



Evolution and Depression

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Life can be difficult so we need to prepare!



www.aftad.org

The Challenges of Evolution

1. Old Brain

Emotions: Anger, anxiety, sadness, joy, lust

Behaviours: Fight, flight, withdraw, engage

Relationships: Sex, status, attachment, tribalism

2. New Brain

Imagination, fantasise, look back and forward, plan, ruminate, integration of mental abilities

Self-awareness, self-identity, and self-feeling

3. Social Brain

Need for affection and care

Socially responsive, self-experience and motives

What happens when new brain is recruited to pursue old brain passions?



Depression as a Syndrome

Motivation Apathy, loss of energy and interest: things seem pointless, hopeless

Emotional Low mood, anhedonia, emptiness, anger or resentment, anxiety, shame, guilt

Cognitive Poor concentration, negative ideas about the self, the world and the future.

Behaviour Lowered activity, social withdrawal, agitation or retardation.

Biological Sleep disturbance, loss of appetite, loss of weight, changes in circadian rhythms, hormones and brain chemicals.

Key symptom is **anhedonia**, loss of pleasure
and positive affect

Anhedonia

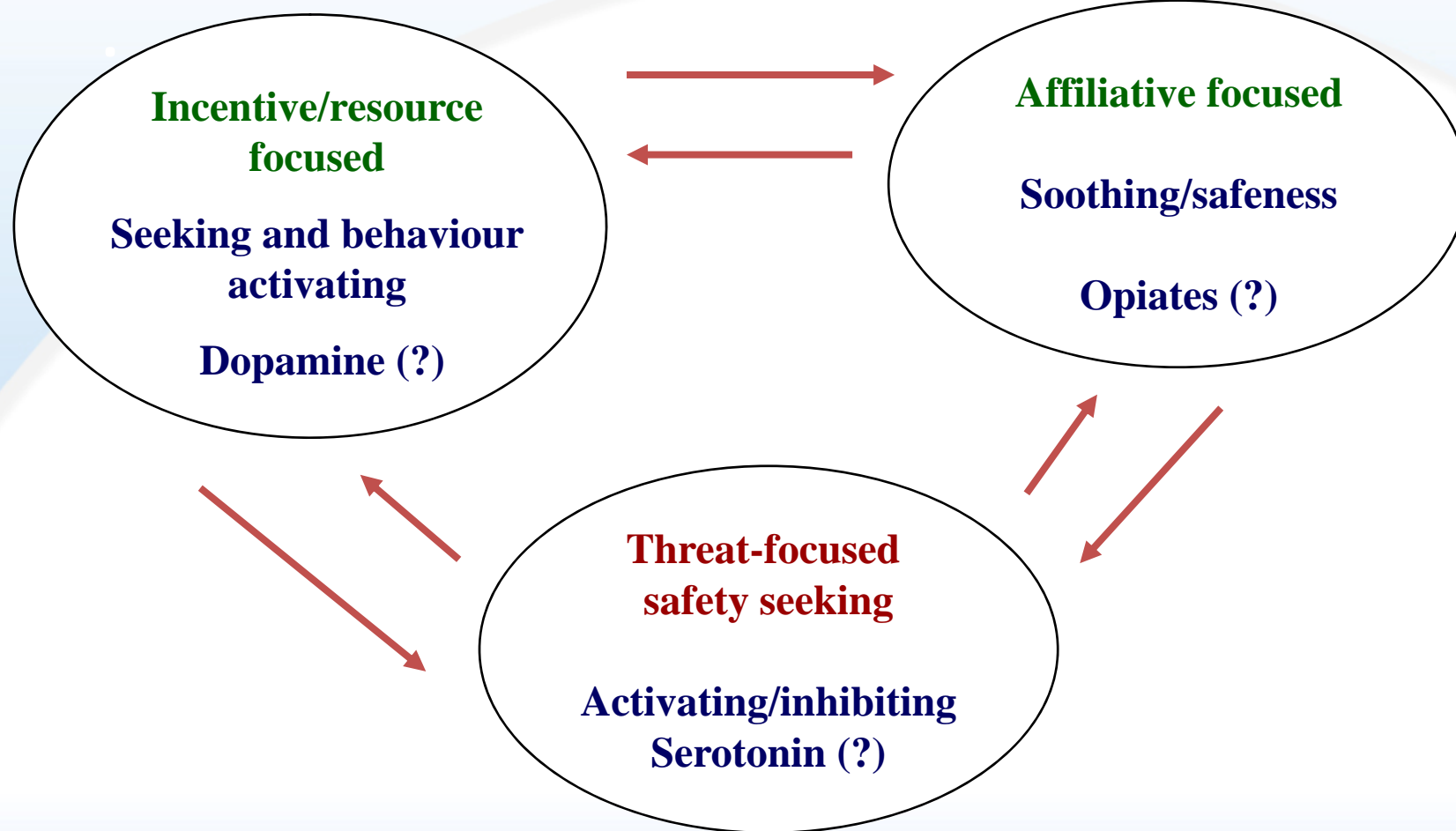
Different meanings of anhedonia:

