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The Role of Maternal Pre-Mentalizing Modes of Functioning and Low-range Reflective Functioning in the Development of Child Traumatic Stress within a Context of Violence Exposure

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Parental Reflective Functioning (PRF)

(Slade, 2005)

- Fonagy, Target, Steele, & Steele (1998) created a manual based on their research by which one could assess adult reflective functioning (RF) by coding narrative responses on the Adult Attachment Interview (AAI).
- RF in this context refers to an individual's capacity to evaluate mental states in her own parents and in herself in an interpersonal context ("holding others and oneself in mind")
- PRF refers rather to an individual parent's capacity to evaluate mental states in her child and in herself in an interpersonal context ("holding one's child and oneself in mind" see Coates SW, 1998)

Developmental Roles of RF

- Promoting security and organization of attachment during the first year of life (Fonagy, Steele, Moran, Steele, & Higgitt, IMHJ 1991)
- Important to mutual regulation of emotion and thus to the development of self-regulation by age 4-5 years (Fonagy, Gergely, Jurist, & Target, 2002)
- Important in the development of a sense of self as having independent beliefs, feelings, desires, intentions and course of development
- For parents of infants, RF can specifically help tolerate infant distress thus supporting perception, interpretation, and sensitive responsiveness (Rutherford et al., 2013)

Three Basic Features of RF Generally

- **Curiosity**: Curiosity about mental states underlying behavior and explicit efforts to tease them out

- **Opacity**: Understanding that one can never be certain of the mental states of another

- **Development and Awareness of Diversity of Perspectives**: Awareness of the other's concurrent developmental capacities and challenges or "not-yet possible aspects"

Important associations with PRF

- PRF associated with adult (AAI) and infant-parent (SSP) attachment security (Slade et al., 2005)
- PRF *was* associated with quality of:
  - maternal interactive behavior (i.e. sensitivity) (Grienenberger et al., 2005)
  - maternal mental representations of the child and relationship with the child (Schechter et al., 2005)
- PRF *was not* significantly associated with maternal psychopathology (PTSD or depression) in a clinical sample (no control-group in Schechter et al., 2005)
- *Goal of present study to examine PRF in community sample with violence-exposed mothers yet also with a wider range of SES and PTSD severity than in the 2005 study and including clearly non-PTSD controls*

How does one measure PRF?

- Coding of transcribed narrative from an AAI-like measure administered to the parent and that is focused on mental representations of the child and the parent-child relationship (Slade, 2005)
- Structured measure (i.e. self-report such as the PRFQ) that presents non-personalized items with which the parent can agree or can verify or not (Luyten et al., 2009)
- By extrapolation from other related measures: Parental Insightfulness Assessment (Oppenheim, Korie, & Sagi, 2001); Mind-Mindedness Assessment (Meins, 1999)

How RF is scored from maternal narratives on « process items » (vs « content items »)

- Parent Development Interview (Slade, A., Aber, J.L., Bresgi, I., Berger, B., & Kaplan, 2004; Slade et al., 2005)
- Working Model of the Child Interview with RF probes from PDI added (Zeanah, C.H., Benoit, D, & Barton, M., 1986, rev 1993 ; Schechter et al., 2005)
- Each passage in the interview is scored on an 11-point scale ranging from negative RF (-1) to Full or Exceptional RF (9)
- In arriving at an overall interview score, the rater takes into account the individual scoring of each passage as well as the quality of the entire interview.

Parental Reflective Functioning Questionnaire (PRFQ)

