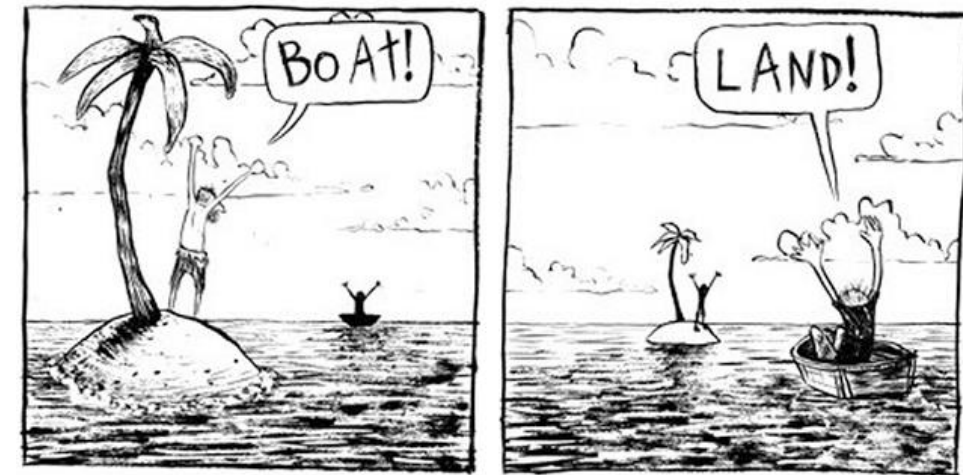
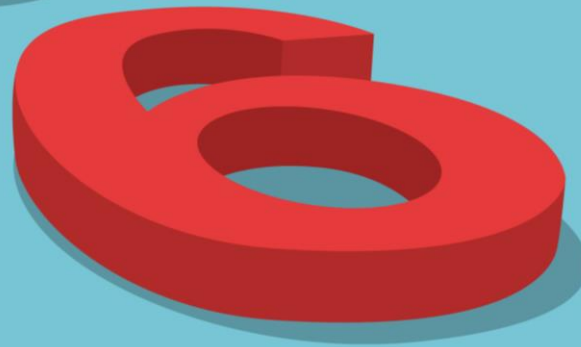




*UNCOVERING TRANSDIAGNOSTIC SOCIO-COGNITIVE PROFILES
BY MEASURING THE BUILDING BLOCKS OF MENTALIZING PERFORMANCE
ACROSS MENTAL DISORDERS*

TO UNDERSTAND OTHERS,
TO BE UNDERSTOOD BY
THEM,
TO PREDICT THEM,
TO HELP OR DECEIVE THEM



Whether you will succeed at taking his visual perspective depends on

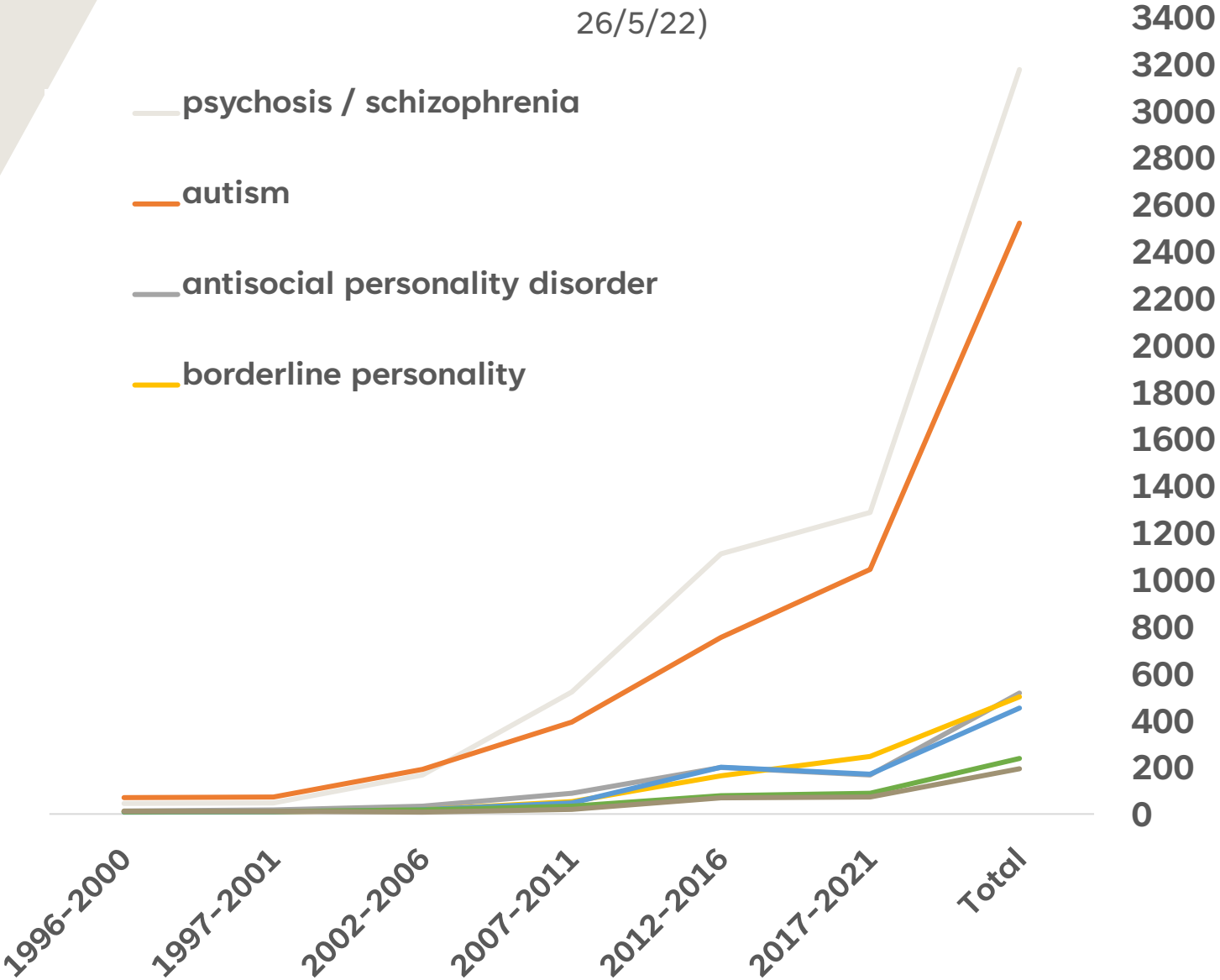
...

