchrist, 2009*)
- Emotionally cool or cold
- Categorizes and stereotypes
- Objectifies, dissects and orders
- Decontextualizes
- Seeks control, power over objects
- Seeks a firm, certain answer
- Calculates usefulness of other people and things
- Source of Flynn effect (*Flynn, 2007*)



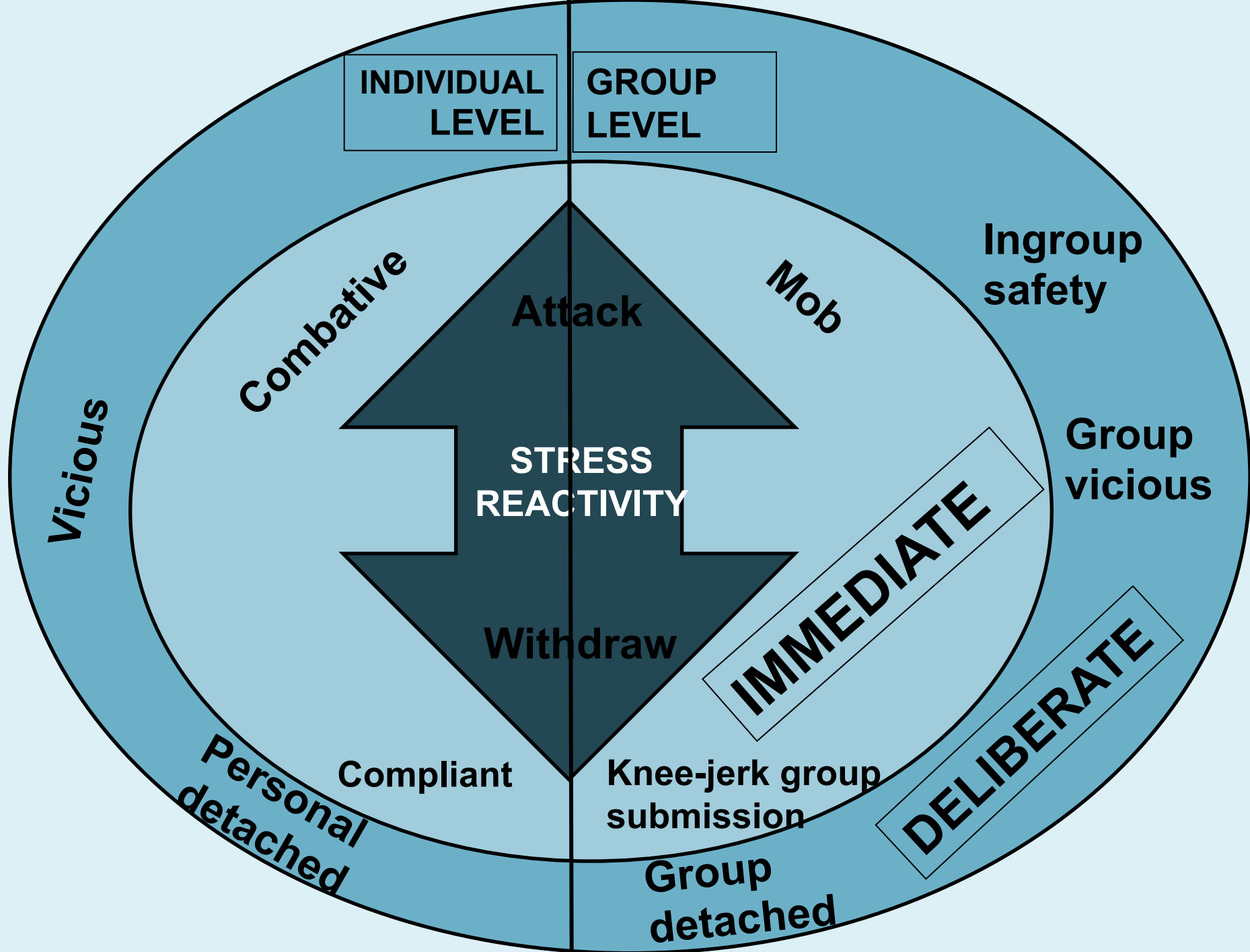
Oppenheimer &
atomic bomb

(avoidant attachment)

Detached Imagination

- Lack of attuned relationship
- Innovation without a sense of consequence
- Extreme version
 - Asperger's syndrome (Baron-Cohen)
- What is usually studied in moral psychology
- What schooling emphasizes
- What undercare in childhood encourages