- * Loss of interest
- * Loss of pleasure - positive affect
- * Loss of motivation
- * Disengagement –reduced exploration

Need to explain:

- * Types and functions of positive affect
- * Regulators of positive affect
- * Value of toning-down positive affect
- * Loss of confidence

Types of Affect Regulation Systems



Threat and Depression

Depression as a pattern of increased threat-system activation and lowered positive affect activation is mostly likely to be linked to strategies for handling threats – especially social threats

Main Evolutionary Theories

Non-social

Conservation of resources

Harm minimisation

Stop pursuing the unobtainable

Defeat and arrested defences

Social

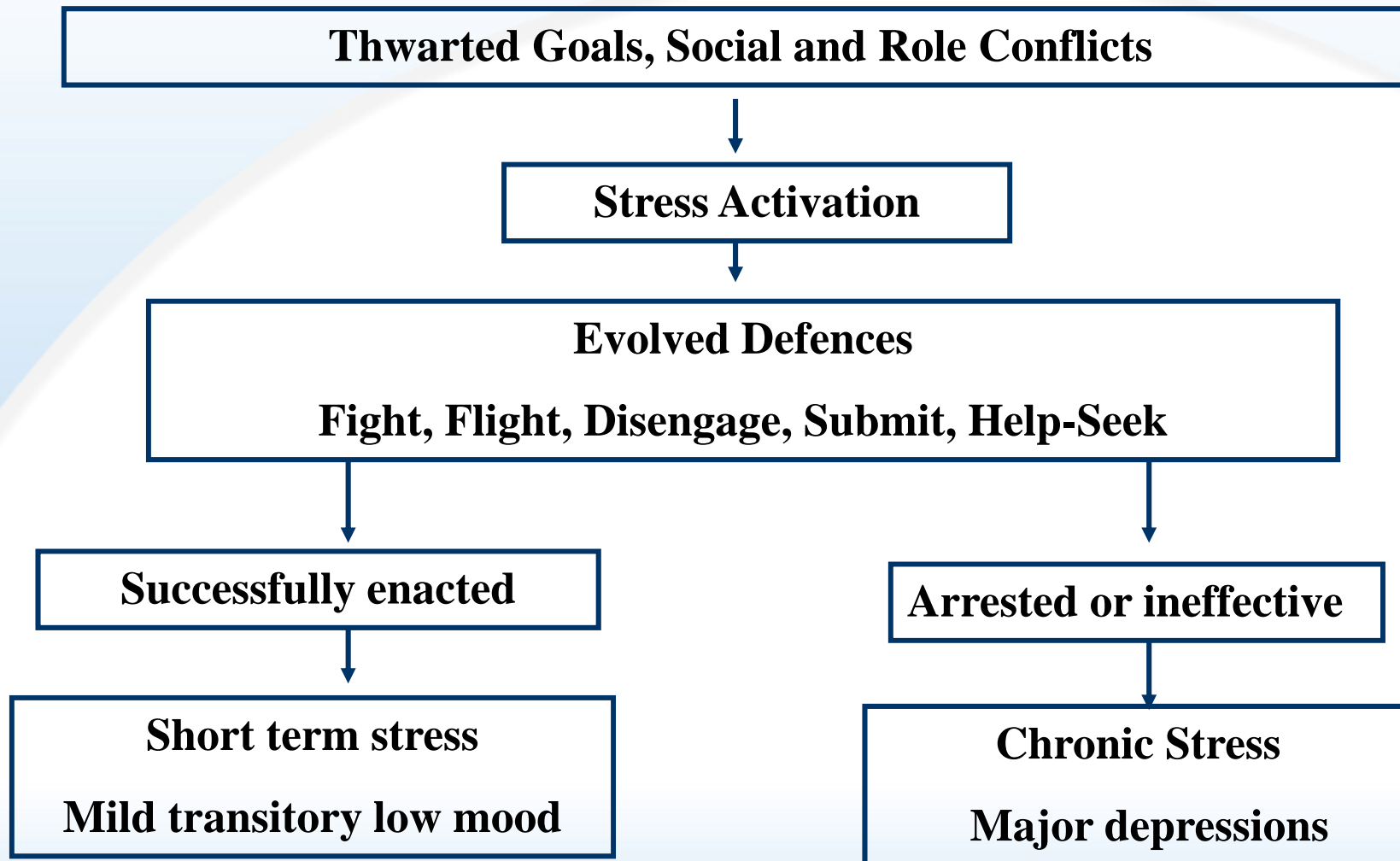
Affiliation loss - disconnection

**Social defeat and involuntary
subordination - social powerlessness**

**Pathways to regulation of positive affect and
behavioural activation/deactivation**

