

Familiarity of BPD's Component Phenotypes

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“Core” BPD Phenotypes

- Affective Instability
- Impulsivity
- Interpersonal Instability



Prototypes of the Phenotypes for BPD

- Emotional (“hyperbolic” temperament)
 - Fearful/angry, chronically depressed, dysphoric
 - Readiness to shift from anxiety to depression
- Behavioral
 - Acts without concern for consequences (often self-injurious)
 - Externalizes
- Interpersonal (“hypersensitivity”)
 - Intolerant of aloneness
 - Insecure attachments characterized by longings for closeness and fears of rejection or abandonment



Perspectives for Academic Psychology

- Temperaments, largely heritable, are encoded in personality traits (Costa & Widiger, Clark & Watson, Shea & Trull)
- Personality traits are closer and simpler links to genetic substrates than our disorders (Arbella et al. 2003)



The Affective Phenotype I

- Factor analytic support (Hurt, Clarkin, Sanislow)
- Linked to theories of emotional dysregulation (e.g. Linehan, Livesley)
- Explains co-occurrence with affective disorders



The Affective Phenotype II

- Affective Instability:
 - Due to a marked reactivity of mood (e.g., intense subjective distress – anxiety or depression – that usually lasts a few hours)
- Anger:
 - Intense, often inappropriate, and may be unexpressed or poorly controlled
- Emptiness:
 - The inner experience associated with feeling the lack of the presence of a caring other

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- Familial:
 - (Silverman et al. 1991, Zanarini et al. 2004)
 - Heritability
 - 0.45 (Jang et al. 1996)



The Impulsive Phenotype I

- Factor analytic support
- Linked to theories of behavioral dyscontrol (e.g., Links)
- Explains co-occurrence with ASPD and Alcohol/Substance Abuse



The Impulsive Phenotype II

- Impulsivity:
 - In at least two areas that are potentially self-damaging
- Suicidal or Self-Mutilative Behaviors, Gestures, or Threats
 - Recurrent

- Familial
 - (Silverman et al. 1991, Zanarini et al. 2004)
- Heritability
 - 0.28-0.56 (Gottesman et al. 1983; Reiss et al. 2000; Jang et al. 1998)



The Interpersonal Phenotype I

- Factor analytic support
- Linked to theories of failed attachment interpersonal hypersensitivity (e.g. Gunderson, Fonagy, Masterson, Benjamin)
- Explains co-occurrence with HPD, NPD, DPD, and PTSD



The Interpersonal Phenotype II

- Intense Unstable Relationships:
 - Characterized by alternating between idealization and devaluation
- Abandonment Fears:
 - Real or imagined that cause frantic efforts to avoid being alone

- Familial
 - (Zanarini et al. 2004)
- Heritability
 - 0.48 (Jang et al. 1996)



Main Analysis

- To assess the association that is induced by familial factors for a given trait assess 2 associations
- Statistical model assesses level of trait in relative and level of trait in corresponding proband
- Presence of association implies presence of causal familial factors



Measures of Effect

1. Difference in level of trait in relative associated with a 1-unit increase in level of trait in proband
2. Difference in level of trait in a relative of a proband with BPD vs. a relative of a proband without BPD

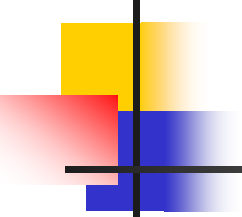


DSM-IV Phenotypes

- Affect
 - Anger
 - Emptiness
 - Reactivity
 - Score: 0-6
- Impulsivity
 - Self-harm/suicidality
 - Two other forms of impulsivity
 - Score: 0-4
- Interpersonal
 - Stormy relationships
 - Frantic efforts to avoid abandonment
 - Score: 0-4

Familial Aggregation of Core Phenotypes of BPD by DSM-IV Criteria

(based on analysis of 590 relatives of BPD (N = 285)
and non-BPD (N = 305) probands)



Measure	Estimate* (95% CI)	p-value
Affective	0.20 (.05, 0.36)	0.011
Impulsive	0.05 (-0.04, 0.13)	0.28
Interpersonal relationships	0.12 (-0.03, 0.26)	0.12

*Estimated mean increase in measure in relative for each increase of 1 in measure in proband, adjusted for relative's age, sex, race/ethnicity and type (parent or sibling)



DIB-R Phenotypes I

- Affect
 - Depression
 - Helplessness/hopelessness/worthlessness
 - Anger
 - Anxiety
 - Loneliness/emptiness
 - Score: 0-10
- Impulsivity
 - Substance abuse
 - Promiscuity
 - Self-mutilation
 - Suicide threats/attempts
 - Other forms of impulsivity
 - Score: 0-10