**INDIVIDUAL
LEVEL**

**GROUP
LEVEL**

Combative

Mob

**Ingroup
safety**

Attack

Vicious

**Group
vicious**

**STRESS
REACTIVITY**

IMMEDIATE

Withdraw

DELIBERATE

Compliant

**Knee-jerk group
submission**

**Personal
detached**

**Group
detached**

The child becomes the (wo)man

- Emotional circuitry established early in life is related to the brain's architecture of morality & ethical expression

**Moll, Zahn, de Oliveira-Souza,
Drueger, & Grafman, 2005**

Epigenetics of Moral Development

Neurobiology of Self and Relationships

Experience early
and during sensitive
periods
[caregiving, social
support and climate]

Personality

Agreeableness (*Kochanska*)
Empathic orientation
(*Tomkins*)
Cooperative self-
regulation (*Sroufe*)
Positive, prosocial
emotions (*Schore*)

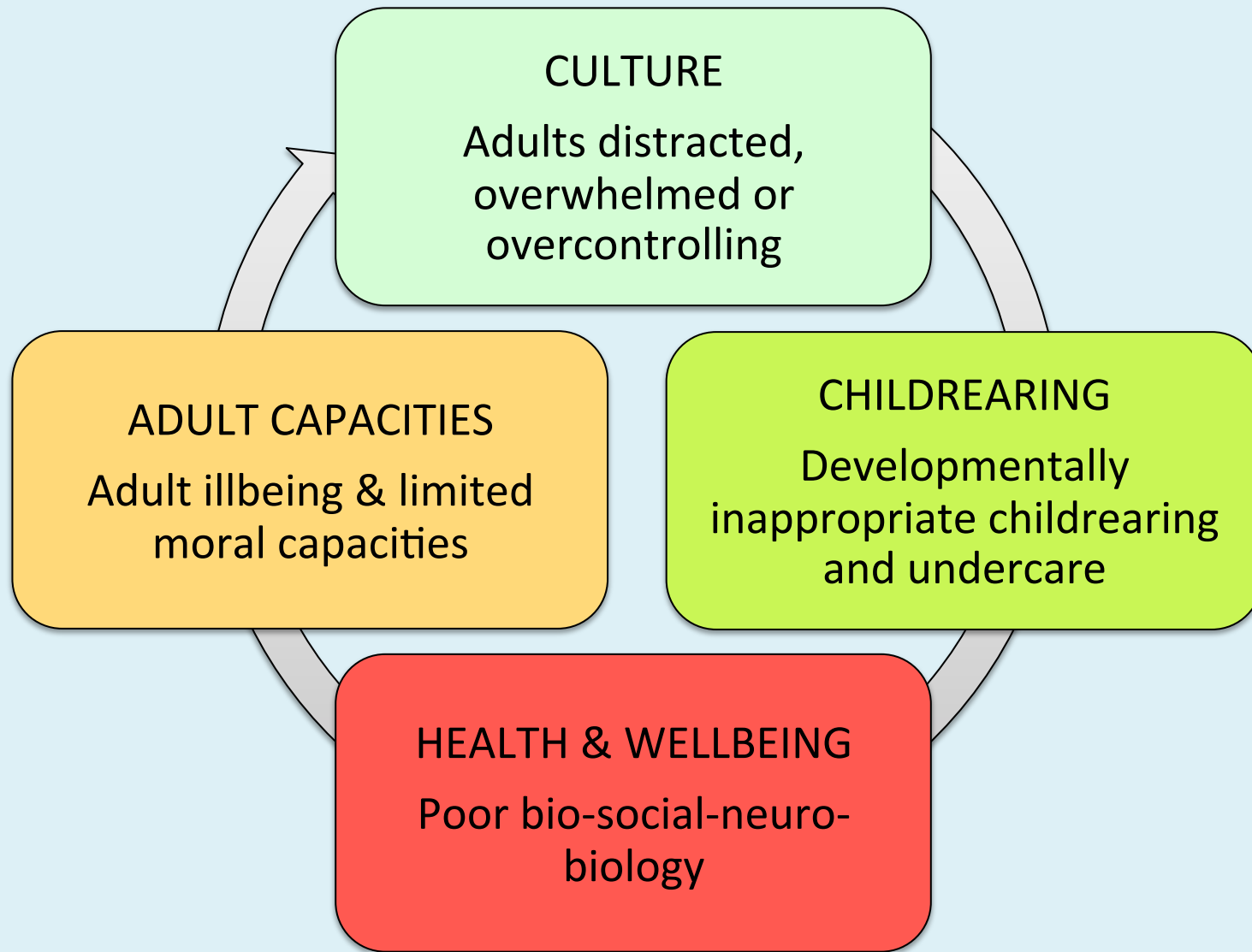
Ethical Orientation

Safety
Engagement
Imagination
(*Triune Ethics, Narvaez*)