Defeat and Entrapment Model

Arrested Defences and Depression



Key Depression Variables

Defeat – must downgrade positive affect to induce disengagement and avoid further injury or risk of harm/loss and signal to others

Entrapments – cannot get away from hostile and thwarting environments - arrested defenses –high arousal

Measuring Defeat and Entrapment

Defeat

I have sunk to the bottom of the ladder

I feel defeated by life

Entrapment

I am in a situation I feel trapped in

I have a strong desire to escape from things in my life

Both are linked to suicidality

Gilbert and Allen 1998 Psychological Medicine

Some data

Evidence for heightened defeat and arrested flight in depression/anhedonia (N=90)

Entrapment

BDI (r = .54)

HP (r = .61)

ANH (r = .63)

Defeat

BDI (r = .77)

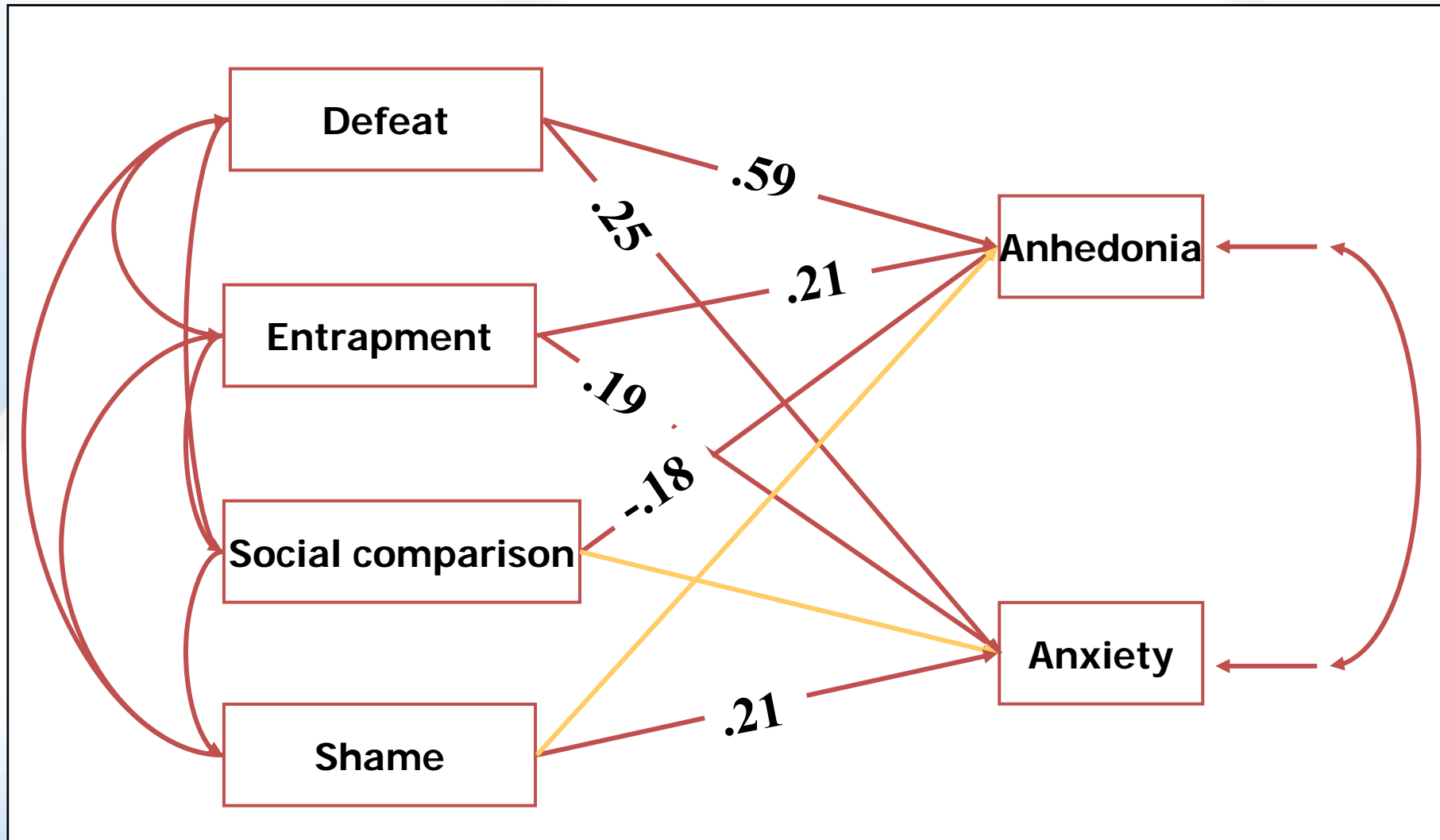
HP (r = .65)

