



Inter-rater reliability, structure, and convergent validity of the OHAIRE-v2

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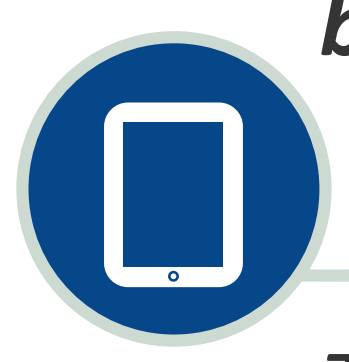
BACKGROUND



Methods in HAI

Methods used in Human-Animal Interaction (HAI) research have been criticized for their lack of objectivity and standardization.

- Bias is enhanced by the reliance on self-report and caregiver questionnaires, and researcher expectancies.
- Unstandardized techniques contribute to scattered results.
- **Standardized, valid and reliable methods are needed to reduce bias and allow for reproducibility and comparisons across studies.**



The OHAIRE-v2

The **Observation of Human-Animal Interaction for Research – version 2**

- Timed interval behavior coding system
- Code human behavior with or without the animal present
- Online coding through Qualtrics: low data entry error rate
- Blinding of the raters to diagnosis, study design, and study hypotheses is possible
- Captures:

Emotional display	Smile, Laugh, Negative
Social communication	Talk, Look, Touch, Gesture, Affection, Prosocial
Interactions with animals & control objects	
Problem behaviors	Aggression, Overactivity, Isolation

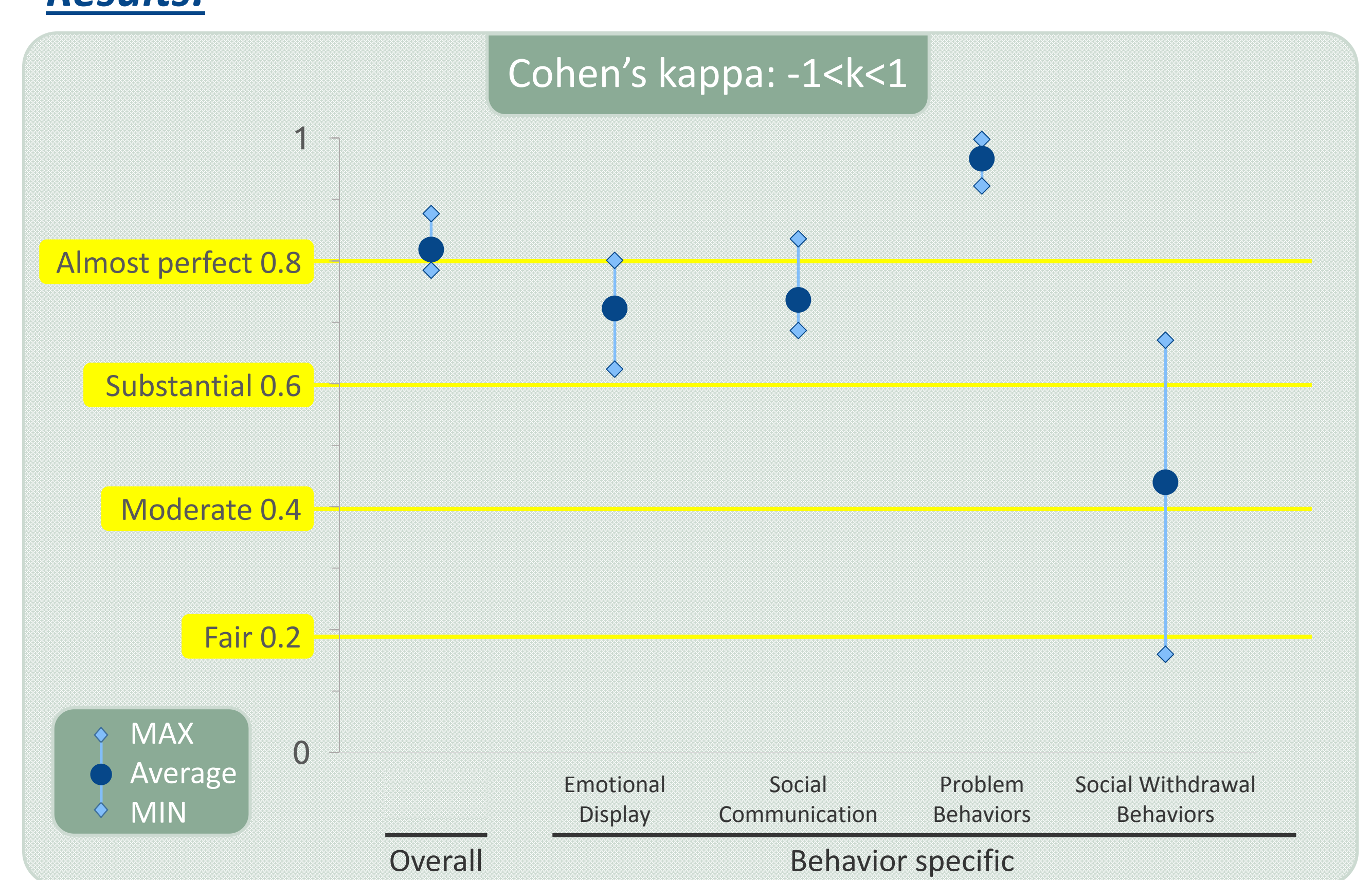
→ **Evaluating the OHAIRE’s psychometric properties is an essential step to improve it and prepare it for a largescale implementation.**