- multiple mental processes → cognitive psychology/neuroscience
- individual + situational factors → social & differential psychology



TRANSDIAGNOSTIC SOCIAL COGNITION

Number of articles with « *social cognition /
mentalizing / Theory of Mind / empathy* » (Pubmed
26/5/22)



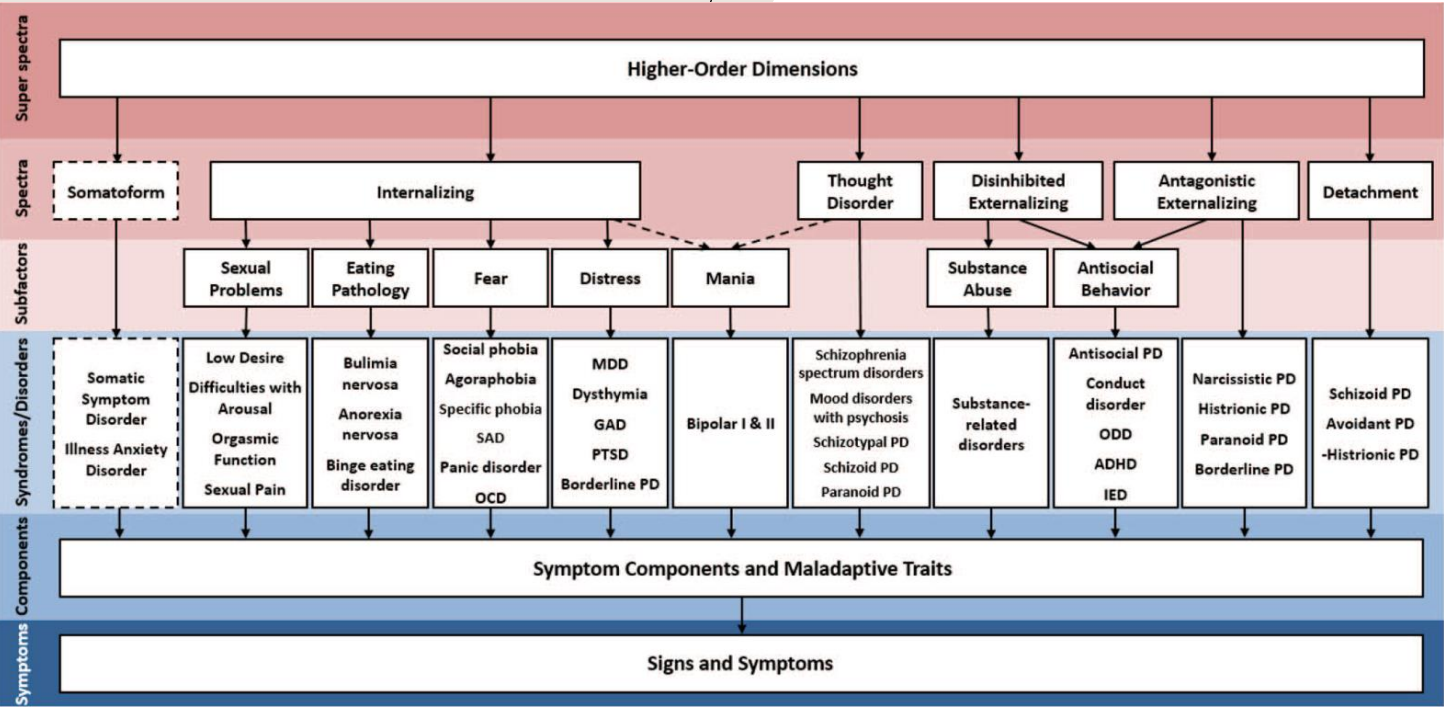
TRANSDIAGNOSTIC SOCIAL COGNITION

We can help transdiagnostic research by finding transdiagnostic sociocognitive dimensions

The Hierarchical Taxonomy of Psychopathology (HiTOP): A Dimensional Alternative to Traditional Nosologies

Roman Kotov
Stony Brook University

Robert F. Krueger
University of Minnesota



Clashing Diagnostic Approaches: *DSM-ICD* versus *RDoC*

Scott O. Lilienfeld, Ph.D. and Michael T. Treadway, Ph.D.
Emory University

DOMAINS/CONSTRUCTS	UNITS OF ANALYSIS							
	Genes	Molecules	Cells	Circuits	Physiology	Behavior	Self-Reports	Paradigms
Negative Valence Systems Acute threat ("fear") Potential threat ("anxiety") Sustained threat Loss Frustrative nonreward								
Positive Valence Systems Approach motivation Initial responsiveness to reward Sustained responsiveness to reward Reward learning Habit								
Cognitive Systems Attention Perception Working memory Declarative memory Language behavior Cognitive (effortful) control								
Systems for Social Processes Affiliation/attachment Social communication Perception/understanding of self Perception/understanding of others								
Arousal/Modulatory Systems Arousal Biological rhythms Sleep-wake								

Systems for Social Processes

Affiliation and attachment

Social communication

Perception and understanding of self

Perception and understanding of others

Identifying the building blocks: a psychometric view

Mentalizing /
Theory of Mind /
Perspective
taking

Definition: Ability to infer the (right) mental state of someone

Measure: Accuracy (and response latency)

Critique: Actually captures ability to inhibit self-perspective
(often conflict with personal beliefs, knowledge, desires, visual perspective)

Empathy

Definition: Ability **to feel** and understand someone's affective mental state

Measure: Ratings, physiological responses, ACC-Insula brain response

Critique: Actually capture "sensitivity" to others' emotion
(often participants = neutral observer available to others' emotions)

Two building blocks
of mentalizing
performance

Basic performance at understanding others' mental state depends on

Dimension 1: **self-other distinction** → (fail to) inhibit self-perspective

Dimension 2: **self-other priority** → self-centred vs. attuned to others

Measuring the building blocks

DIMENSION 1: SELF-OTHER DISTINCTION

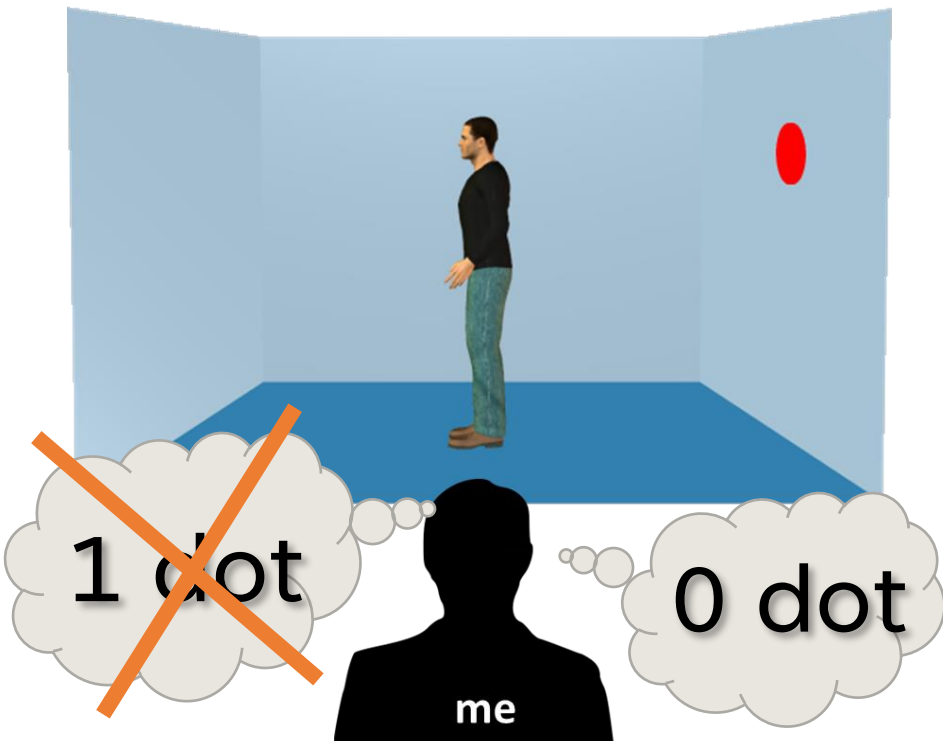
Ability to suppress the irrelevant conflicting perspective