ANH (r = .79)

BDI = Beck Depression Inventory; HP= Hopelessness, ANH = Anhedonia

**Source: Gilbert & Allan (1998), Psychol. Medicine,
Gilbert et al (2002), J. Aff. Dis.**

Path diagram of relations between social rank variable, anhedonia and anxiety



Attachment Loss

Social Disconnection

Affiliation – disconnection model

Dispersal – low care (e.g., Turtles)



Protection – close seeking 'other' becomes a psychobiological regulator (Mammals)



Loss triggers protest (attract attention –reunion)



Despair following non-reunion protest
(close down positive affect systems) –
avoids predation, dehydration and getting lost

Functions of Caring Attachments

The Carer-Provider offers.....

Protection: anticipating/preventing; build nest out of harms way, defending/standing up for – advocate

Distress call responsive: listening out for; rescuing; coming to the aid of – responding to distress

Provision: physical care, hygiene, food

Affection: warmth positive affects that acts as key inputs for brain maturation

Education and Validation: teach/learn life skills in family context: understanding one's own mind

Interaction: being present, stimulating and regulating various affect systems: curiosity, play, soothing – socialising agent – shaping phenotypes

Functions of Early Relationships

Provide protection from external danger

Provide needed resources – food, warmth

Stimulate (positive) affect systems

Emotional regulation

Guide self-other evaluative systems

Threats: low protection, low positive affect, neglect, trauma/abuse

Depression highly linked to poor early attachments

Reduced risk of depression in the context of high care even if there is a genetic vulnerability

Evidence linking disconnection-despair to depression

Low-affection parenting early vulnerability factor for depression

Lack of social support is a common current vulnerability factor for depression

Loss events common triggers for depression

Experience of depression often associated with inward feeling of aloneness, cut off from others - disconnected from help

Understanding the *neuroscience of affiliation and loss*

Relationship between Defence and Safeness in Attachment

Attachment Relationship

Threat/low safeness

Better safe than sorry
Prime fight, flight, submit,
help seek
Damage limitation

Safe empathic

Enhancement (vs dam lim)
Explore, develop, initiate,
creative, novel, open,
relaxed

Role Relationships

It is relative balance that is important – related
to complex internal relationship