CULTURE

What happens when you have a
society full of undercared for
adults?

Culture of Competitive Detachment



How do we know that an alternative culture is possible?

- Back to the baseline: Small-band hunter-gatherers
 - Companionship lifestyle
 - High social wellbeing
 - Egalitarian, generous, sharing
 - Self-restraint (they don't hoard)
 - No coercion or hierarchy
 - Multi-aged daily life
 - Social play
 - Receptive intelligence

Small egos, large selves

- Every individual comes into being as a **center of agency and awareness within an unbounded social environment which provides sustenance, care, company, and support.** All people and things known, used or made are drawn into the person's subjective identity”

(Ingold, 1999, p. 407)

Western: rational, self-contained, and autonomous, “locked within the privacy of a body,” “standing against” and competing for the “rewards of success” with “an aggregate of other such individuals”

Children

- **Treated as deserving respect equal to adults**
- **whose needs are met without question**
 - little distress
 - no coercion (although persuasion may be attempted)

- Everyone has high autonomy but also high group commitment

Moral Sense Capacities (Darwin)

- Social pleasure
- Empathy
- Memory function
- Social concern
- Habit control

We could add:

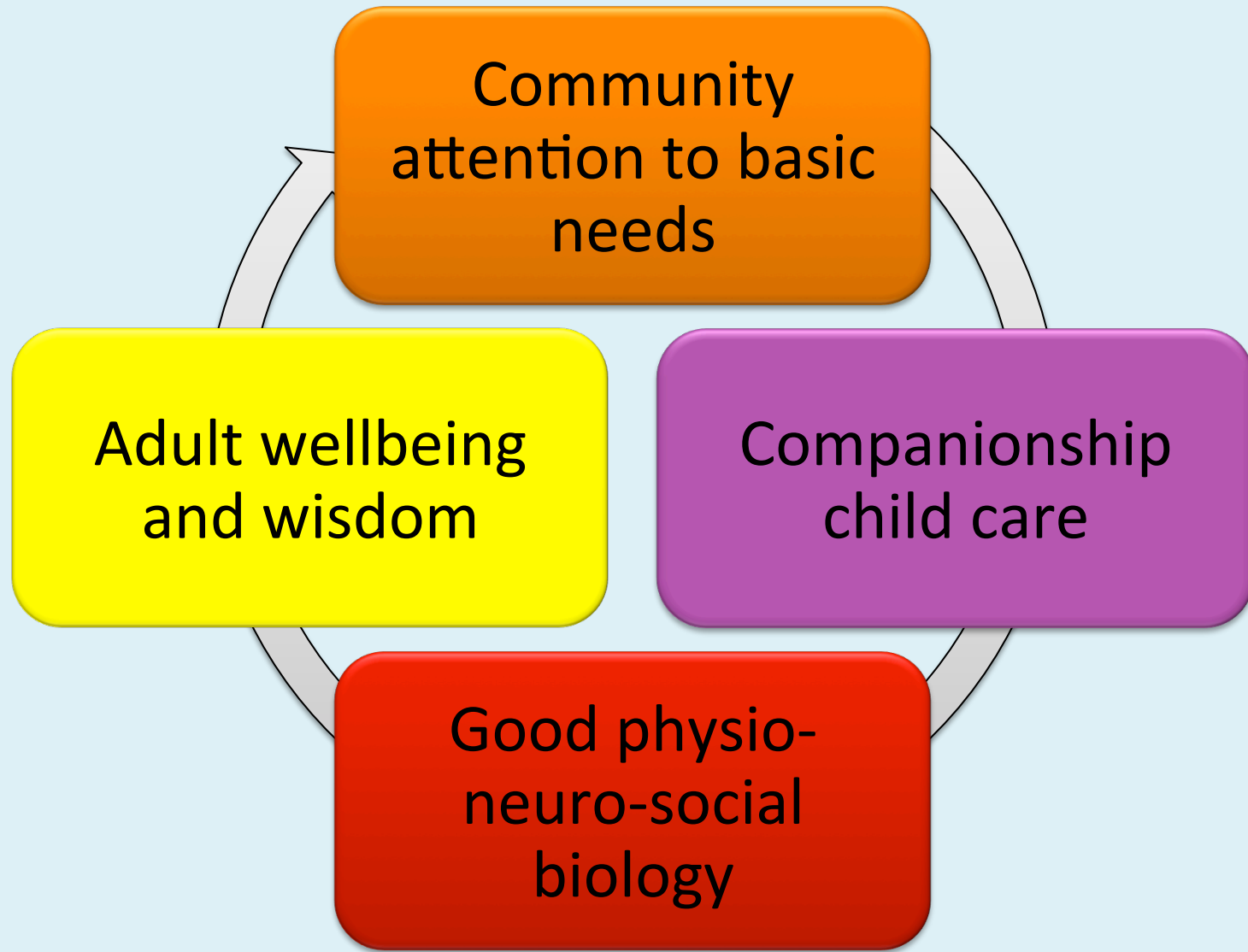
- Higher consciousness

- Nomadic foraging peoples display these characteristics

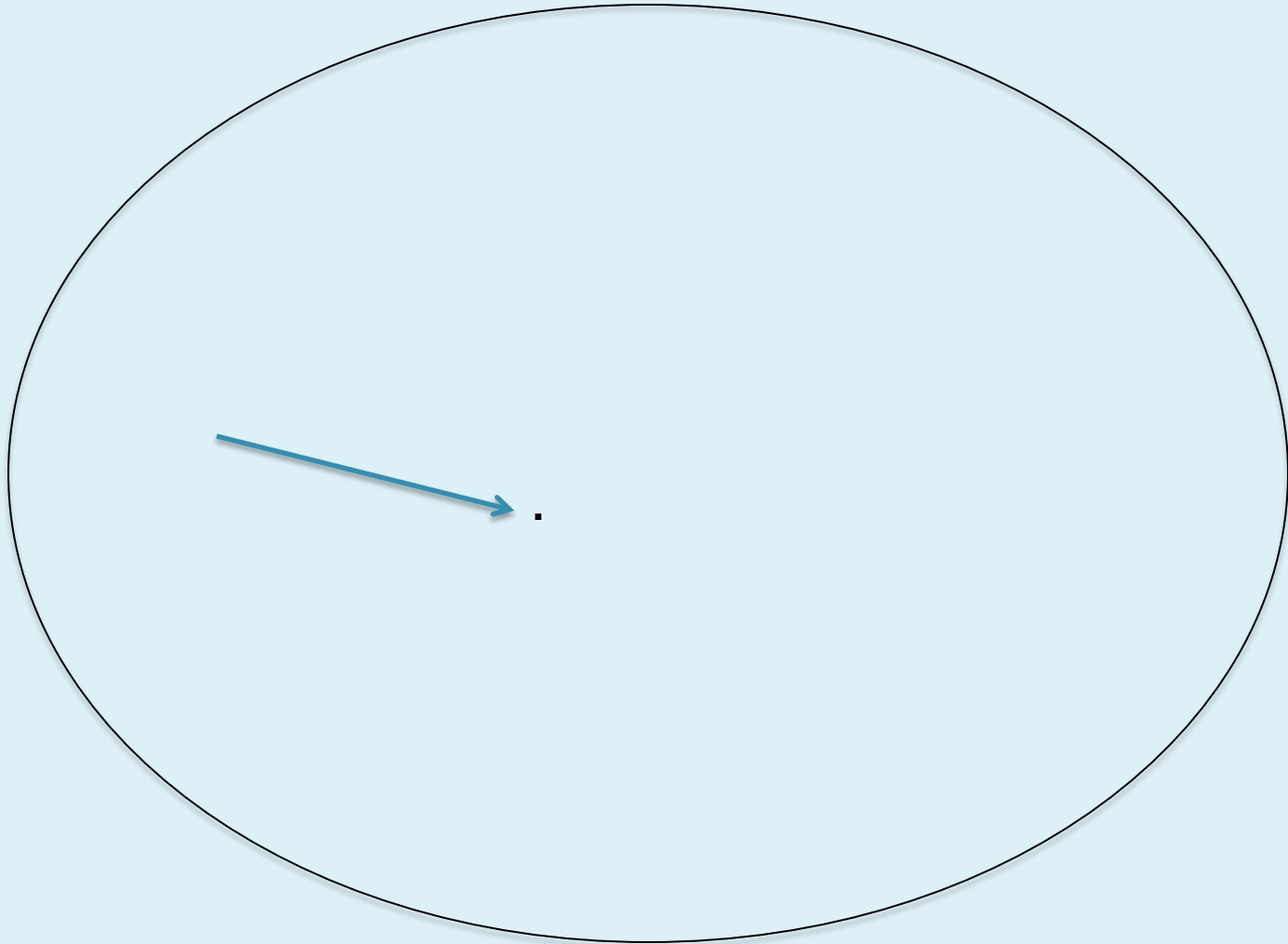
Higher Consciousness of Common Self

- Humans are responsible for keeping Life on Earth going
- An “awareness of Spirit that enables them to ***accept differences of manner, custom, speech, behavior, even of belief, while still feeling an underlying unity***. It is awareness of Spirit that enables them to avoid the conflict and hostility that arise so easily from such differences” (Turnbull, 1984, p. 75).

