Conceptualizing Psychopathy in Terms of *Boldness*, *Meanness*, & *Disinhibition*: Implications for *Prevention & Treatment*

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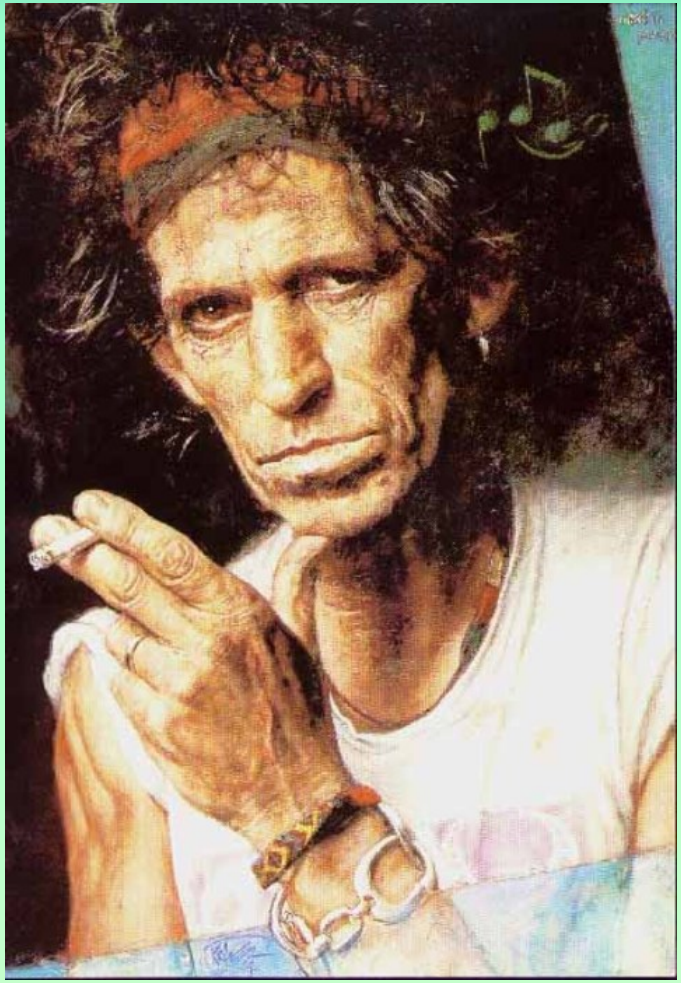
NIMH grants MH65137, MH072850, MH089727

Research on Mental Disorders:

The Times They are a Changin'…

“The old road is rapidly fading
So you better start swimming
Or you’ll sink like a stone…”



Broad Aims of my Research:

1) Finer-grained phenotypic assessment of individuals (vs. “psychopath”, “ASPD”)

- *consistent with proposed revisions to diagnosis of PDs in DSM-V & ICD-11*

2) Operationalize facets of psychopathy in physiological terms

- *consistent with NIMH “Research Domain Criteria” (RDoC) initiative*

Patrick & Bernat (2010): *Neuroscientific Foundations of Psychopathology*

"A number of challenges exist to understanding traditional mental disorders in neuroscientific terms."

e.g., disorder heterogeneity; diagnostic comorbidity; dissimilar measurement domains

Patrick & Bernat (2010): *Neuroscientific Foundations of Psychopathology*

"Neuroscientific conceptualization and understanding of mental disorders can be advanced by focusing programmatic efforts on neurobehavioral trait constructs—that is, individual difference constructs with direct referents in neurobiology as well as behavior."

e.g., (1) defensive reactivity; (2) inhibitory control

Background: Historic Concepts and Current Assessment Methods

What is psychopathy?

- *Longstanding matter of debate*
- *two dominant perspectives historically:*

1) psychopathy as "masked" psychological disturbance
   - *Cleckley, Lykken, DSM-I/II, Lilienfeld PPI*

2) psychopathy as callous, predatory criminal deviance
   - *McCord's, Robins, DSM-III/IV, Hare PCL-R, Frick APSD*

An Integrative Perspective:

The Triarchic Model of Psychopathy

(Patrick, Fowles, & Krueger,
Development & Psychopathology, 2009)

Triarchic Model of Psychopathy
(Patrick et al., 2009)

- psychopathy emcompasses 3 distinct behavioral (phenotypic) components:

  disinhibition, boldness, & meanness

- psychopathy = *persistent disinhibition accompanied by emotional detachment (i.e., boldness and/or meanness)*

Disinhibition

Definition:

- lack of behavioral and emotional restraint

Individuals who exemplify the disinhibition component of psychopathy…

Boldness

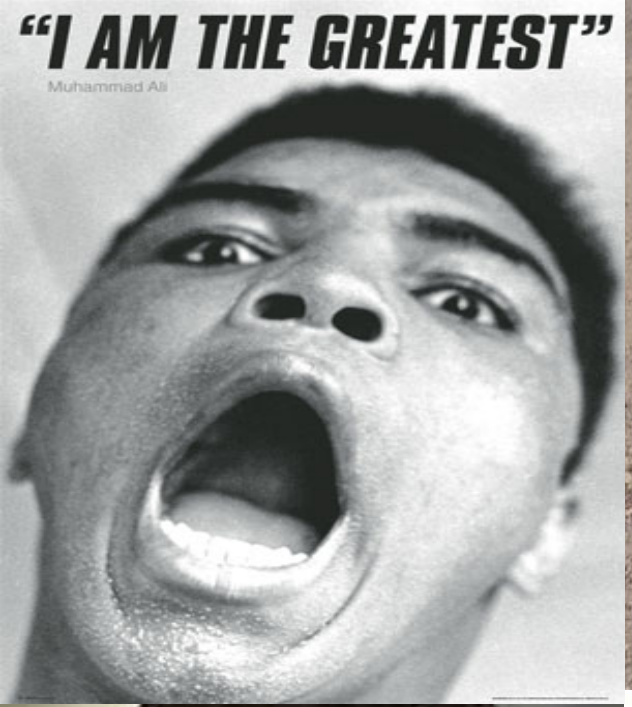
Definition:

- fearlessness in social, emotional, and behavioral domains

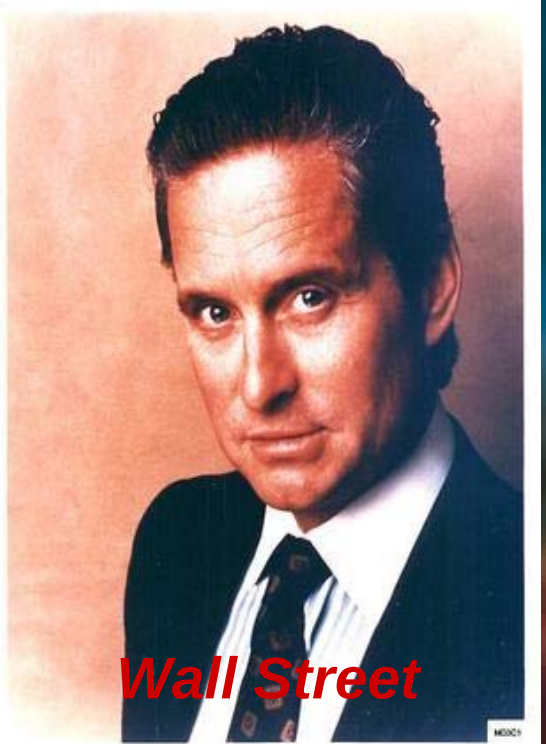
Lykken (1995):

“The hero and the psychopath are twigs on the same genetic branch…

The Hurt Locker


"I AM THE GREATEST"
Muhammad Ali


The Hurt Locker


Wall Street

Issue of “successful” vs. “unsuccessful” psychopathy

Disinhibition:

- lack of restraint promotes maladaptive outcomes

Boldness:

- social efficacy & emotional resiliency are conducive to success

What if *both* are present?