INTER-RATER RELIABILITY

Question: Does the OHAIRE consistently produce the same results when used by different raters?

Methods: Seven raters arranged in five pairs coded videos from three different studies for a total of 324 minutes of video coded for reliability. Data were analyzed using Cohen’s kappa, a conservative measure of reliability that corrects for chance agreement.

Results:



Discussion:

- The OHAIRE-v2 demonstrates excellent overall inter-rater reliability, despite a lower reliability for social withdrawal behaviors.
- Careful interpretation of social withdrawal behaviors with results obtained using the OHAIRE-v2.
- Re-definition of these behaviors and increased training for the next version of the OHAIRE has been implemented and is in the testing phase.

ACKNOWLEDGEMENTS



CONVERGENT VALIDITY

Question: Is the OHAIRE related to validated, standardized questionnaire measures that theoretically assess the same behaviors?

Methods:

Sample. 99 children, including 66 typically developing children and 33 children with Autism Spectrum Disorder (ASD).

Measures. OHAIRE behavioral measures during play with toys or guinea pigs
SSRS: Social Skills Rating System

SCQ: Social Communication Questionnaire (ASD screening)

Analyses. Pearson’s r correlations between OHAIRE scores and SSRS and SCQ

Results:

OHAIRE code	SSRS				Academic Competence	SCQ
	Social Skills		Problem Behaviors			
	Parent	Teacher	Parent	Teacher		
Emotional Display						
Smile	.50***	.42***	-.39***	-.40***	.28**	-.56***
Cry & Frown	-.33**	-.39***	.15	.39***	-.20*	.34**
Social Communication						
Verbal	.23*	.07	-.09	-.01	.00	-.29**
Visual	-.02	-.16	.26*	.15	-.05	.05
Physical	.52***	.42***	-.43***	-.34**	.24*	-.59***
Prosocial	.02	-.03	-.02	.10	-.07	-.09
Problem behaviors	.16	.05	-.13	-.06	.20*	-.02

Discussion:

- Behaviors coded with the OHAIRE-v2 correlate with the SCQ and subscales of the SSRS.
- It demonstrates convergent validity with validated, standardized measures.