• **Competing for social
Attractiveness**

Shame and Depression

Strategies for Gaining and Maintaining Rank and Status

Strategy	Aggression	Attractiveness
Tactics used	Coercive Threatening Authoritarian	Show Talent Show competence Affiliative
Outcome desired	To be obeyed To be reckoned with To be submitted to	To be valued To be chosen To be freely given to
Purpose of strategy others	To inhibit others To stimulate fear	To inspire, attract To stimulate positive affect

From Gilbert & McGuire 1998

Safeness and the Minds of Others

**Creating positive feelings and thoughts in the minds of others, about oneself,
makes the world safe**

safe and will not be rejected or attacked

likely to be available in time of need

co-create advantageous relationships (e.g., sexual, co-operative)

physiologically regulating (e.g. oxytocin, cortisol)

stimulates positive feelings for self and other

lay down emotional memories of warmth

**Creating negative feelings (contempt, anger, ridicule) in the minds of others
leading to attack, rejection or 'un-included' makes the world unsafe**

major threat --- generating defensive behaviours such as

fight/flight/submit



Low Rank - Social defeat

Compete for space and mates – losers leave



Protection – in groups and forming affiliative and sexual relationships – social hierarchies



Compete for place with competitors engaging in choosing, threatening and/or excluding



Voluntary subordination



Involuntary subordination

Acceptance, support
affiliative

rejected, threat, fearful
submission, defeated
lack qualities to make
other's choose one

Attracting, Competition and Social Rank

Seeking to stimulate positive affect (desires) in the minds of others, about the self, is competitive because **an audience will choose in their best interests too**

Competing for resources and social place is thus

1. To be able to engage others as **helpful partners in roles**
2. Helpful partners (expressing liking) also help **make the world safe**
3. Major physiological regulators linked to **health**

Evidence linking social threats and shame to depression

Early abuse, shaming and peer group bullying early vulnerability factors for depression – experience of powerlessness

Social undermining, and criticism/bullying current vulnerability factors for depression

Life events of defeat and status loss common triggers for depression.

Experience of depression often associated with inward feeling of inferiority, powerlessness and defeat

Some Key vulnerabilities in the social rank-shame approach

Social comparisons – major regulators of affect and social behaviour (self as inferior to others).

Submissive behaviour- The readiness to engage in submission as a defense

Social context (ES)- How one lives in the minds of others – external shame (looked down on by others)

Competing to avoid inferiority – the degree to which people feel they have to compete to avoid inferiority and its consequence

Three measures of status vulnerability

Social comparison

Compared to others I generally feel:

Inferior 1 2 3 4 5 6 7 8 9 10 Superior

Submissive behaviour

I agree that I am wrong even though I know I'm not

I do what is expected of me even when I don't want to

External shame

I think that other people look down on me

Other people see me as small and insignificant

Data for Anhedonia

Students (N =193)

Soc Com

- .44

Sub Beh

.44

Ex shame

.56

Patients (N =81)

Soc Com

- .72

Sub Beh

.55

Ex shame

.53

Gilbert et al 2002 Journal of Affective Disorders, 71, 141-151

Competing to avoid inferiority but not seek superiority

Insecure/striving competition

To be valued I have to strive to succeed

Life is a competition

People compare me to others to see if I match up

Secure/non-striving competition

Others will accept me if I fail

I don't feel under pressure to prove myself

You are loved for what you are not what you achieve

Striving to Avoid Inferiority

Students (N =207)

Miss out

.64

passive reject

.67

active reject

.54

Patients (N =63)

Miss out

.73

passive reject

.71

active reject

.75

Data for Striving to Avoid Inferiority

Non-striving

Patients (N = 62)

Soc Com	Sub Beh	Ex shame
-.51	.52	.70
.49	-.32	-.53
Stress	Anxiety	Depression
.71	.52	.52
-.59	-.36	-.39