→ monitoring, shifting, inhibition

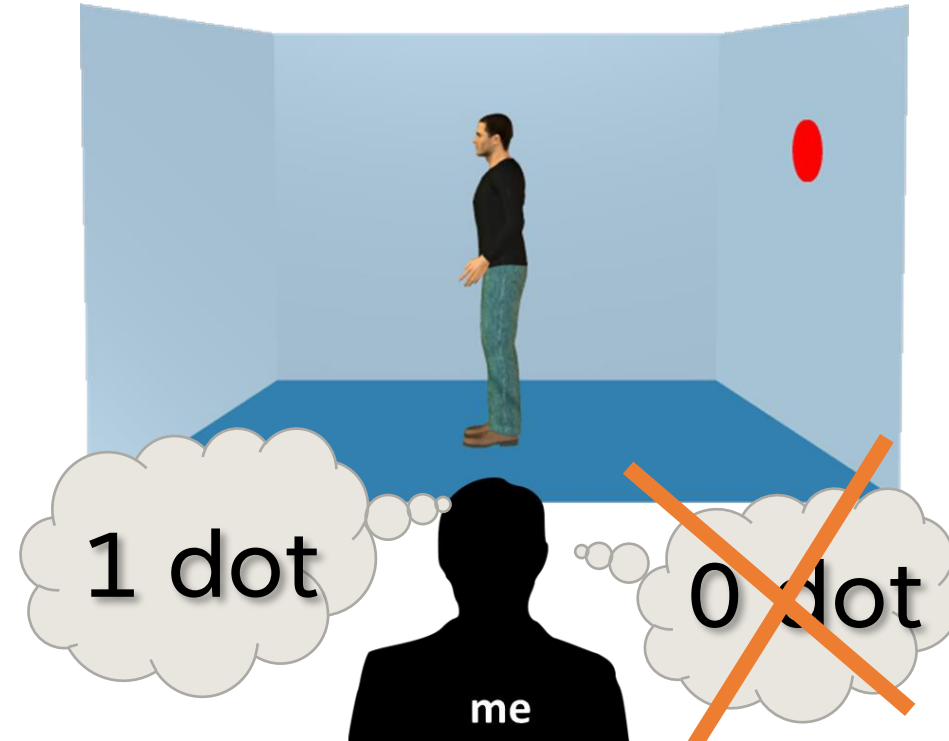
... irrespective of perspective taken (self- or other's)

→ **Conflicted** or **flexible** performance?

“Does HE see 1 red dot?”



“Do YOU see 1 red dot?”



Measuring the building blocks

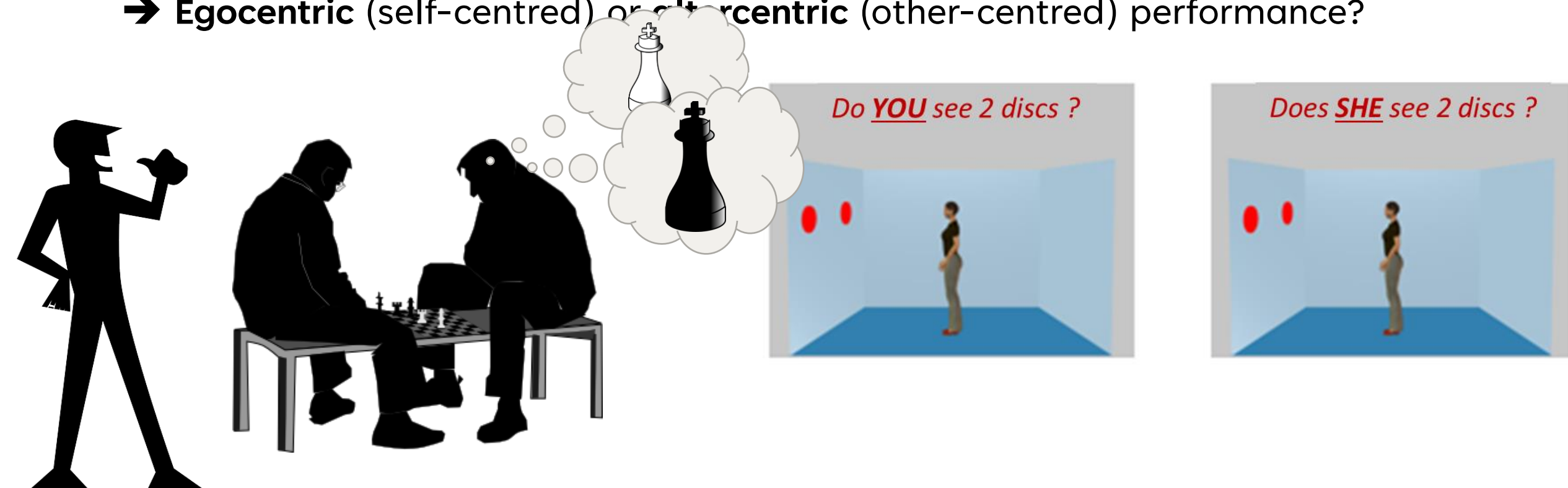
DIMENSION 2: SELF-OTHER PRIORITY

Processing advantage for self-perspective versus other's perspective

→ Attentional priority, social cues processing, access to mental representations

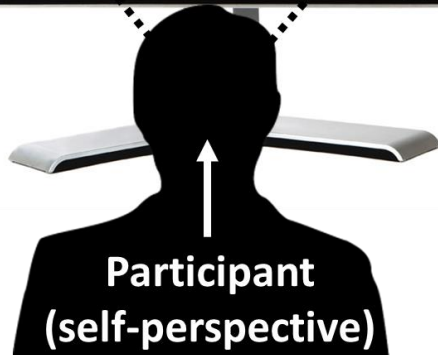
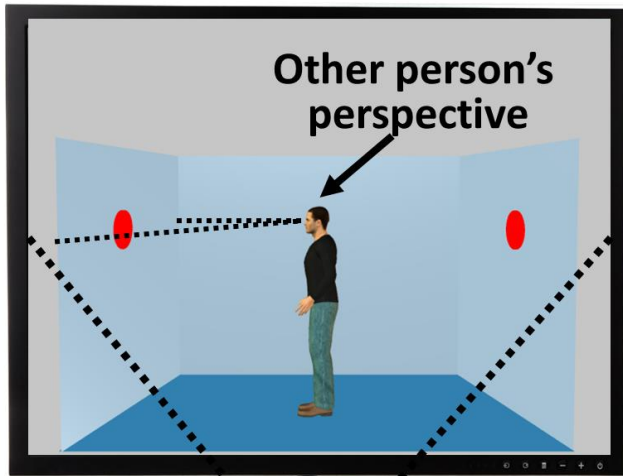
X against assumption of *default* self-perspective

→ **Egocentric** (self-centred) or **allocentric** (other-centred) performance?