Cleckley (1941/1976):

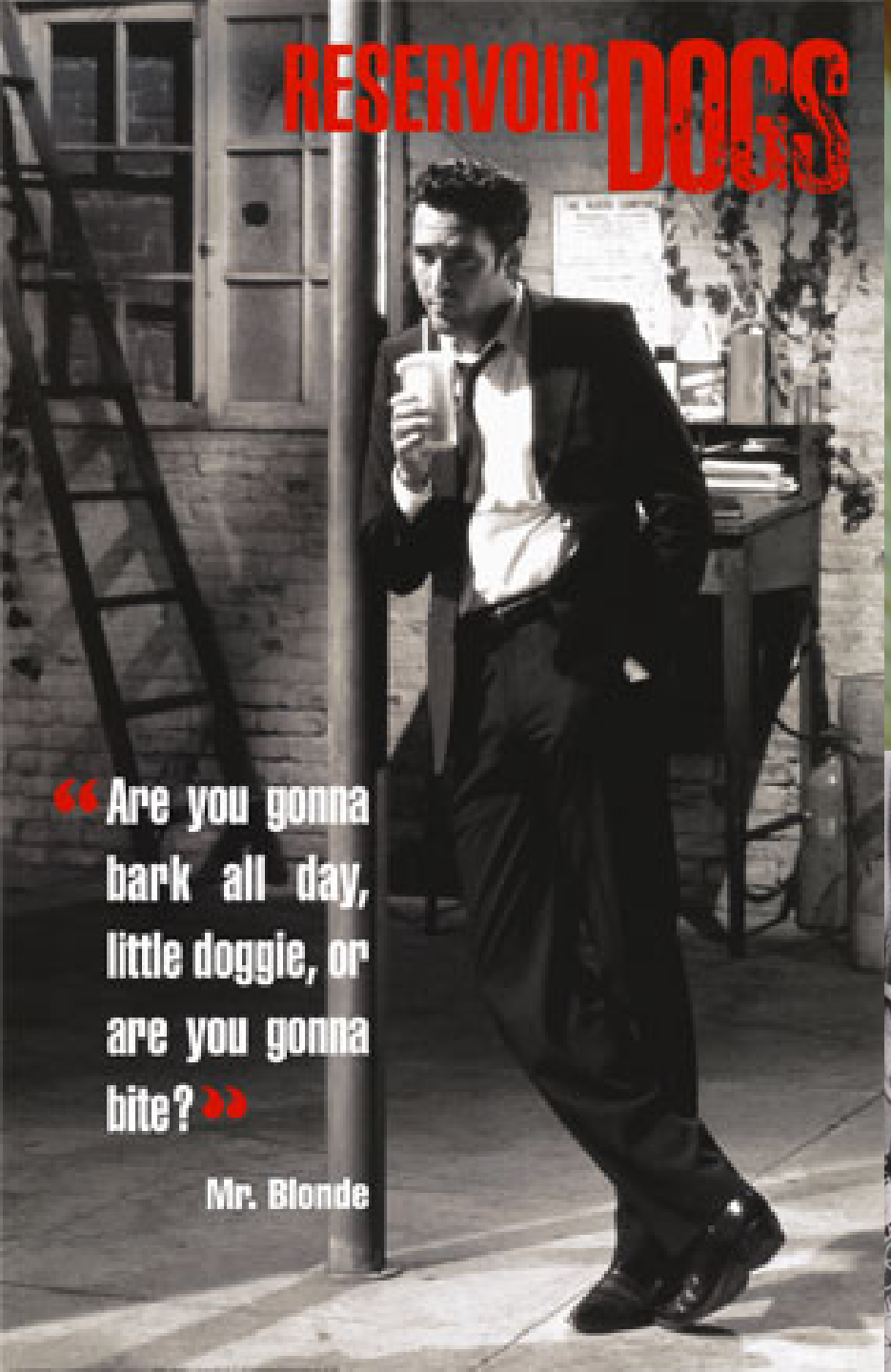
"[His] surface…shows up as equal to or better than normal and gives no hint at all of a disorder within…The observer is confronted with a convincing ***mask of sanity****…*

[H]owever, [he] fails altogether when he is put into the practice of actual living. His failure is so complete and so dramatic that it is difficult to see how such a failure could be achieved by anyone less defective than a downright ***madman****."*

Meanness

Definition:

- aggressive resource-seeking without regard for others (“active disaffiliation”)


RESERVOIR DOGS
“Are you gonna bark all day, little doggie, or are you gonna bite?”
Mr. Blonde


No Country for Old Men

Operationalizing the Triarchic Model: Scale Measures of Boldness, Meanness, & Disinhibition

Boldness

Boldness Inventory

(***Patrick, Vaidyanathan, Benning et al., in prep***)

- scales designed to assess differing facets of boldness suggested by content/correlates of PPI Factor 1 (“Fearless Dominance”)
- boldness: strongly related (~.8) to dispositional fear/fearlessness (*Kramer et al., Psy Med, in press*)
- 9 scales, representing 3 distinct content domains (119 items total)…

Boldness Inventory: Facet Scales

(11-19 items; reliabilities [α] = .87 - .94)

Social Efficacy:

- Dominance (*"I seek out positions of power."*)
- Social assurance (*"It's easy to embarrass me."* [F])
- Persuasiveness (*"I am a persuasive person.*")

Emotional Stability:

- Self-assurance (*"I've got what it takes to succeed*.")
- Resilience (*"I find it difficult to recover from even minor setbacks*." [F])
- Optimism (*"I generally feel hopeful about the future*.")

Venturesomeness:

- Intrepidness (*"I have no desire to parachute out of an airplane*." [F])
- Tolerance for uncertainty (*"It doesn't worry me to be in a strange new place on my own. "*)
- Courage (*"I stay cool, even in emergencies.")*

→ *Brief screening version: 19-items*

Disinhibition & Meanness

Foundation for concepts of disinhibition & meanness:

- literatures on externalizing disorders of childhood & psychopathy in youth
- recent research modeling the domain of *disinhibitory ("externalizing") problems & traits* in adults…

Externalizing Spectrum Inventory (ESI)

(***Krueger, Markon, Patrick et al., J Abnormal Psych, 2007***)

- self-report inventory developed to comprehensively assess disinhibitory problems and related personality traits

→Dutch version available (Sabrina Soe-Agnie, Nijmegen Addictions Inst.)