Internal Shame

and

Self-Criticism

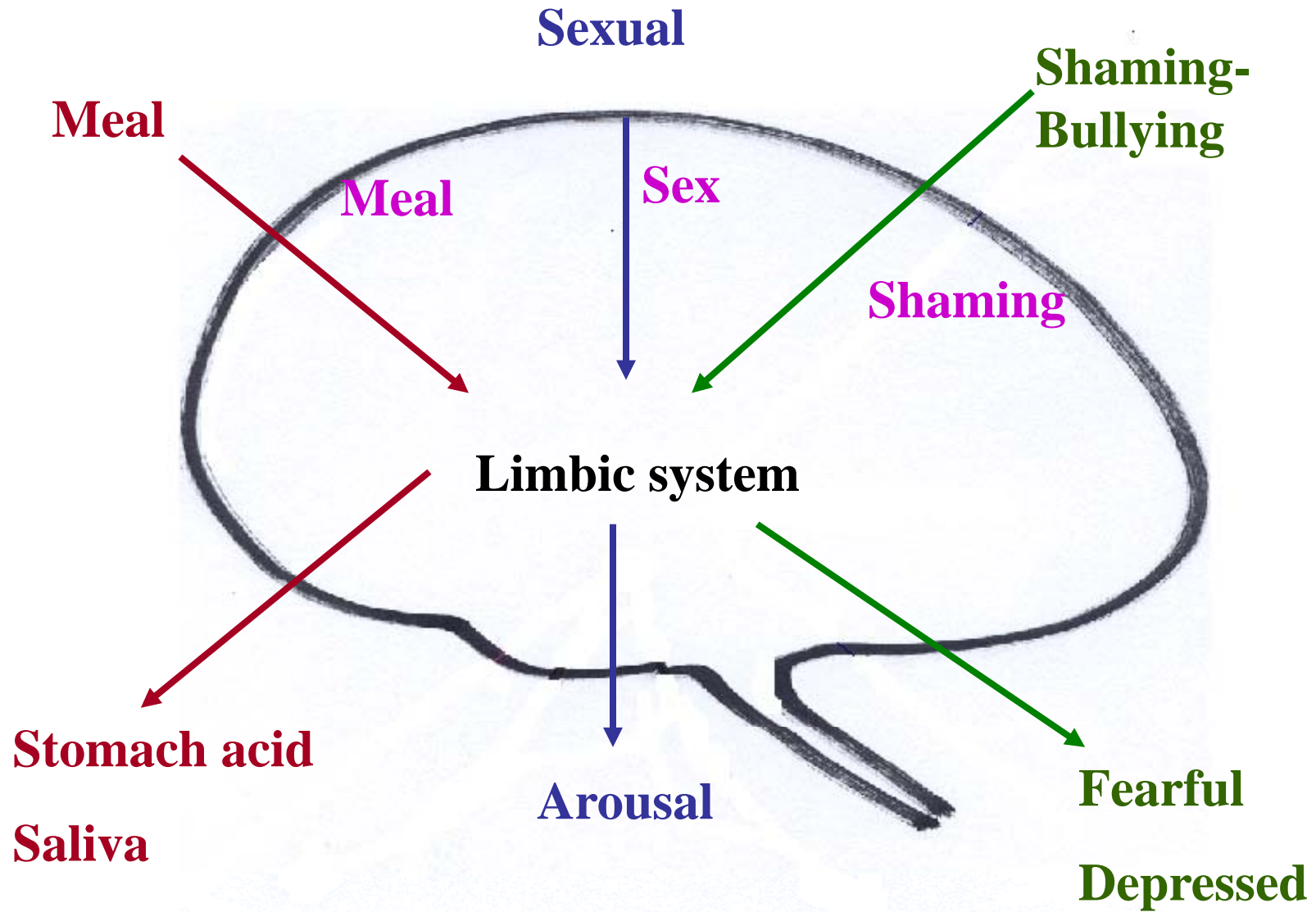
Key Questions

Need to ask:

1. Is it possible that some recent adaptations in the brain make us more vulnerable to mental disorders – e.g., self-awareness, anticipation and rumination?

2. Is it possible that some recent adaptations in the our social-cultural life styles make us more vulnerable to mental disorders e. g., entrapments, domestic violence, mass media.