Culture of Cooperative Companionship

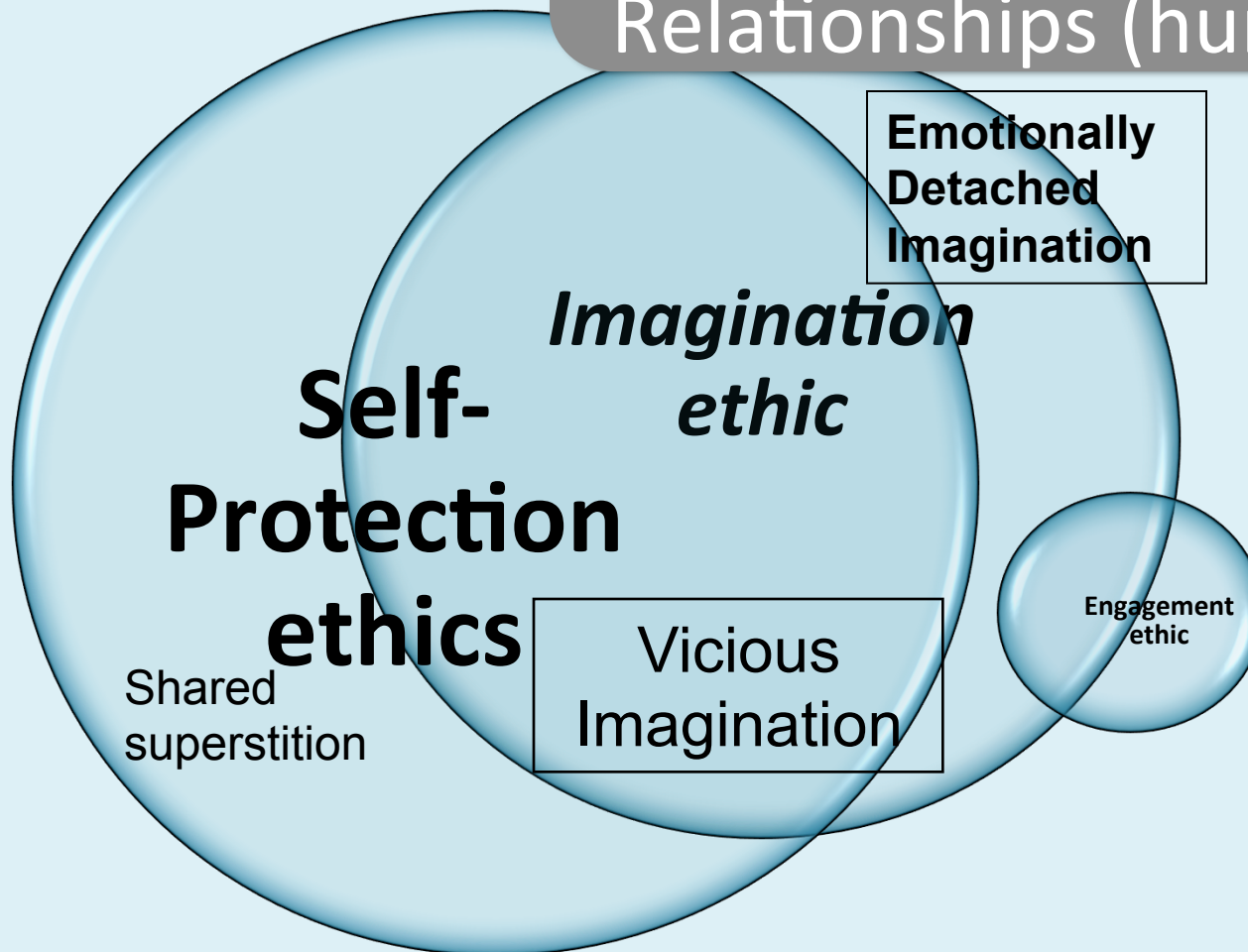


Genetic Competition: 1/1000