Measuring the building blocks

*Related to something social ?
To real-life social cognition ?*



Experimental and correlational findings:

Guilt → + altercentric¹

Shame → + conflicted¹

Anger → trend + egocentric¹

Joy vs. Sadness → + conflicted²

**Sleep deprivation → +
conflicted³**

Forced attention on person → + altercentric⁴

Students' perspective-taking and empathic

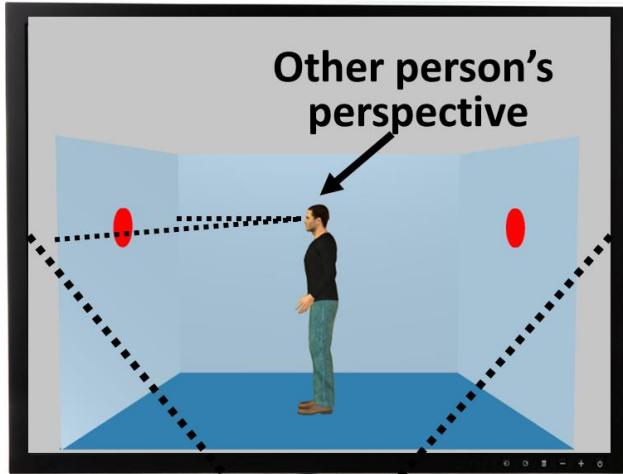
Physicians' perspective-taking with

Law school's narcissism → + altercentric⁹

(1) Bukowski, H., & Samson, D. (2016). Can emotions influence level-1 visual perspective taking? (2) Bukowski, H. (2014). What influences perspective taking? A dynamic and multidimensional approach. (3) Deliens, G., Bukowski, H., Slama, H., Surtees, A., Cleeremans, A., Samson, D., & Peigneux, P. (2018). The impact of sleep deprivation on visual perspective taking. (4) Bukowski, H., Hietanen, J. K., & Samson, D. (2015). From gaze cueing to perspective taking: Revisiting the claim that we automatically compute where or what other people are looking at.. (5) Bukowski, H., & Samson, D. (2017). New Insights into the Inter-Individual Variability in Perspective Taking. (6) Mattan, B. D., Rotshtein, P., & Quinn, K. A. (2016). Empathy and visual perspective-taking performance. (7) Nielsen, M. K., Slade, L., Levy, J. P., & Holmes, A. (2015). Inclined to see it your way: Do altercentric intrusion effects in visual perspective taking reflect an intrinsically social process? (8) Bukowski, H., Ahmad Kamal, N. F., Bennett, D., Rizzo, G., & O'Tuathaigh, C. (2021). Association between dispositional empathy and self-other distinction in Irish and Belgian medical students: A cross-sectional analysis. (9) Bukowski, H., & Samson, D. (2022). Narcissists are not more egocentric: evidence from a performance-based perspective-taking measure.

Measuring the building blocks

*Related to something social ?
To real-life social cognition ?*



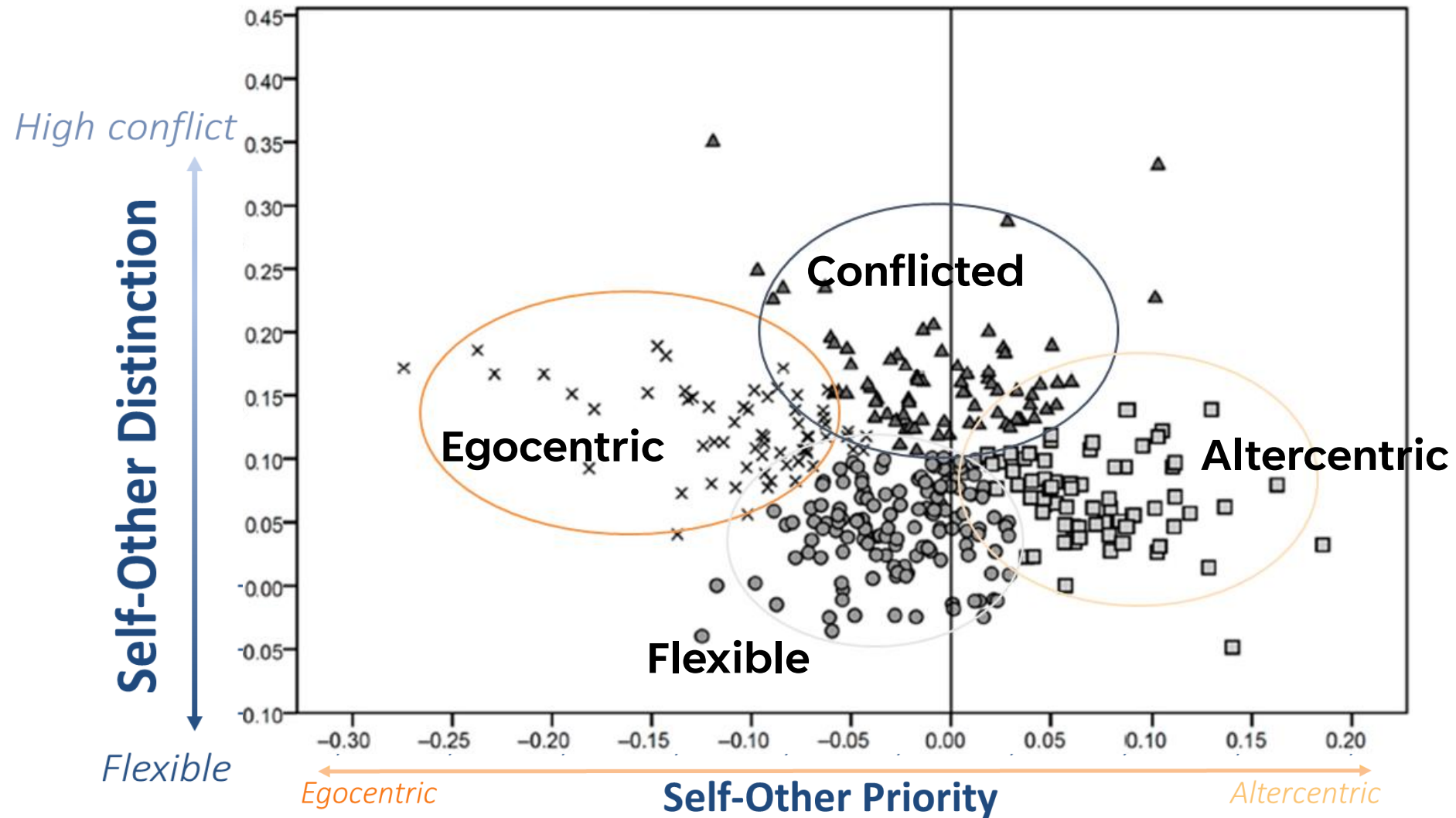
Clinical findings (papers in preparation or prelim data):