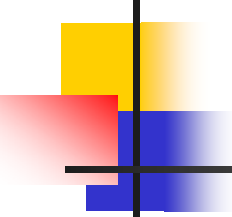


DIB-R Phenotypes II

- Interpersonal
 - Intolerance of aloneness
 - Abandonment/engulfment/annihilation concerns
 - Counterdependency
 - Stormy relationships
 - Undue dependency/masochism
 - Manipulation/devaluation/sadism
 - Demandingness/entitlement
 - Serious treatment regression
 - Countertransference problems/"special" treatment relationships
 - Score: 0-18

Familial Aggregation of Core Phenotypes of BPD by DIB-R Criteria

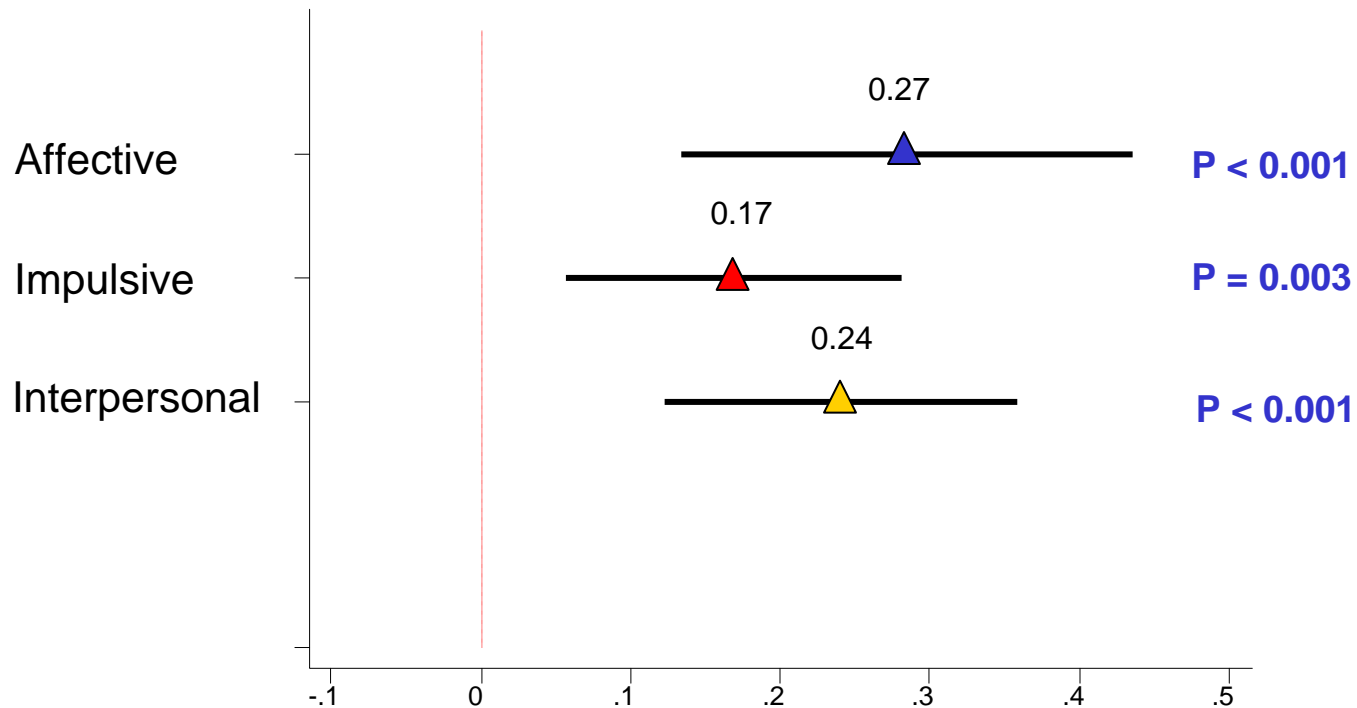
(based on analysis of 590 relatives of BPD (N = 285)
and non-BPD (N = 305) probands)



Measure	Estimate* (95% CI)	p-value
Affective	0.27 (0.13, 0.43)	< 0.001
Impulse action	0.17 (0.06, 0.29)	0.003
Interpersonal relationships	0.24 (0.13, 0.36)	< 0.001

*Estimated mean increase in measure in relative for each increase of 1 in measure in proband, adjusted for relative's age, sex, race/ethnicity and type (parent or sibling)

Difference in Phenotypic Trait Score in Relative for Each 1-Unit Increase in Trait Score in Proband