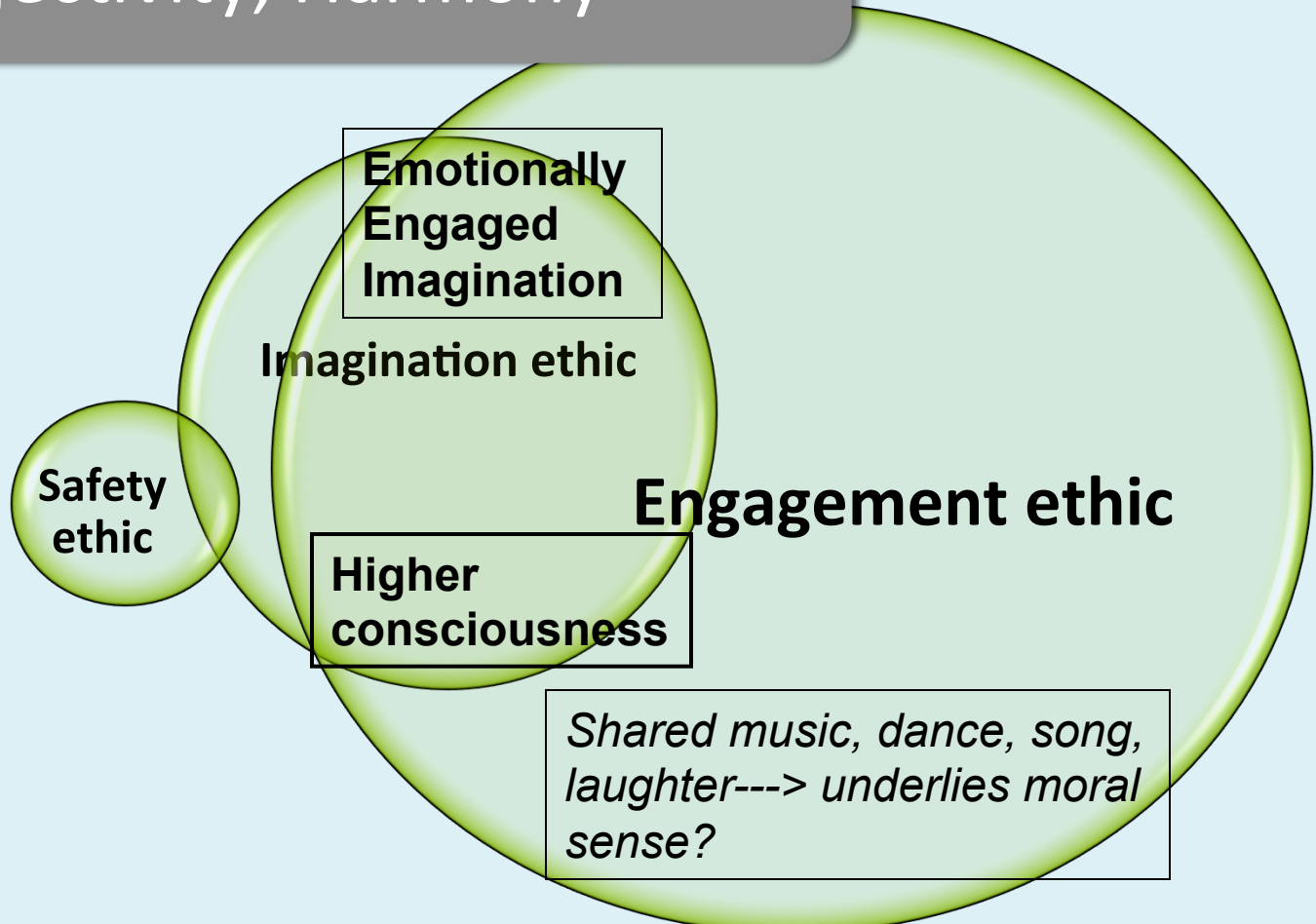
Western Life

Hierarchy, Status, Dominance
Alienation from Nature and
Relationships (hungry ghost)