- Alcohol abstinence → - conflicted
- Antisocial personality → + conflicted
- Psychopathic personality → + other-
- Schizophrenic population → + egocentric, + conflicted

*Are there profiles of perspective takers?
What about intra-population heterogeneity?*

Participant
(self-perspective)

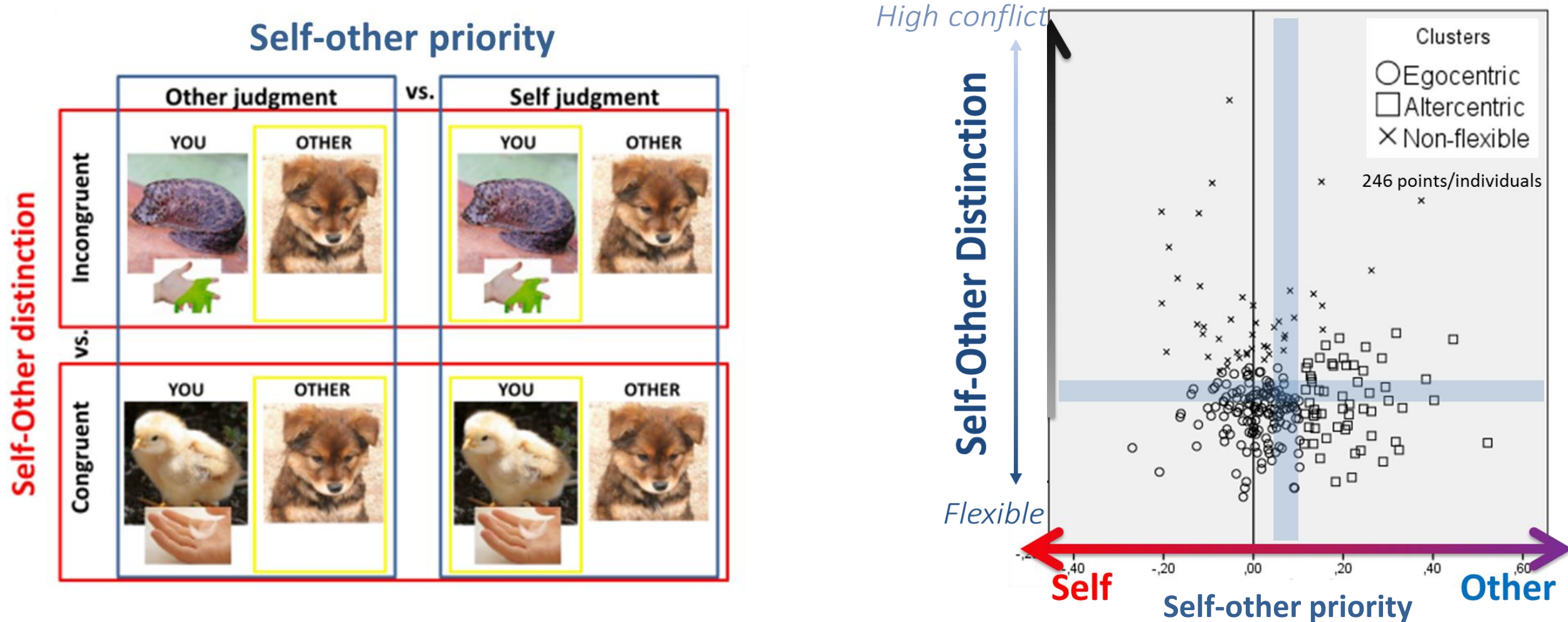
Uncovering socio-cognitive profiles



→ Finer-grained than poor vs. good performance

Uncovering socio-cognitive profiles

Individual differences among healthy adults: in the **EMOTION** domain :



How does HE feel [when he is touched by a cub while you are touched by a slug] ?

How do YOU feel [when he is touched by a cub while you are touched by a slug] ?

Uncovering socio-cognitive profiles

Across 4 clinical populations (preliminary data)

Poster 138 Thursday

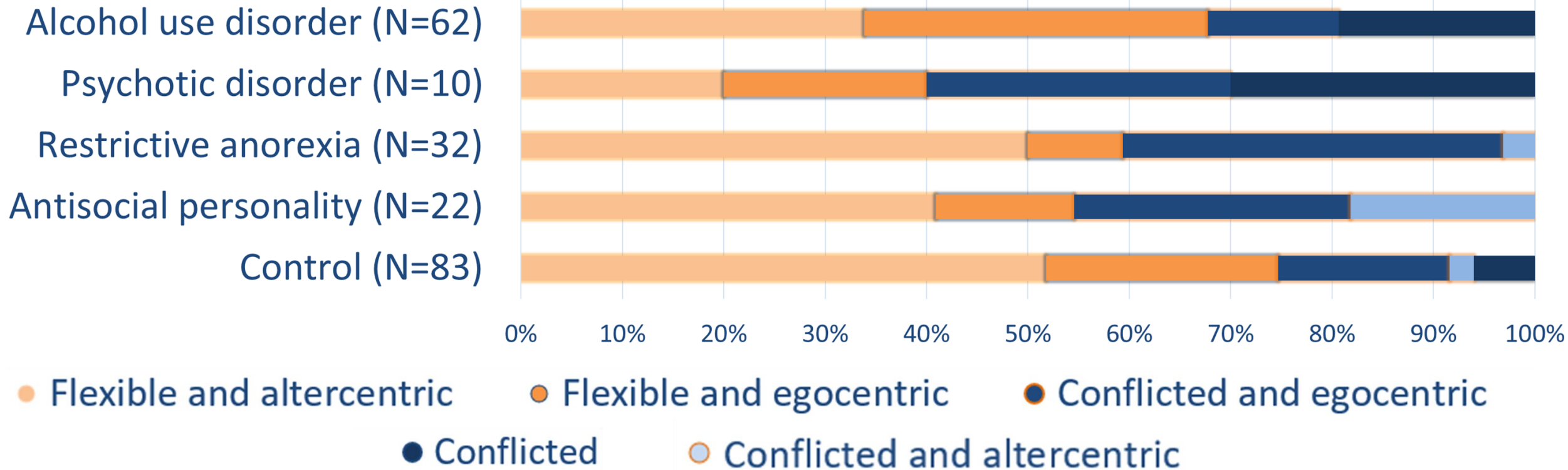
Bigot, A.*, De Timary, P., Amadieu, C., Leclercq, S., Pham, T., Saloppé, X., Tiberi, L., Nandrino, J.L., Peeters, J.C.,