STRUCTURE

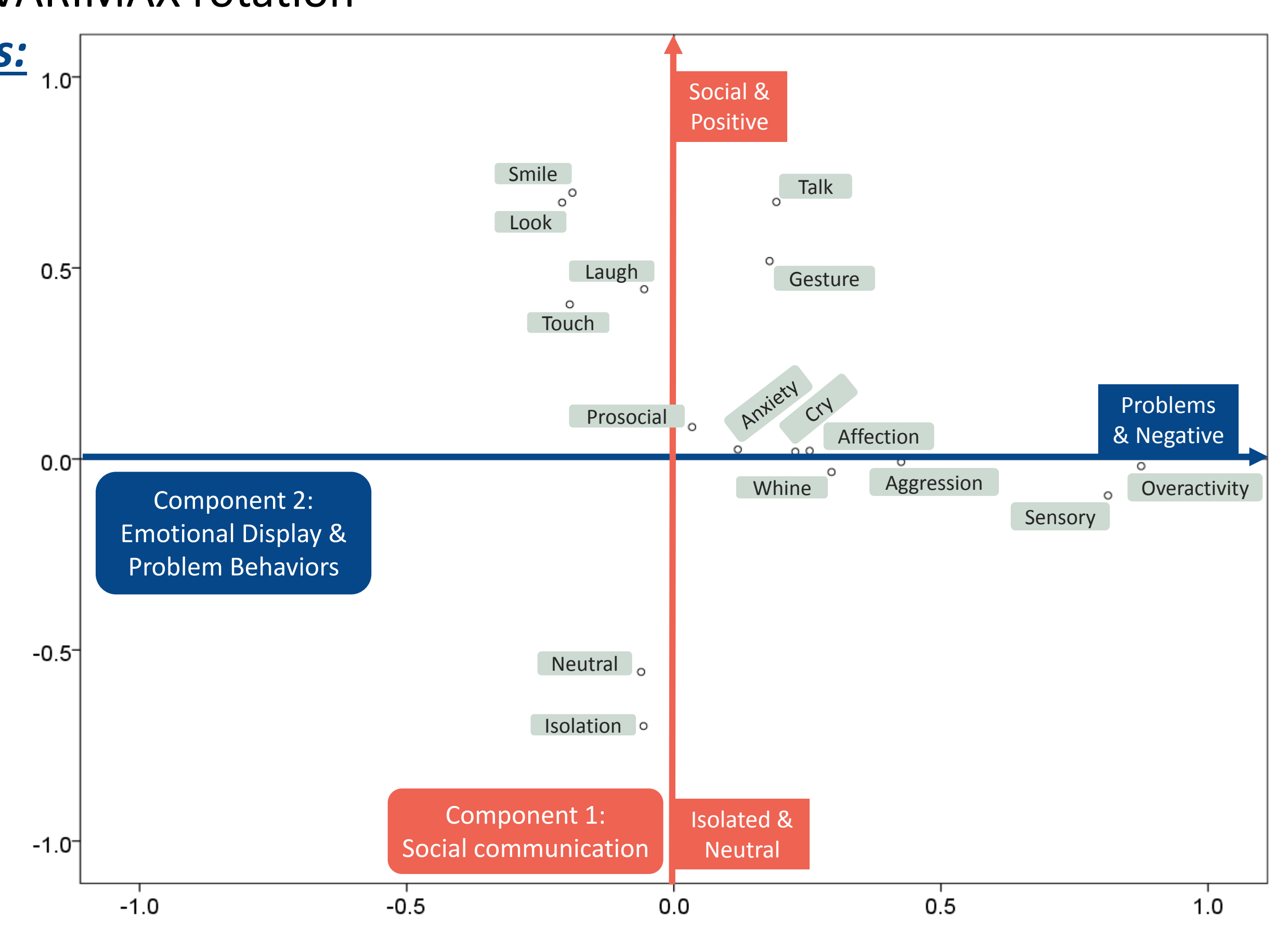
Question: Is the OHAIRE well-structured, with clear components?

Methods:

Sample. 66 typically developing children during play with toys or guinea pigs
19 children with ASD before and after therapeutic horseback riding

Analyses. Factor Analysis, with a Principal Component Analysis extraction, and a VARIMAX rotation

Results:



Discussion:

- The OHAIRE-v2 aligns on two principal factors, representing two of its principal coding categories, social communication and problem behaviors.
- Emotional Display is highly correlated with these categories.

FUTURE DIRECTIONS – THE OHAIRE-v3

The OHAIRE manual has been revised based on these analyses and a generalization effort. Major updates include:

- **Generalizability:** less focus on Autism Spectrum Disorder
- **Precision:** refined behavior definitions
- **Largescale implementation:** standardized materials include an updated manual, reliability and scoring procedures, enhanced training materials, and guidelines for researchers.

The OHAIRE-v3 is currently being tested with an excellent inter-rater reliability (Cohen’s kappa = .92)