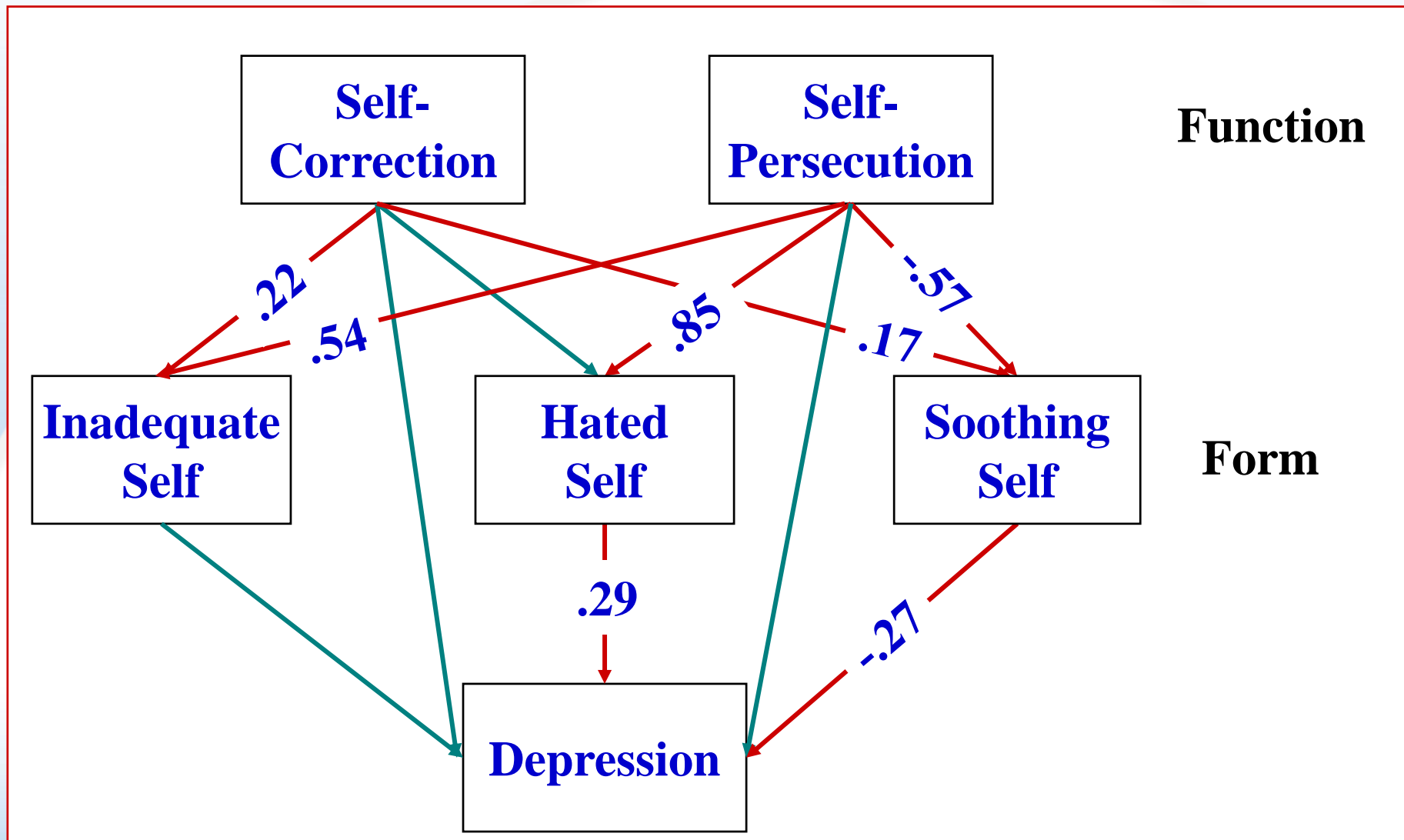
Stimulus-Response



Video

Figure 1: Path analysis showing effect of functions mediated by forms, with standardised parameter estimates labelled. (Statistically significant paths at $p < 0.05$ are shown in bold.)

From BJCP 2004 43, 31-50.



Why Focus on Self-Attacking?

Self-criticism in childhood is a predictor of later adjustment (Zuroff et al., 1994)

Maybe a trait marker for depression (Hartlage et al., 1998)

Predicts life-time risk of depression (Murphy et al., 2002)

Why Focus on Self-Attacking?