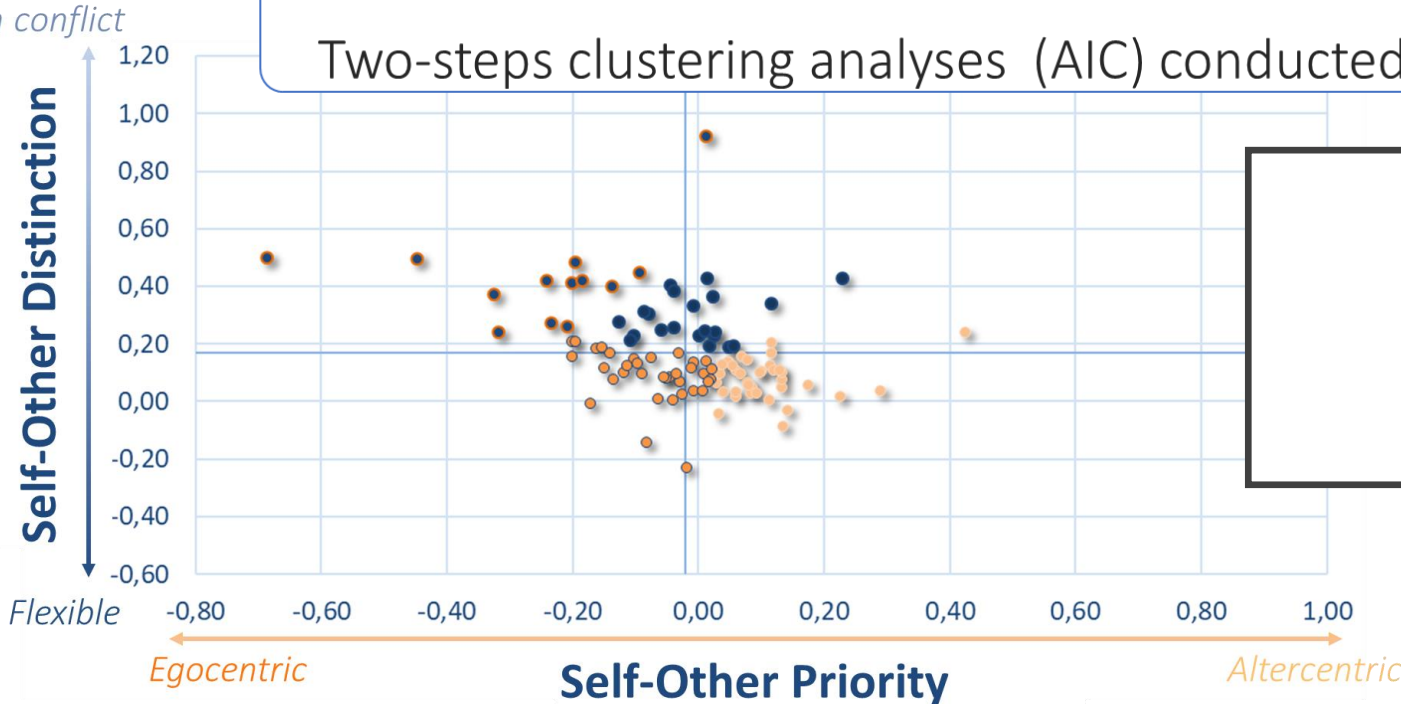
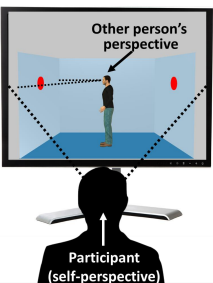
Bukowski, H. (2022)



*alix.bigot@uclouvain.be



VPT1
N=105



UNCOVERING SOCIO-COGNITIVE PROFILES

- Flexible and altercentric
- Flexible and egocentric
- Conflicted and egocentric
- Conflicted
- Conflicted and altercentric



VPT2
N=129

CONCLUSION

- (1) Transdiagnostic socio-cognitive profiles via 2-dimensional assessment : Self-Other Priority and Self-Other Distinction.
- (2) Document heterogeneity of profiles despite same diagnosis across 4 clinical populations
- (3) Three socio-cognitive profiles irrespective of PT task
 - **Self-Other Priority and Self-Other Distinction as building blocks underlying individual differences.**
- (4) Subtypes of 'mentalizing deficit' (instead of present/absent) : Excessively egocentric, excessively altercentric, conflicted, or a combination of deficits...

LIMITS: preliminary data, unmatched controls, different VPT tasks for different populations

PERSPECTIVES: **collaborations wanted** (13 min online/offline task; soon up to 8 sub-dimensions)

THANKS FOR YOUR ATTENTION

Thanks to:

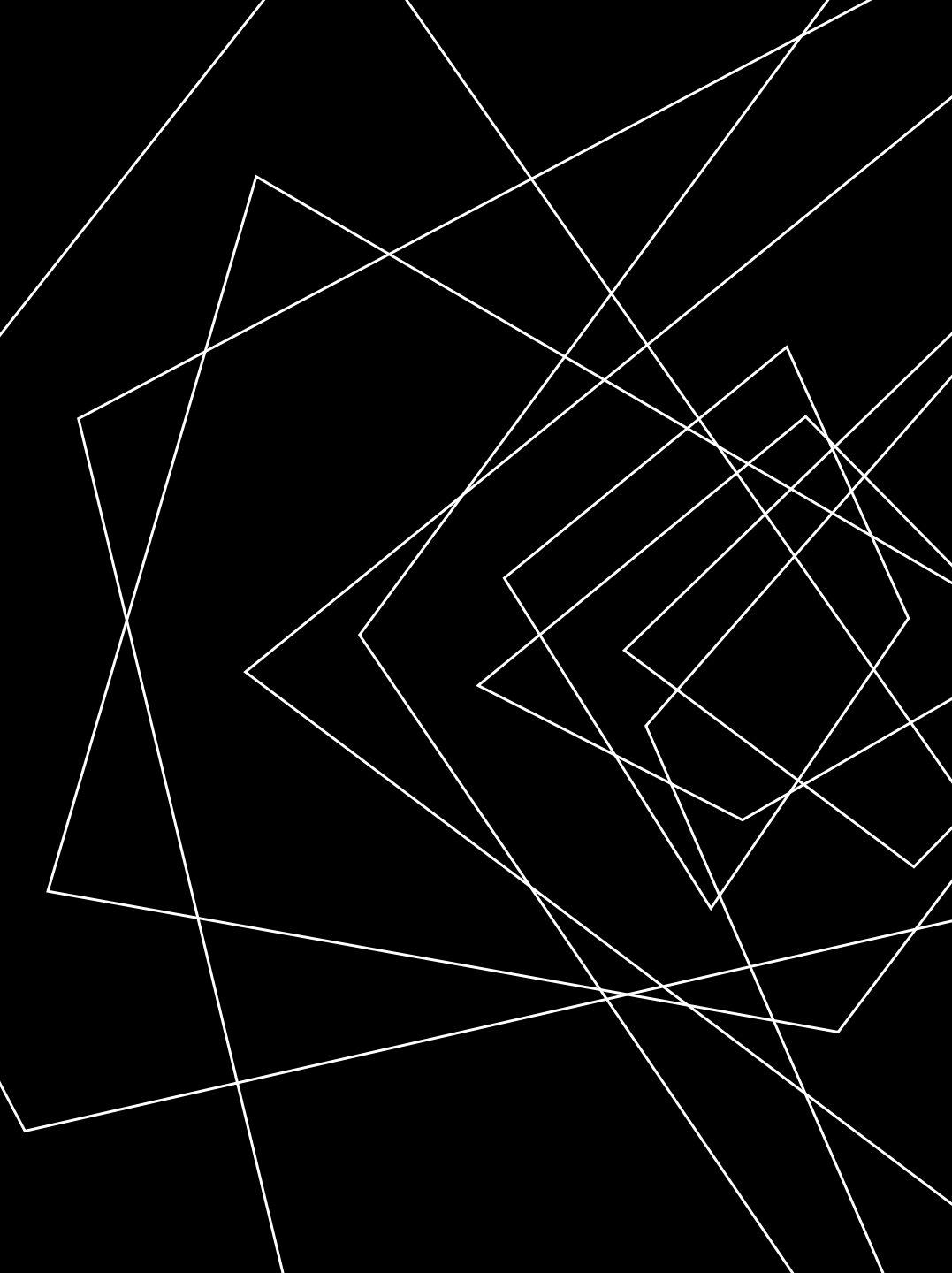
Alix Bigot (PhD student at IPSY, UCLouvain)