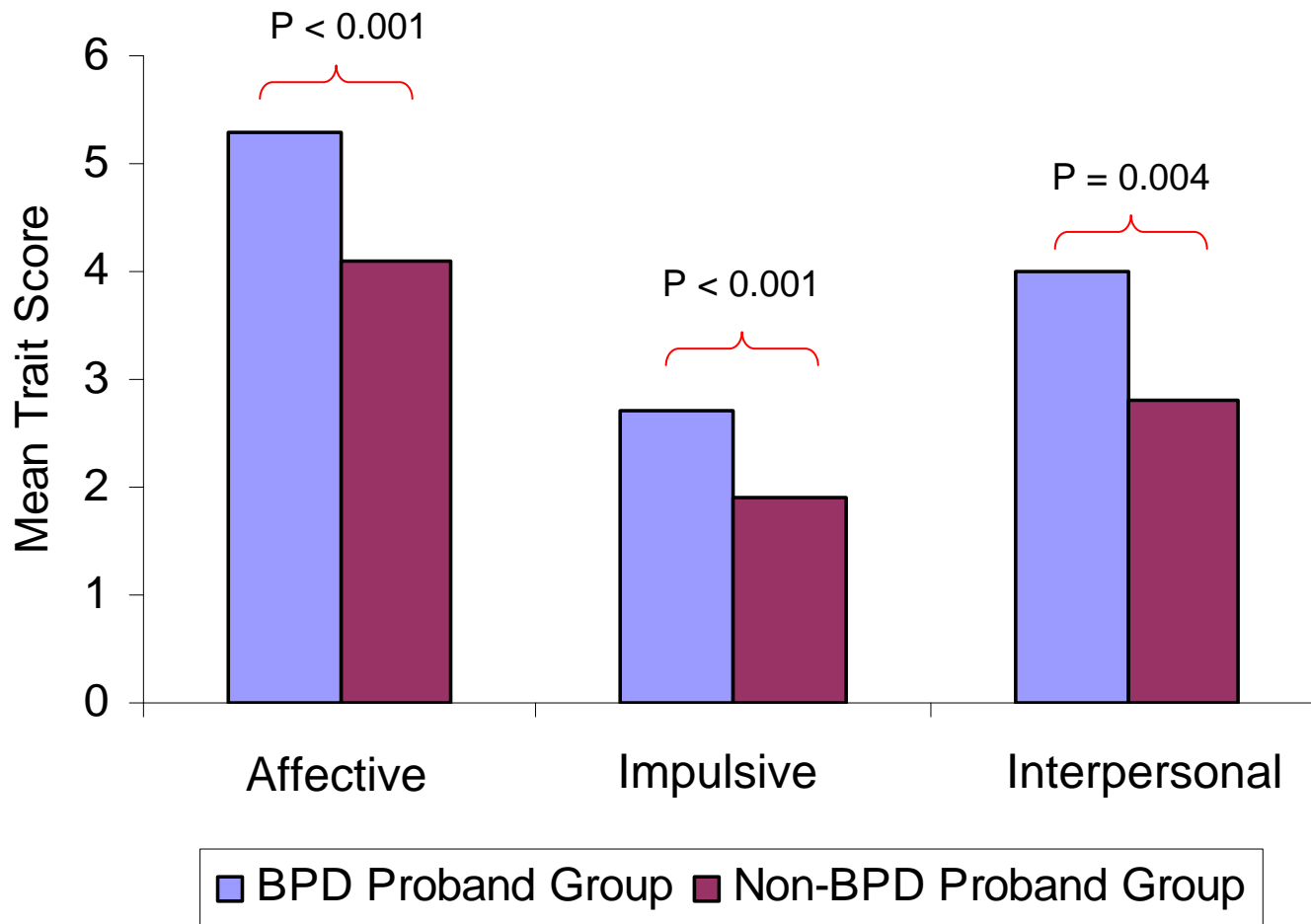
Mean (95% CI) Difference in Trait Score



Secondary Analysis

- To assess whether BPD traits are more common in the relatives of probands with BPD compared with relatives of probands without BPD

DIB-R Phenotypic Trait Scores in Relatives of BPD Probands vs. Relatives of Non-BPD Probands





Conclusion I

- First rigorous demonstration of these phenotypes' familiarity
 - supports theories that they “drive BPD’s engine”
 - can help explain patterns of co-occurrence
 - impels search for endophenotypes



Conclusion II

- DIB-R identifies the phenotypes better than the DSM IV criteria
 - ? Due to scales with more points
 - ? Due to dimensional vs. categorical scoring
 - ? Due to better definition of the phenotypes



Limitations

- sample (incomplete)
- measures (validity, alternatives)
- phenotypes (others)



“Candidate” BPD Phenotypes

- Aggressivity
- Anxiousness
- Cognitive Dysregulation