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- 23 final scales, representing 5 distinct content domains

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- 23 final scales, representing 5 distinct content domains
- factor analysis of these 23 scales revealed
  - Dominant 1st factor: *General Externalizing ("Disinhibition")*
  - Residual factors reflecting
    - *Callous aggression ("Meanness")*
    - *Substance abuse*

Scale indicators of ***General EXT*** ("*Disinhibition*") factor:

- Irresponsibility
- Problematic Impulsivity
- Theft
- Impatient Urgency
- Dependability (-)
- Planful Control (-)
- Alienation

→***brief (20-item) Disinhibition*** **scale indexes this factor**

Scale indicators of ***Callous Aggression*** ("*Meanness*") factor:

- Empathy (-) ⟶ ***Load more strongly on Call-Agg than on General EXT***
- Relational Aggression ⟶
- Destructive Aggression
- Excitement Seeking
- Physical Aggression
- Rebelliousness
- Honesty (-)

→***brief (19-item) Meanness*** **scale indexes this factor**

Triarchic Psychopathy Measure

(TriPM; Patrick, 2010)

- comprises brief (19-20 item) boldness, meanness, & disinhibition scales
- 58 items total
- inventory, scoring key, & manual available…

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- Norwegian translation?

Validity of the TriPM with Offenders and Non-Offenders

TriPM Boldness, Meanness, Disinhibition: *Relations with PCL-R psychopathy*

Sample: 148 male prisoners (MN state prison)

Measures:

1) *PCL-R*

2) *TriPM scales*:

Boldness: 19-item BI

Meanness: 19-item ESI Call-Agg

Disinhibition: 20-item ESI Gen EXT

TriPM Boldness, Meanness, Disinhibition: Relations with PCL-R psychopathy scores

Regression Bs & multiple Rs:

PCL-R score	Bold	Mean	Disihib	*R*
Total	**.27***	**.22***	**.24***	**.53***
Interp	**.30***	.15	.14	**.43***
Affective	.08	**.23***	-.01	**.26***
Lifestyle	.13	.14	**.36***	**.48***
Antisocial	**.20***	**.18***	**.18***	**.41***

*p<.05

TriPM Boldness, Meanness, Disinhibition: *Relations with other self-report psychopathy measures*

Sample: 225 male & female undergrads (FSU)

Measures:

- *Psychopathic Pers Inventory (PPI)*
- *Youth Psychopathic Traits Inventory (YPI)*
- *Levenson Self-Report Ppy scale (LSRP)*
- *TriPM scales*

TriPM Boldness, Meanness, Disinhibition:
Relations with other self-report psychopathy measures

Regression Bs & multiple Rs:

Other Meas's	Bold	Mean	Disihib	*R*
PPI	**.50***	**.46***	**.41***	**.79***
YPI	**.40***	**.37***	**.50***	**.74***
LSRP	.01	**.34****	.23^{+}	**.44***

$^{+}p<.05$ $^{*}p<.01$

→ *PPI-based B, D, M subscales; relations w/ PCL-R total & facet scores parallel those for TriPM scales (N. Poythress)*

Conclusions:

1) PCL-R and some self-report psychopathy measures index all 3 triarchic constructs

- *Rs* for best self-report measures were higher (.7-.8) than *R* for PCL-R (~.5)

→issue of *method variance*

Conclusions:

1) PCL-R and some self-report psychopathy measures index all 3 triarchic constructs

- *Rs* for best self-report measures were higher (.7-.8) than *R* for PCL-R (~.5)

→issue of *method variance* *(Blonigen et al., 2010)*

2) Other self-report psychopathy measures (e.g., LSRP) index disinhibition & meanness only

→same is true of DSM-IV ASPD

DSM-V: Proposed Revisions

Clinical ('axis I') disorders:

- conduct DO *with/without CU traits* (i.e., *disinhibition* with/without *meanness*)

Personality ('axis II") disorders:

- 6 PD trait domains, incl: *Disinhibition*, *Antagonism* (aka *meanness*)
- *boldness* measurable as *high* Att-seeking & Risk-taking + *low* Anxiety & Withdrawal

Personality Inventory for DSM-5

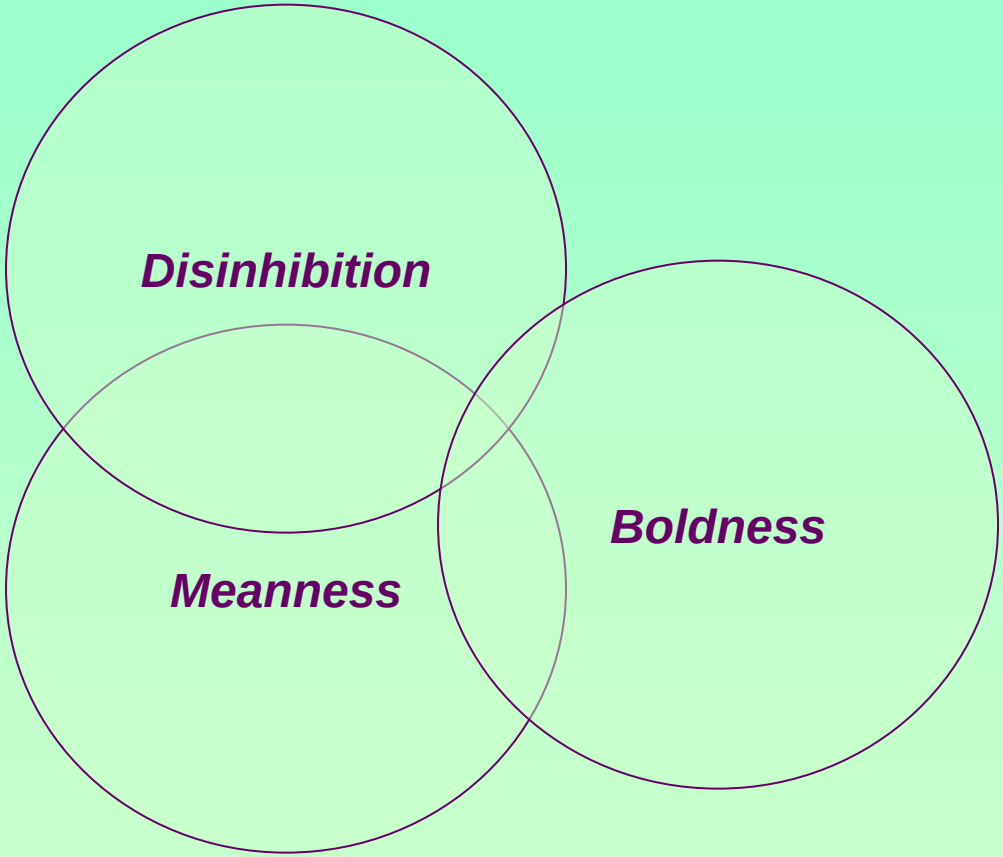
(PID-5; *Krueger et al., Psy Med, in press*)

TriPM scale	PID-5 trait predictors (***r***)	***R***
Boldness	*Risk-taking* (**.45**), *Att-seeking* (**.34**), *low Anxiety* (**-.49**), *low Withdrawal* (**-.36**)	**.70***
Meanness	*Callousness* (**.72**), *Risk-taking* (**.53**), *Manipulativeness* (**.46**)	**.77***
Disinhibition	*Irresponsibility* (**.73**), *Impulsivity* (**.58**), *Risk-taking* (**.44**)	**.77***

Sample: 95 community adults

**p<.001*

Q1: What is psychopathy?