Pr. Philippe de Timary, Camille Amadieu, Dr. Sophie Leclercq
(Cliniques Universitaires Saint-Luc / UCLouvain)

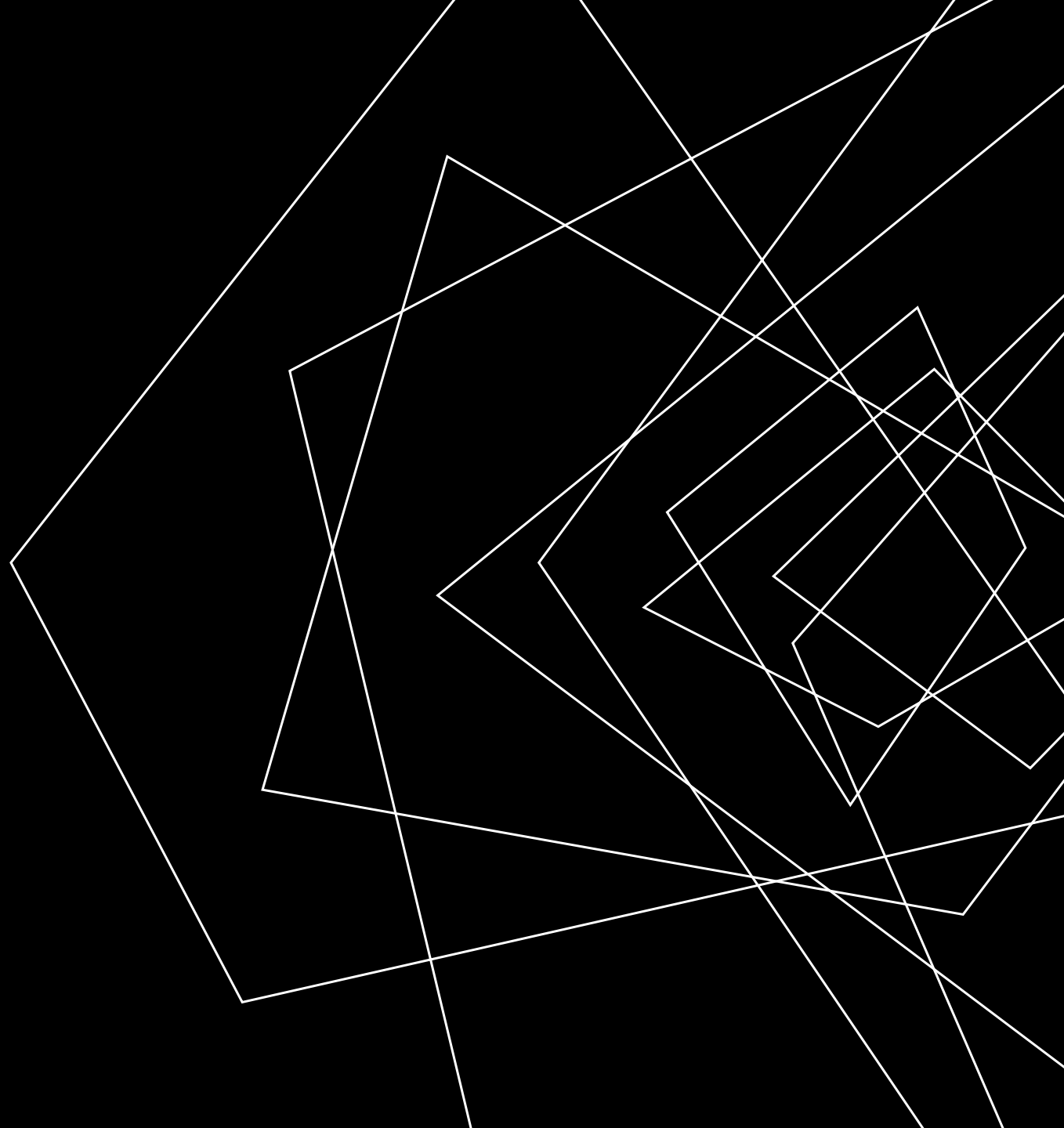
Pr. Thierry Pham, Luca Tiberi
(Centre de Recherche en Défense Sociale – UMonS)

Pr. Jean-Louis Nandrino, Dr. Xavier Saloppé
(SCALAB, Université de Lille)

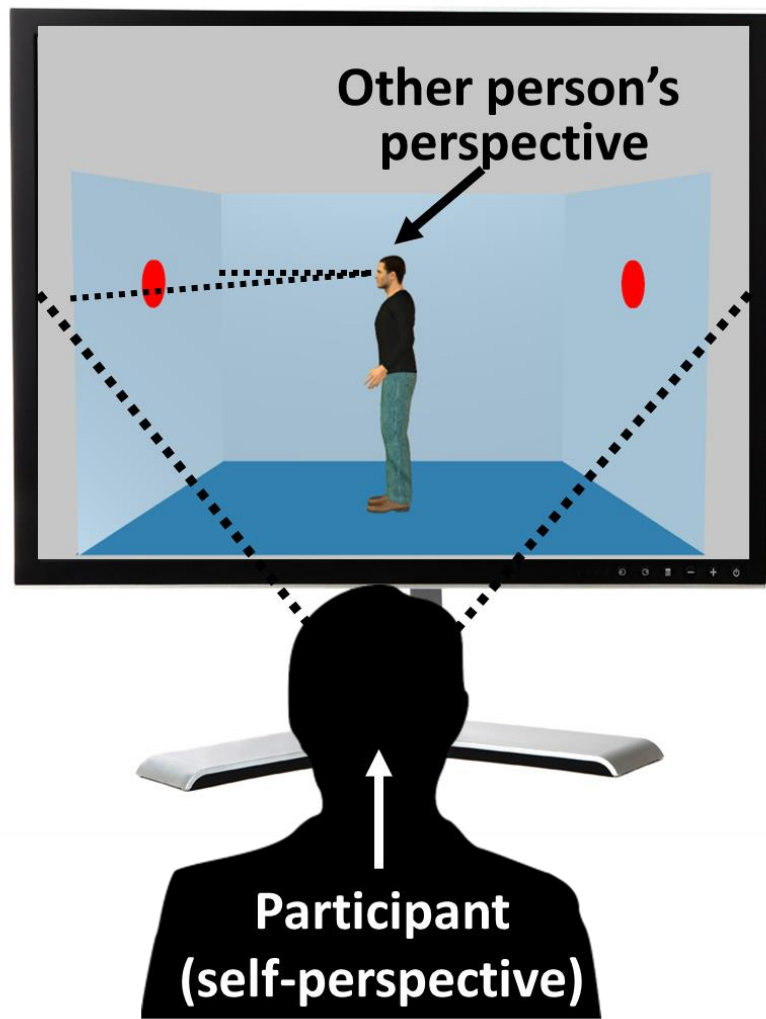
Jean-Charles Peeters
(Hopital psychiatrique Vincent Van Gogh)