(Luyten, P., Mayes, L.C., Nijssens, L., & Fonagy, P., 2009

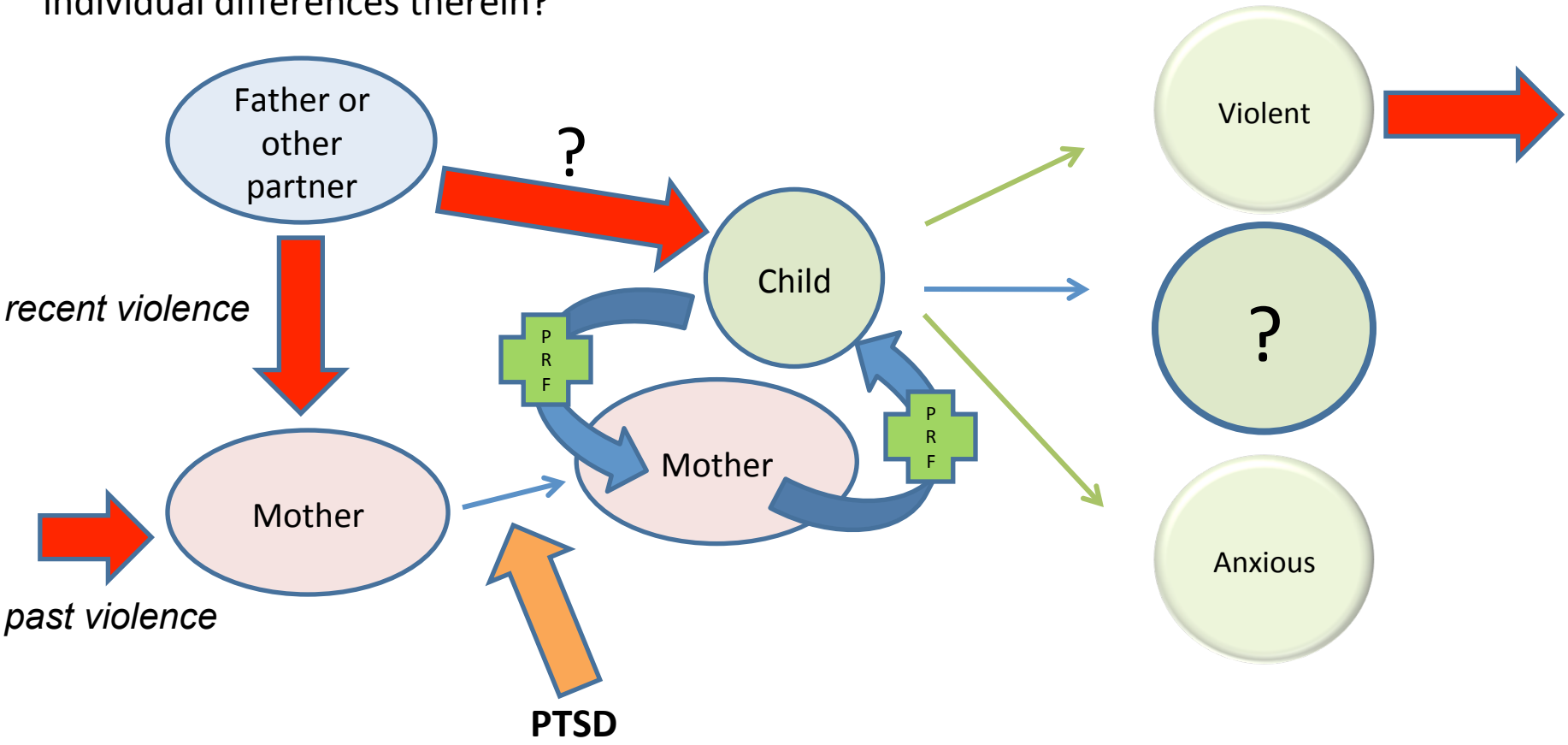
French translation: Debbané, M. & Badoud, D., 2014)

- **Pre-mentalizing modes of functioning** (PMMF), involve an inability to hold the child's mental states in mind and/or to have malevolent attributions about the child's behavior
- **Certainty about the child's mental states** (CMS), refers to an acknowledgement that a parent's thoughts about the child's mental states are accurate
- **Interest and curiosity in child's mental states** (IC) 2014), which involves an interest in parents thinking about their child's mental states

Understanding mechanisms that underlie intergenerational transmission

1. How does interpersonal violence affect the caregiving environment?

2. How does the caregiving environment affect child developmental psychopathology and individual differences therein?



Research objective

- Whether pre-mentalizing modes of functioning (PMMF) and/or low parental reflective functioning (PRF) among mothers with histories of interpersonal violence exposure and related post-traumatic stress disorder (PTSD) would:
  - be associated with a specific pattern of maternal neural activity on fMRI and
  - predict greater post-traumatic stress symptoms among their children one-year after initial assessment.