A: <u>Conjunction</u> of somewhat interrelated, but dissociable, phenotypes: Dis + [Mn &/or Bd]

Neurobiological Bases of Boldness, Meanness, & Disinhibition

Patrick & Bernat (2010): *Neuroscientific Foundations of Psychopathology*

"Neuroscientific conceptualization and understanding of mental disorders can be advanced by focusing programmatic efforts on neurobehavioral trait constructs—that is, individual difference constructs with direct referents in neurobiology as well as behavior."

e.g., (1) defensive reactivity; (2) inhibitory control

Boldness

Neurobiological Basis

Boldness:

Hypothesis = weak defensive reactivity

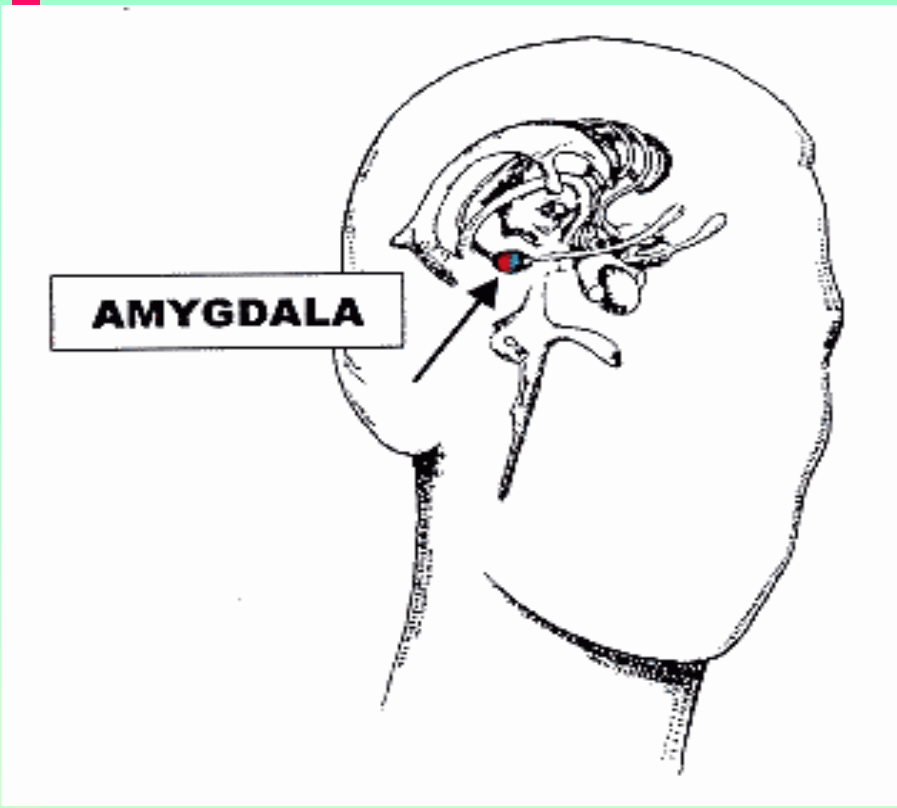
Defensive Reactivity

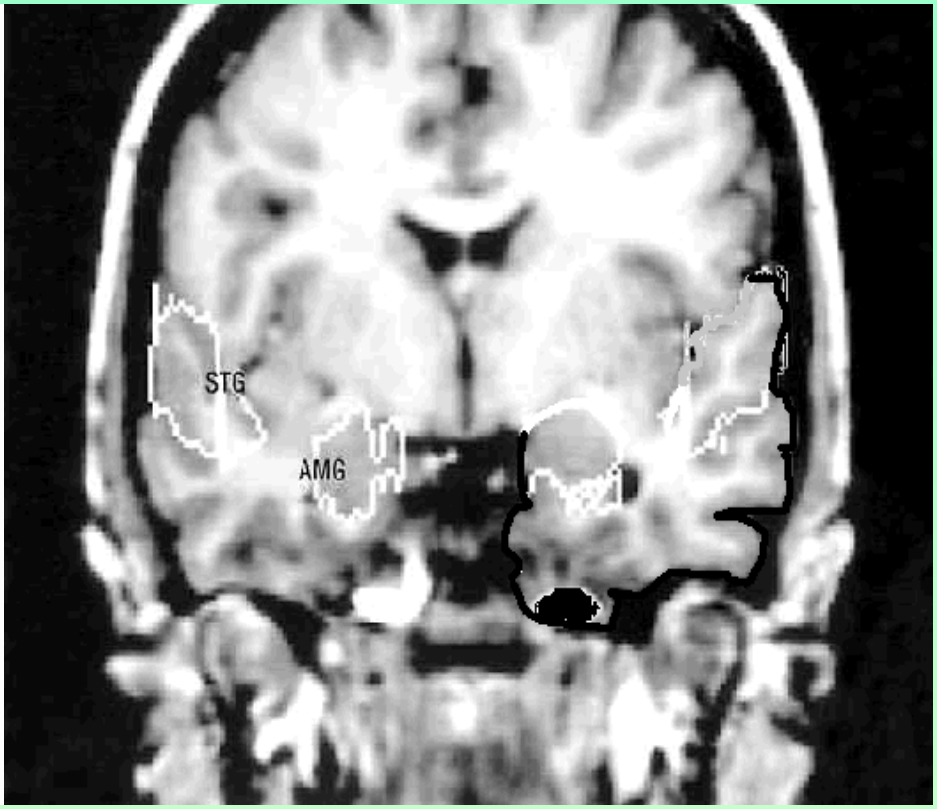
Definition:

- proneness to negative emotional reactivity in the face of threat
- neural basis: sensitivity of the brain's defensive system, incl. amygdala & affiliated structures

A Neurophysiological Indicator of Boldness:

Fear-Potentiated Startle


AMYGDALA


STG
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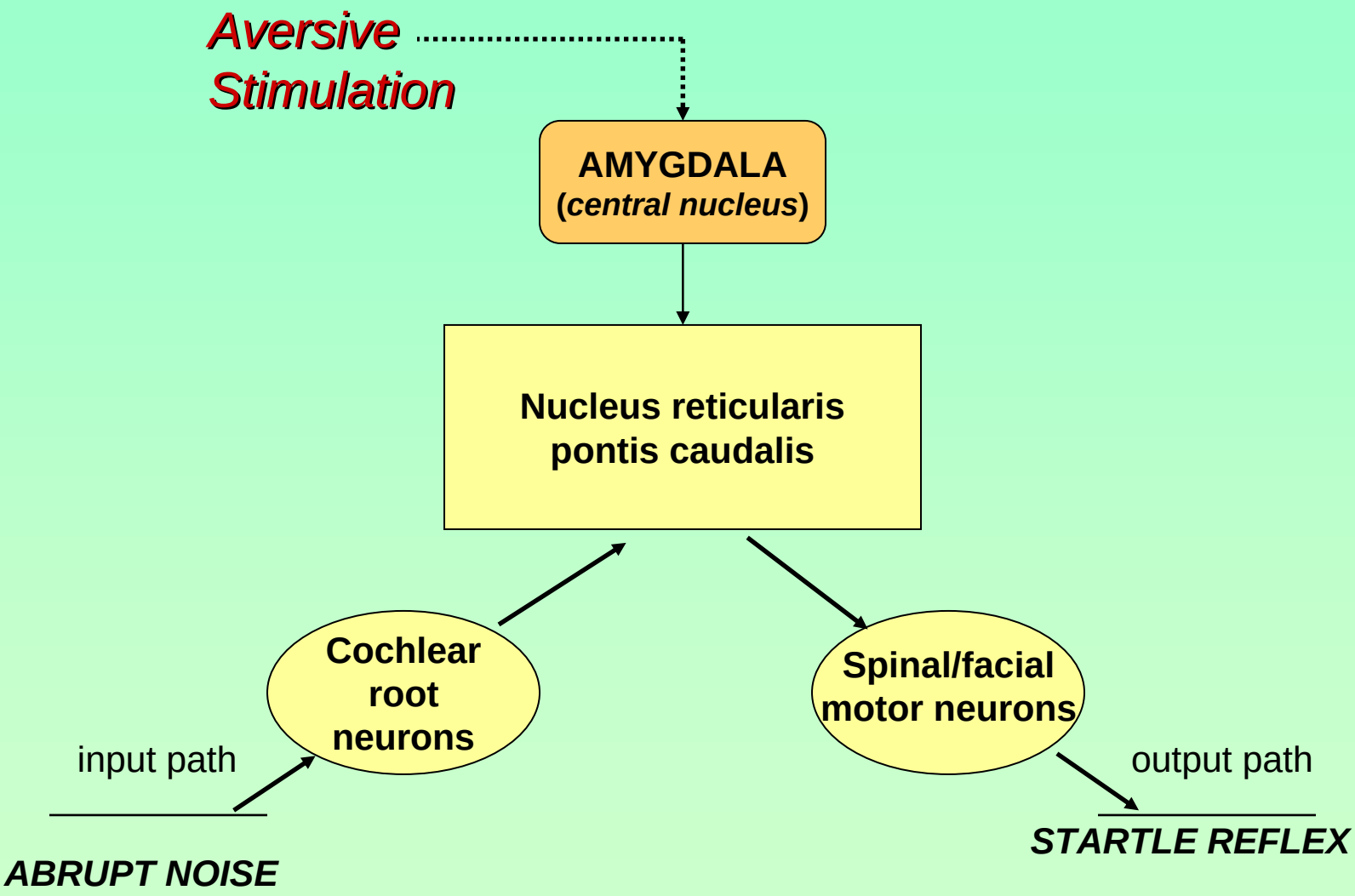
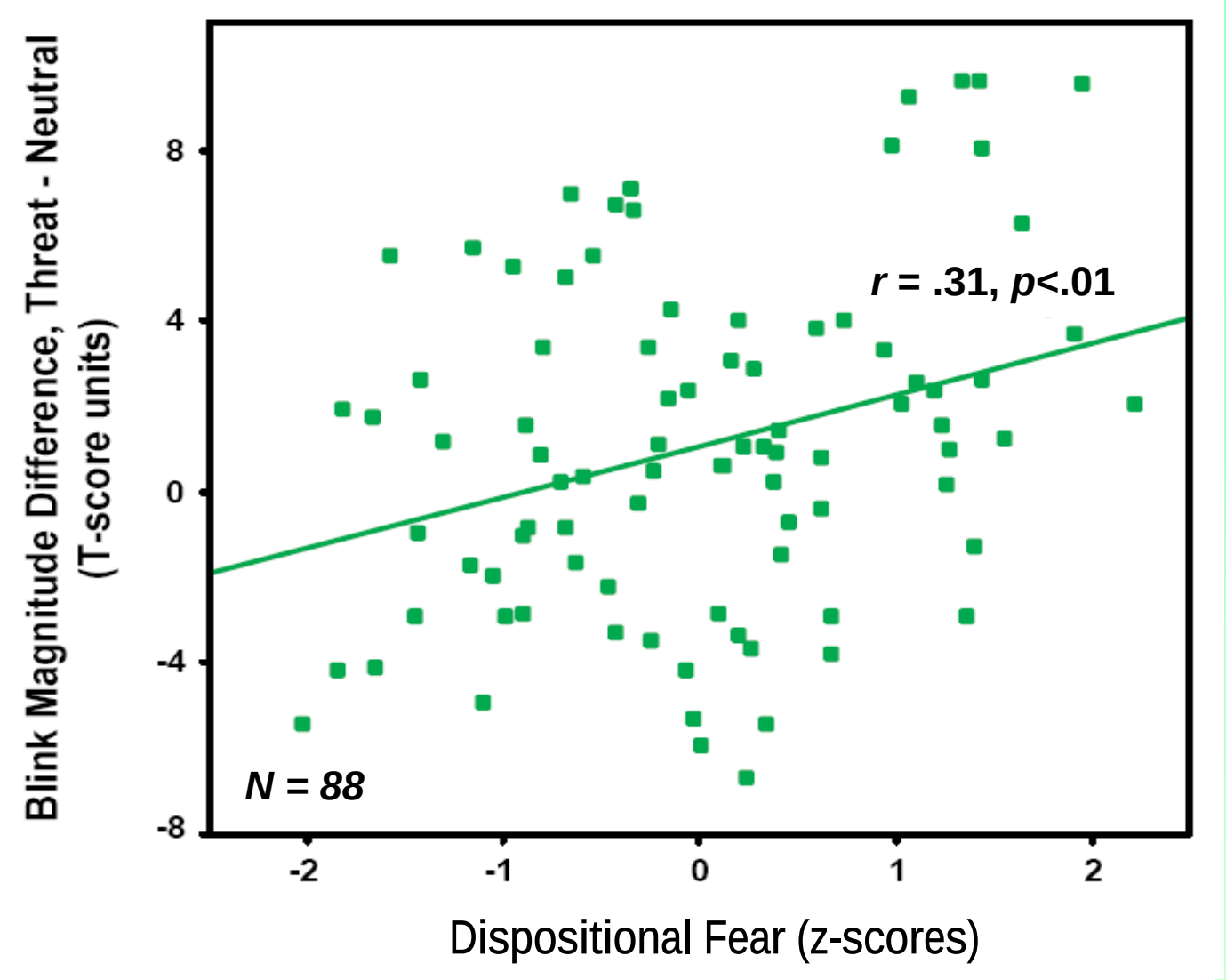
Fear-Potentiated Startle:



Fear/Fearlessness & Aversive Startle Potentiation



Vaidyanathan, Patrick, & Bernat (Psychophysiology, 2009)

Boldness:
Other Candidate Indicators

- Amygdala reactivity to fearful faces (Marsh et al., 2008; Hariri et al., 2002; Whalen et al., 1998)

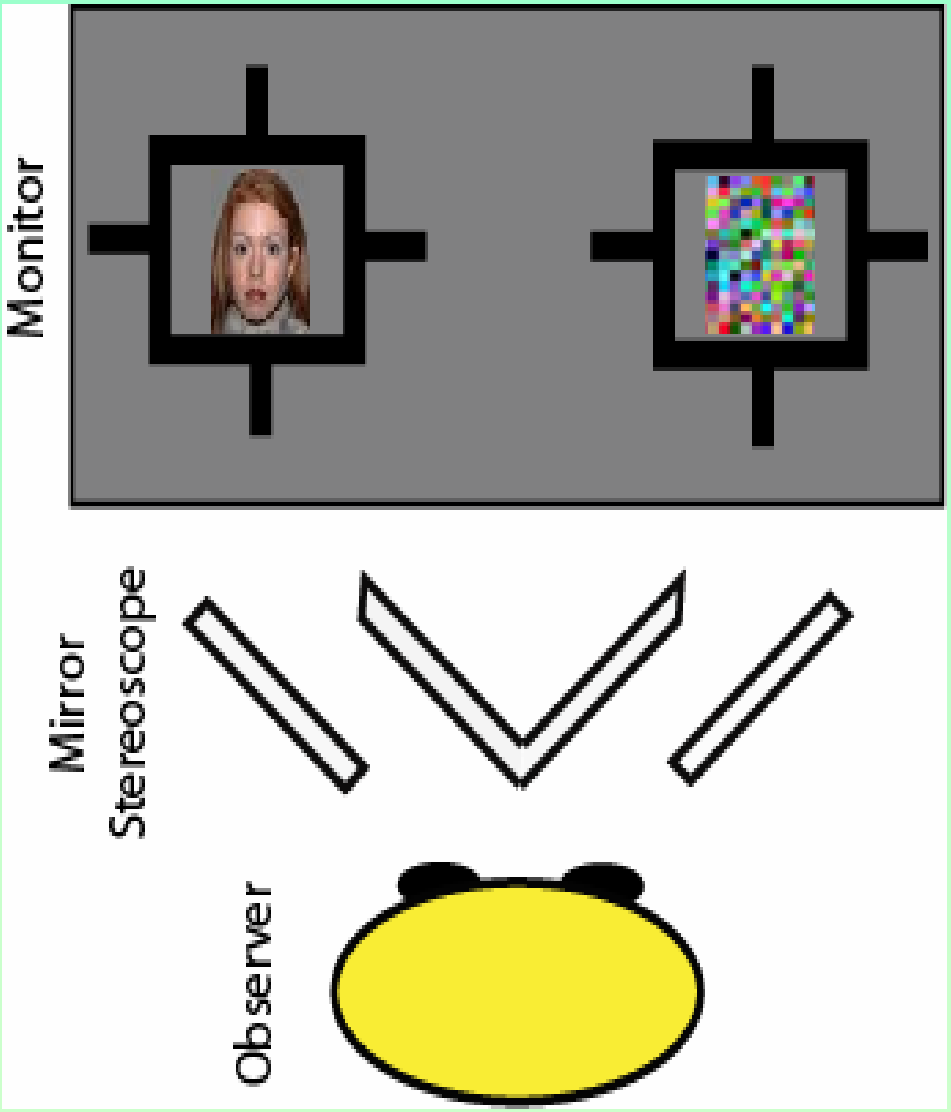
  - recent work by our group: amygdala reactivity to faces rendered invisible, through continuous flash suppression…

Binocular Rivalry

- **Occurs when differing visual images are presented simultaneously to the two eyes**

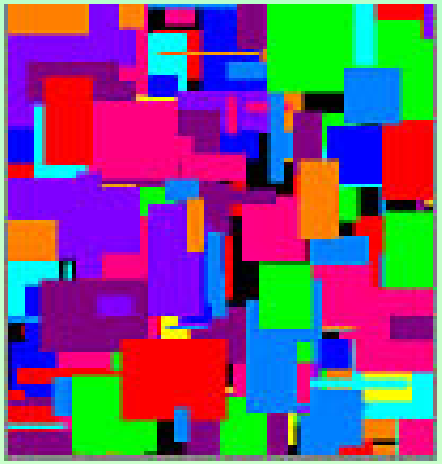
Alternating Percept:

Continuous Flash Suppression

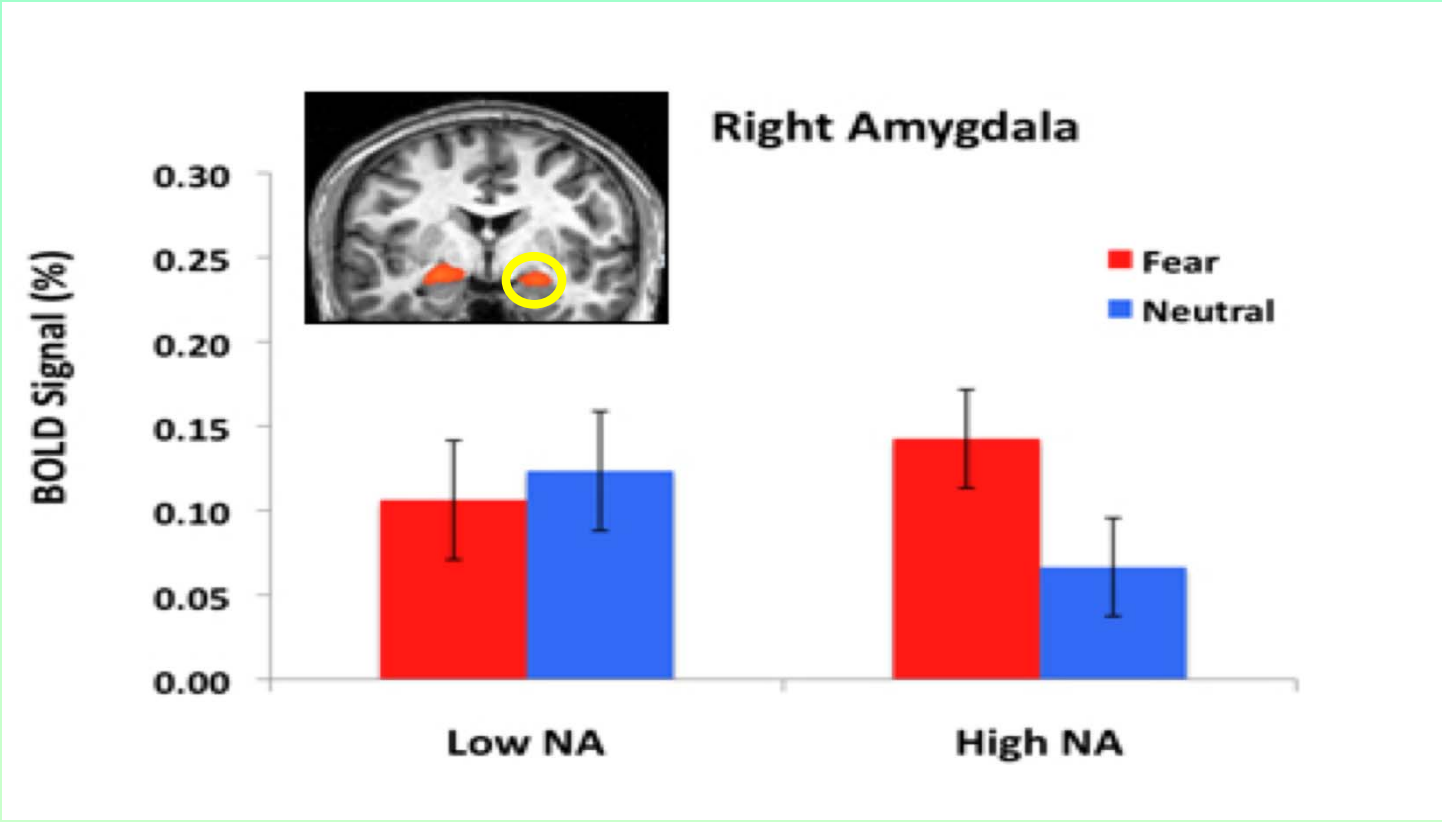


- **Complex/dynamic visual image presented to one eye, simple/static image to other eye**

Continuous Percept:



Individuals high in dispositional Negative Affectivity (NA) show enhanced right amygdala reactivity to suppressed (“invisible”) fear faces



Vizueta, Patrick et al. (Neuroimage, in press)

Disinhibition

Neurobiological Basis

Disinhibition:

Hypothesis = deficient inhibitory control

Inhibitory Control

Definition:

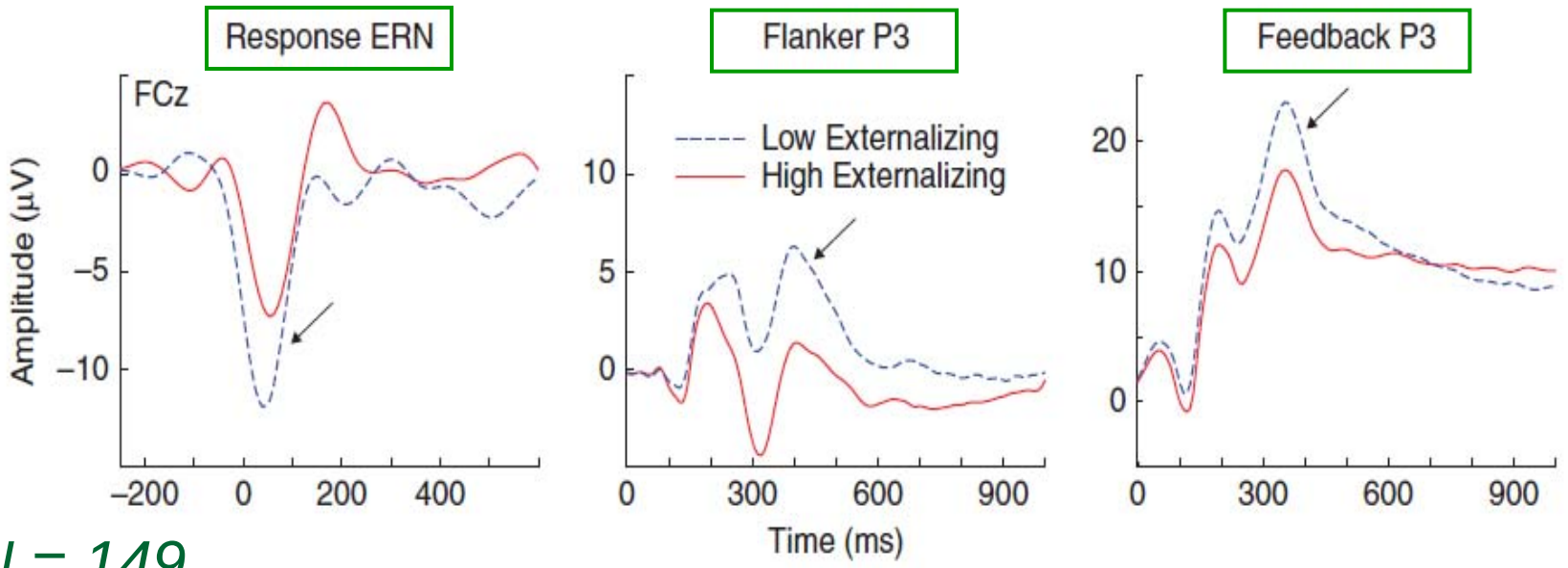
- ability to restrain or modulate impulses
- neural basis: functioning of anterior brain circuitry, including PFC & ACC

Neurophysiological Indicators of Disinhibition:

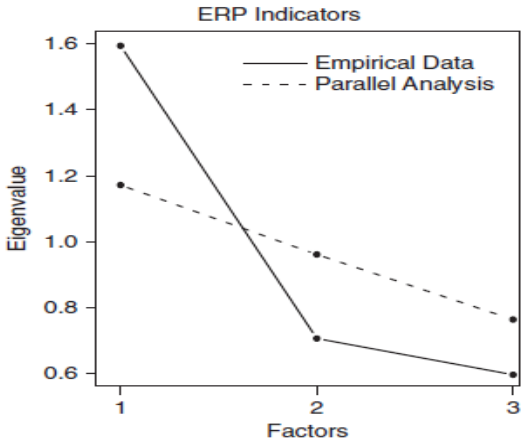
P300

ERN

Nelson, Patrick, & Bernat (2010, Psychophysiology)