Small-Band Hunter-Gatherer Life

Subjectivity of all, Connection,
Intersubjectivity, Harmony



Morality is embodied

- Starts bottom up
- Based in implicit procedural knowledge
- Personal (experiential) knowledge (Polanyi)
- Interpersonal
- There are no formulas, every relationship, situation is unique
- What can we do?

FOR ADULTS: Developmental Ethical Ecological Practice (DEEP)

I. SELF-MENDING

1. Take up purposeful self-authorship using an expertise development approach
2. Learn self-calming
3. Slow down, revamp and reframe

II. SELF-DEVELOPMENT

1. Expand your social self
 - Connect
 - Enjoy
 - Practice presence
2. Monitor your moral mindsets



Acceptance and attunement



Defensive

Compliant but withdrawn

FALL: Self-disowning

Imbalance

Balanced Centered Self

FALL: Relationship disowning

Imbalance

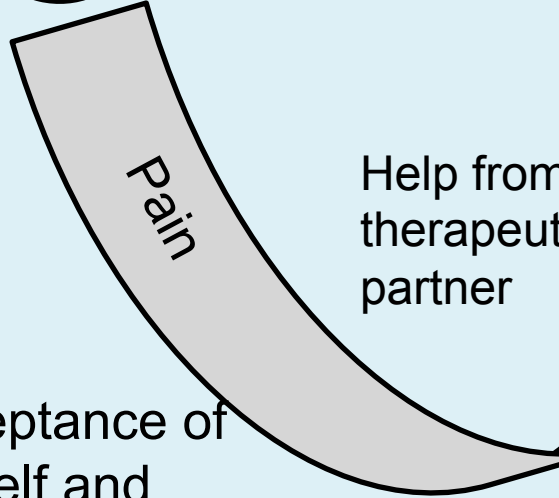


Defensive

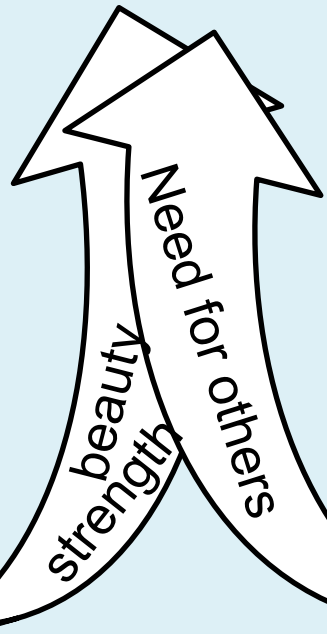
Combative and/or Controlling

I am inferior

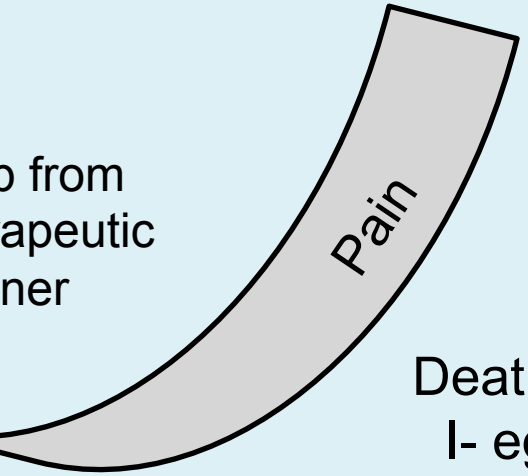
I am superior



Help from therapeutic partner



Help from therapeutic partner



Acceptance of self and responsibility

Embrace one's humanity with humility

Death of I- ego

III. TOWARDS COMMONSELF WISDOM

1. Nurture ecological attachment
2. Foster I-ego-detachment and small I-ego
3. Interrogate systems
4. Build primal wisdom skills
5. Practice Ecological Meta-Wisdom