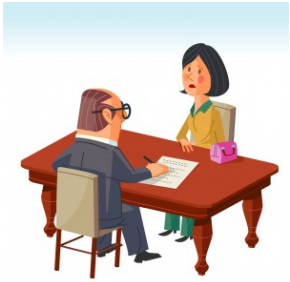
Geneva Early Childhood Stress Project (GECS-Pro)

Phase 1: Children aged 12-42 months

Phase 2

Screening

Maternal Assessment



Time I

Times 2 & 3

Maternal report:
Child Behavior
1 year later…

1-2 wks

Parent-Child Interaction

2-4 wks

MRI

Clinician-assisted Video-feedback Exposure Session (CAVES)

Observed child behavior from ages 5-9 years

Sampling

- Flyers in community, hospitals and domestic violence agencies for over-sampling of violence-exposed mothers
- Adult French-speaking mothers, who were not actively substance abusing, psychotic, pregnant, and who could participate in study tasks
- Biological children ages 12-42 months, living with mother, who were not developmentally disabled, and who could participate in study tasks

Sample Characteristics (n=40)

	Mean (SD)	Range
Maternal age (in years)	34.30 (5.77)	22-47
Child age (in months)	27.57 (8.22)	12-42
Child gender (%)	55% boys, 45% girls	--
SES	5.26 (2.23)	2-10
Maternal PTSD CAPS score	56.38 (34.73)	16-129
PRFQ	--	--
Prementalizing Modes	1.91 (0.73)	1.0-3.67
Certainty	3.80 (1.26)	1.33-6.00
Interest and Curiosity	6.03 (0.73)	4.00-7.00
PRF (n=33)	4.15 (0.91)	2.00-6.00
Child Externalizing Bxs	0.60 (0.36)	0.04-1.75
Child Internalizing Sxs	0.52 (0.19)	0.04-1.00
Child Dysregulation	0.59 (0.27)	0.12-1.24

PRELIMINARY RESULTS

Group Analyses of PRF by Maternal IPV-PTSD Diagnosis

- Mothers with IPV-PTSD Diagnosis or Clinically Significant IPV-PTSD Symptoms but subthreshold for diagnosis: **n=21**
- Non-IPV-PTSD (accident, medical-surg or OB, natural disaster) pre-excluded from base
- Mothers with no PTSD: **n=19**
- Significant group difference for SES: t (df 2, 58) -3.76 , p <.001
- No significant group differences for child age, gender
- For continuous analyses Spearman (non-parametric) correlations done

	PTSD Mean SD	Control M SD	T-test	P-value
PRFQ-PMMF	2.22 (7.26)	1.57 (5.21)	-3.22 (df 2,38)	.003
Certain	3.75 (1.25)	3.84 (1.30)	0.23	NS
Curious	6.21 (0.65)	5.82 (0.77)	-1.78	.080
PRF	3.89 (0.90)	4.47 (0.83)	1.90 (df 2,33)	.067

Maternal variables associated with RF

Maternal variables	PMMF (n=40)	PRF (n=33)
PMMF	--	NS
PRF	NS	--
Maternal PTSD*	.40**	-.36*
Age	NS	NS
SES	NS	-.36*
Suicide attempts	.36*	NS
Child protective services	NS	-.45**
Violent partner severity	.31*	-.49**
Violent self severity*	NS	-.37*
Depression*	.49***	-.35 *
Parenting Stress	.53***	NS
Maternal sensitivity*	NS	.36*

*When control for SES, PTSD, depression, violent self severity, & maternal sensitivity no longer are significantly associated with PRF but remain significantly associated with PMMF

Child variables associated with RF

	PMMF+ (n=40)	PRF (n=33)
PMMF	--	NS
PRF	NS	--
Child PTSD 1 yr later	.28+	-.44 *
Age	NS	NS
Exposure to violence	.26+	NS
Secure Base Disortion DAI baseline*	.41**	-.29+
Separation anxiety ITSEA baseline *	NS	-.43*
Internalizing Sxs ITSEA baseline*	NS	-.53**
Externalizing Bxs ITSEA baseline*	.28+	-.36*
Dysregulation ITSEA baseline	.29+	-.48**

*When control for SES, SBD, & Internalizing , Externalizing, Dysregulated Symptoms no longer are significantly associated with PRF; Association between PMMF & SBD reduced to Trend; PMMF & PTSD NS

+other 2 subscales of PRFQ not correlated with PRF either

Maternal RF and PTSD: Impact on the child

- Maternal PTSD and PRF together explain 30% and 26% of the variance of child internalizing symptoms (likely due to separation anxiety which accounts for 32% of the variance) and dysregulation on the ITSEA, respectively:

  Internalizing symptoms:

  F (2,31)=6.12** β-PTSD=.29+, β-PRF=-.37*

  Separation anxiety:

  F (2,31)=6.90** β-PTSD=.29+, β-PRF=-.40*

  Dysregulation:

  F (2,31)=5.00* β-PTSD=.29+, β-PRF=-.32+

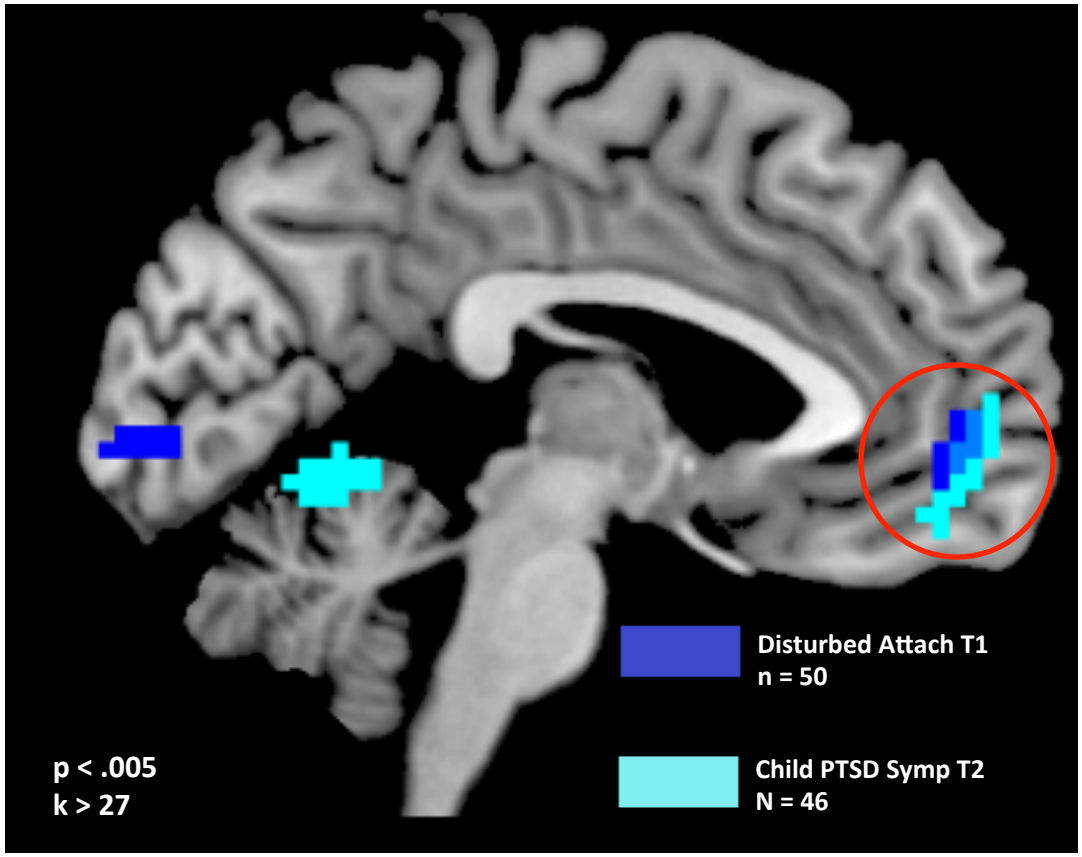
  Model not significant for *Externalizing behaviors*

Maternal neural activity of ventral-medial prefrontal cortex and RF (n=33)

	PMMF	PRF
vmPFC	-.30+	.41*

Separation

Play



Conclusions

- PRFQ was particularly useful in this study for its PMMF subscale that seems to pick up negative and distorted parental perception (see Schechter et al., 2015, Negative maternal attributions);
- The PRFQ measures something very different from the PRF narrative-coded measure (what mom says vs how she says it?)
- Nevertheless, both measures are associated with maternal risk indicators and with child psychopathology
- Maternal IPV-PTSD together with PRF accounts for sizeable percentage of variance of child internalizing symptoms and dysregulation. Relationship to separation anxiety suggests effect on attachment security & organization
- PRF seems to be associated with dysfunction in the vmPFC upon viewing child-parent video stimuli, a potential biomarker for treatment studies

Use of Clinician Assisted Videofeedback Exposure Sessions (CAVES) to stimulate PRE

Wider applications to prevention: Pregnancy Interview (Slade & al., 2001)

- Semi-structured clinical interview developed to assess the quality of the mother's prenatal representation of her fetus as well as what she imagines her baby will be like in the future
- Explores the mother's emotional experience witth pregnancy and her expectations and fantasies regarding her future relationship with her child
- Aims to capture the mother's prenatal representations of herself as a caregiver, focusing on her capacity to identify with, respond to and anticipate the need of her fetus and her newborn in the near future
- Administered at 3rd trimester of pregnancy
- Used in our prenatal study– papers in preparation (Sancho-Rossignol, Cordero, Rusconi-Serpa, Hüppi, Epiney, Schechter, Ansermet)

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