N = 149

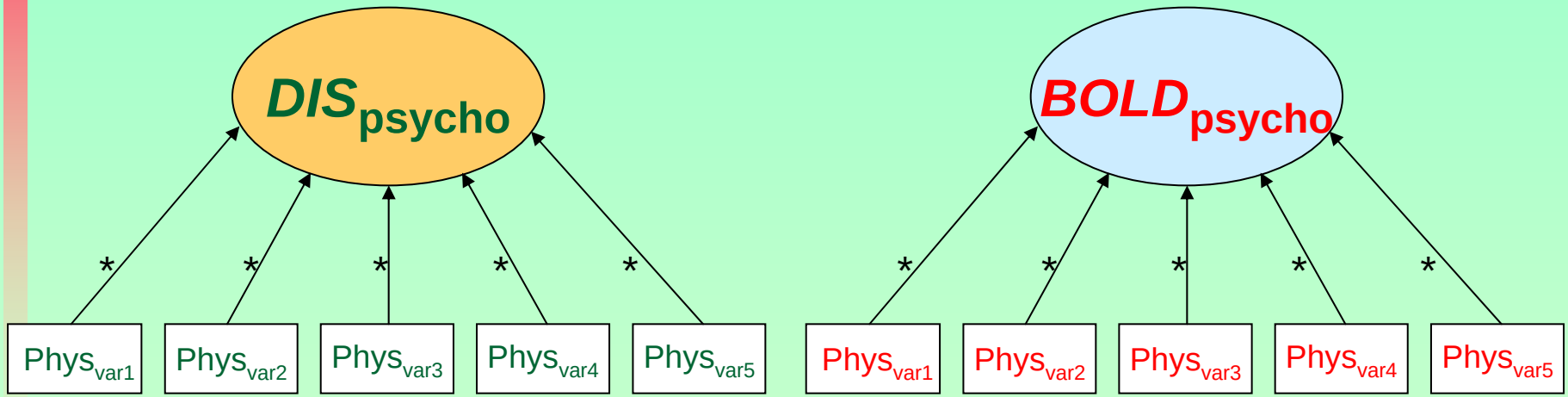


Factor Loadings	
Response ERN	.50
Flanker P3	.55
Feedback P3	.48

Criterion Variable	*N*	ERP Factor
Psychometric		
ESI	88	−.43***
ADS	87	−.40***
SDAST	86	−.11
BHR		
Total	87	−.38***
Adult	87	−.33**
Adolescent	87	−.36**
Physiologic		
Oddball–target P3	88	.68***
Oddball–novel P3	88	.69***

Indexing Triarchic Constructs Physiologically: Research Strategy

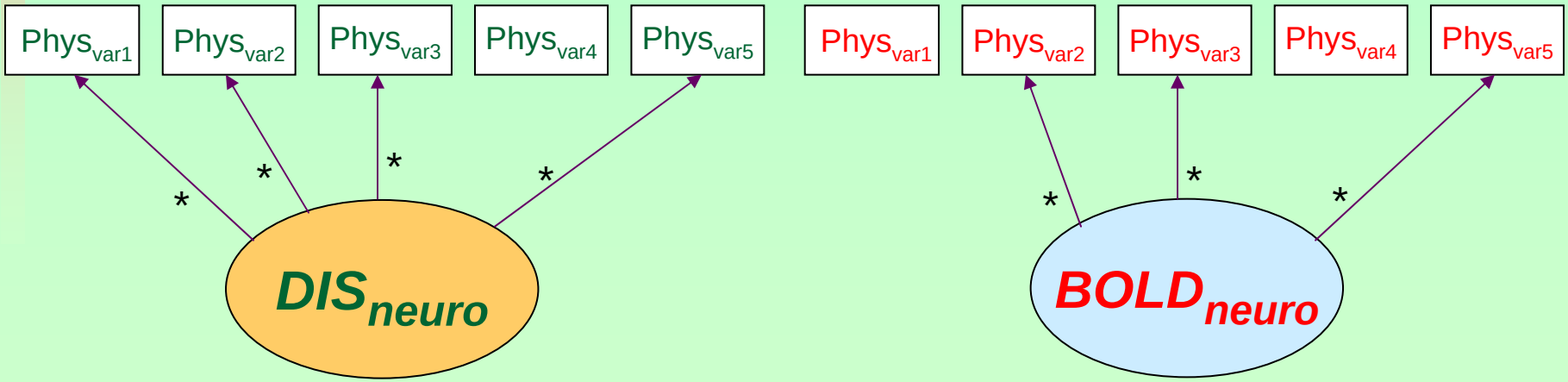
1) Identify replicable physiological indicators of psychometric *Disinh* & *Boldness measures:*



Will require systematic efforts by multiple investigators

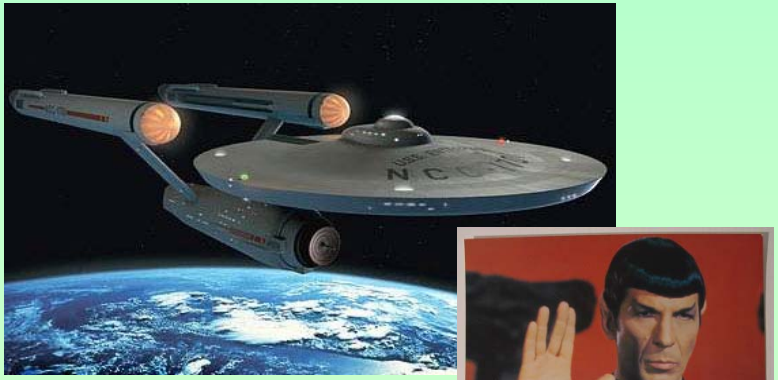
Indexing Triarchic Constructs Physiologically: Research Strategy

2) Use physiological indicators that covary with one another to establish *neurometric Disinh* and *Boldness measures*:



Meanness

…the final frontier



Neurobiological Basis

Callous Aggression (Meanness):

→*evidence for role of low fear (weak defensive reactivity) in meanness (Frick, Blair)*

→*however, phenotypic expression of meanness differs markedly from boldness.*

Key Questions:

What environmental factors promote mean vs. bold outcomes in temperamentally fearless individuals?

- *failed attachment*
- *early abuse (e.g., Caspi et al., 2002)*
- *modeling, social reinforcement*

Key Questions:

What factors besides fearlessness contribute specifically to meanness?

- *co-occurring disinhibitory/externalizing tendencies (negative feedback cycle)*
- *genes for low affiliation ('schizo' genes)*

Triarchic Model: Impl's for Treatment

1) Focus preventative programs on highest-risk youth

→ use neurometric measures + psychometric/diagnostic measures to identify youth/families in most need of services

2) Prevent bold & disinhibited dispositions from progressing toward meanness

3) Specific genes for disaffiliation?

→ e.g., Viding et al. (2005): CD+CU is highly heritable

→ may pose special challenges to prevention

Triarchic Model: Impl's for Treatment

1) What to change and what to re-direct?

→ modifiable aspects of functioning vs. core traits (cf. J. Livesley)

2) Goals vs. weaknesses as focus of treatment (cf. Nick Wilson, Mary McMurran)

→ goal-oriented approach crucial for high-bold individuals

→ balanced focus on goals & weaknesses for high-disinhibited

3) Obstacles to treatment effectiveness (cf. Steve Wong, David Thornton)

→ high meanness/callousness poses a special challenge

4) Neurobiologically-informed treatments – e.g.:

→ disinhibition: external feedback-based learning

→ boldness: automated training to incentivize prosocial goals



The End