	Small-band gatherer-hunters	United States Today
Social embeddedness	High	Low
Social support	High	Low
Socially purposeful living	Normative	Non-normative
Community social enjoyment	Everyday	Rare (spectator sports, religious services)
Boundaries	Fluid, companionship culture	Rigid kinship culture, social classes
Physical contact with others	Considerable (sleeping, resting, sitting, dancing)	Minimal
Relations with other groups	Cooperative	Competitive attitude although cooperative action
Individual freedom	Extensive (freedom to leave, to play, freedom of activity; no coercion)	Primarily free to make consumption choices (freedom to move if adult)
Relationships	Egalitarian (no one bosses anyone)	Hierarchical (adults over children, boss over worker, teacher over student)
Contact with other ages	Multi-age group living day and night	Rare outside of family home
Role models	Virtuous	Frequently vicious within popular and news media
Cultural mores	Generosity and cooperation are fostered and expected	Selfishness and stubbornness are expected and fostered by popular culture
Immorality	Cheating, abuse, aggression were not tolerated	Cheating, abuse, aggression expected
Natural world	Embeddedness in and partnership with nature	Detachment from, control and fear of nature

Remedy for the culture

- Shift our consciousness
- Understand our heritages
 - Naturally cooperative
 - Communal imagination
- Build receptive intelligence
- Build ecological attachment

Adopt a Common Self Mindset

- Relationships are fundamental
- Nature is full of living agents
- All are connected through a Web of Life
- Individualism AND collectivism
- Eternity is now (enlightenment)

Remedies for helping parents with child raising

- Support following the evolved developmental niche
- Assist parents in being present
- Provide all children with
 - Positive social support throughout childhood
 - Lots of free play with others
 - Immersion in natural world

Fostering Human Essence Early*

Baby Bill of Rights

- Welcoming beginning with natural birth at full term (40-42 weeks)
- **No induced pain** at birth or in childhood (e.g., no punishment)
- **Breastmilk on demand** for several years
- **Intensive maternal/caregiver contact from birth, with separations only initiated by the child**
- **Deep bonding and limbic resonance with caregivers**
- **Treatment as an equally-important person**
- **Needs respected and met**
- **Appreciation expressed through positive touch**
- **To be embedded within the activities of a family 24 hours a day**
- Community care
- Full autonomy as development allows
- Spirit support (no coercion)
- **Full sensory and intellectual development**

**Sometimes an emergency will make one or more impossible but every effort should be made to provide as many as possible to every child.*

WHAT FOSTERS INDIVIDUAL AND COMMUNITY WELLBEING?

Pathways to Child Flourishing



September 27–30, 2014

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Evolution, Early Experience and Human Development

From Research to Practice and Policy



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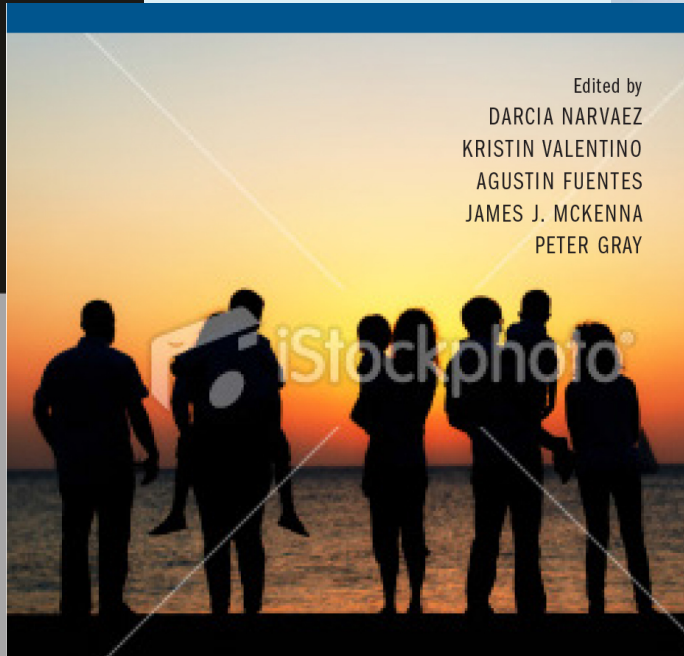
Ancestral Landscapes in Human Evolution

Culture, Childrearing and Social Wellbeing

OXFORD

NEUROBIOLOGY AND THE DEVELOPMENT OF HUMAN MORALITY

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