**Self-critics have poor social relationships
(Zuroff et al; 1999)**

**Depressed people become more self-critical as
mood lowers (Teasdale & Cox, 2001)**

**Self-critics may do less well with standard CBT
(Rector, et al., 2002)**

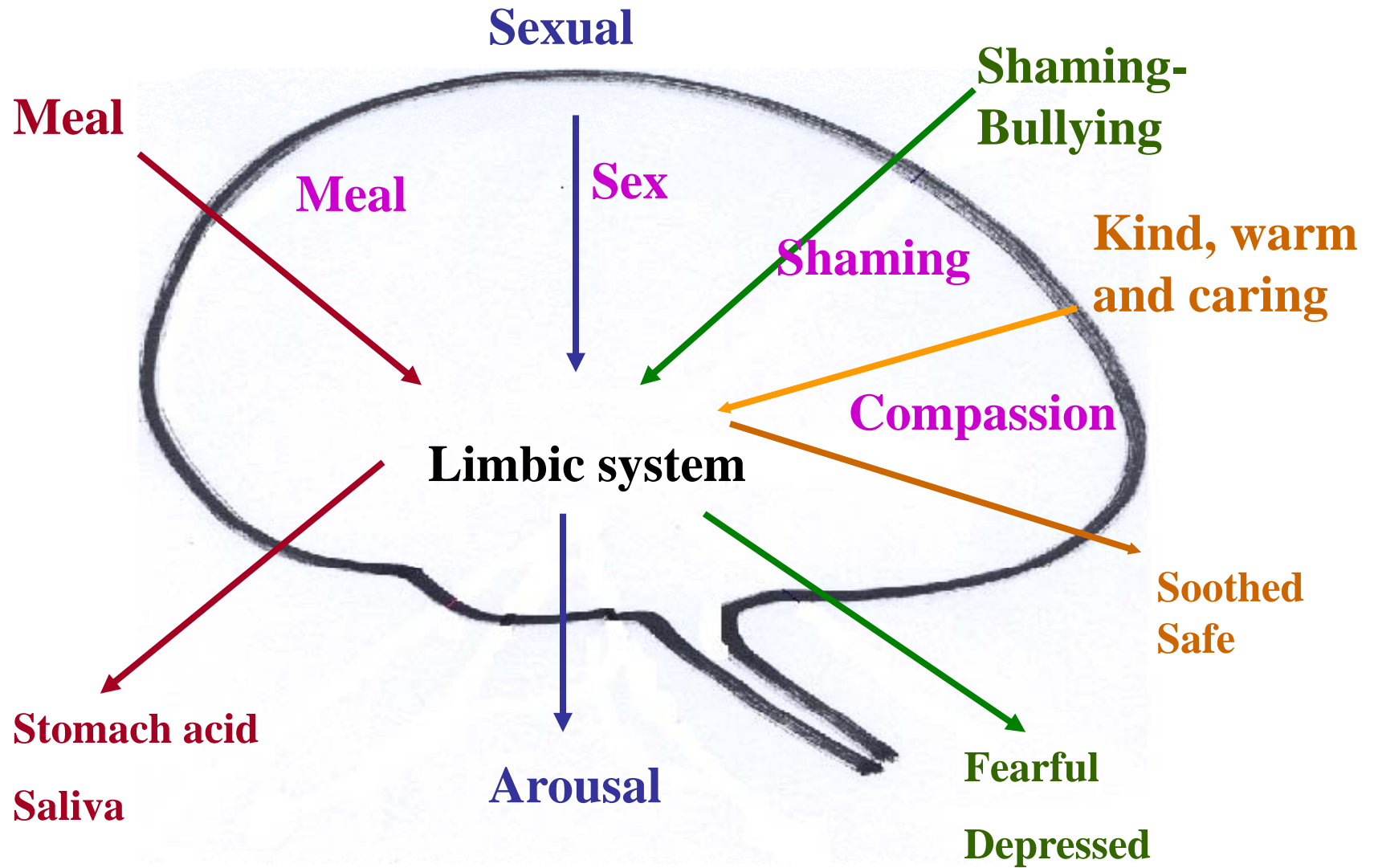
Self-Attacking in Psychosis

70% of voices are malevolent

Commands – sometimes with threats

Insults (direct and indirect)

Stimulus-Response



Conclusion

Evolution has a number of basic systems that become regulated in new ways (e.g., one threat system)

The regulators that give rise to the patterns we label depression are now multiple or as Akiskal and Mckinney said in 1975 –depression is a final common pathway

Understanding people's unique pathways open the avenues for person-focused therapies.

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