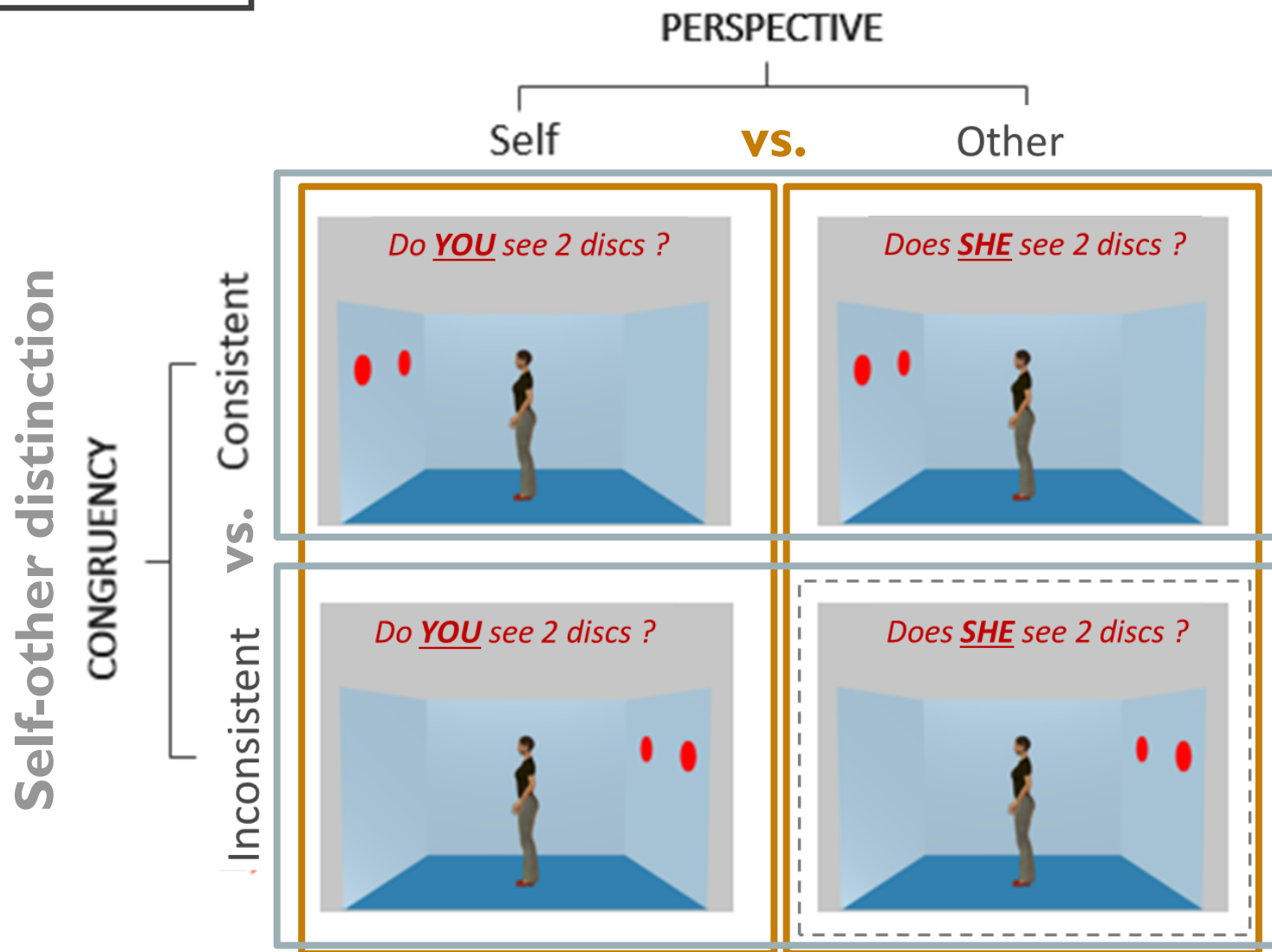
SUPPLEMENTARY SLIDES



2-DIMENSIONAL MENTALIZING PERFORMANCE



Self-other priority



Prospects for collaborations

[Web-based](#) (nothing to install) or offline (installed before)

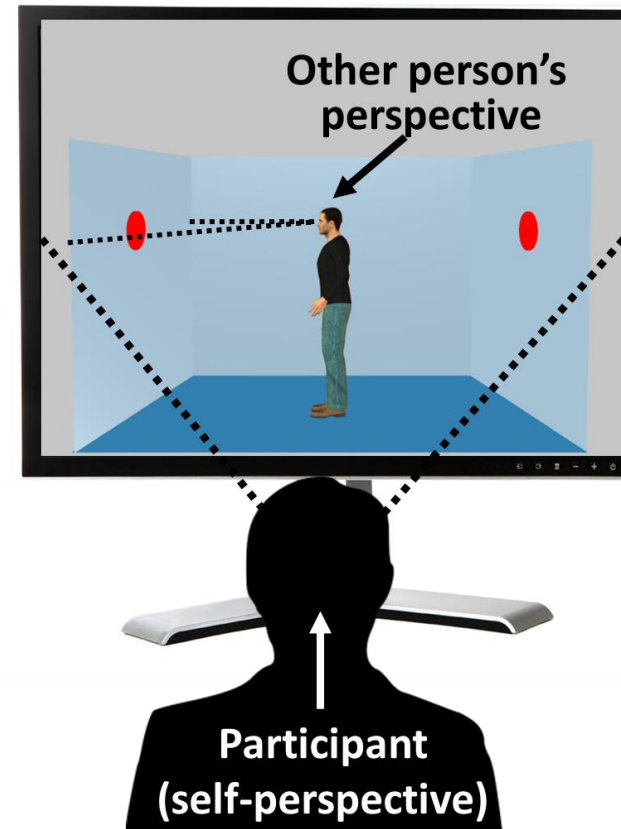
12-14 min duration

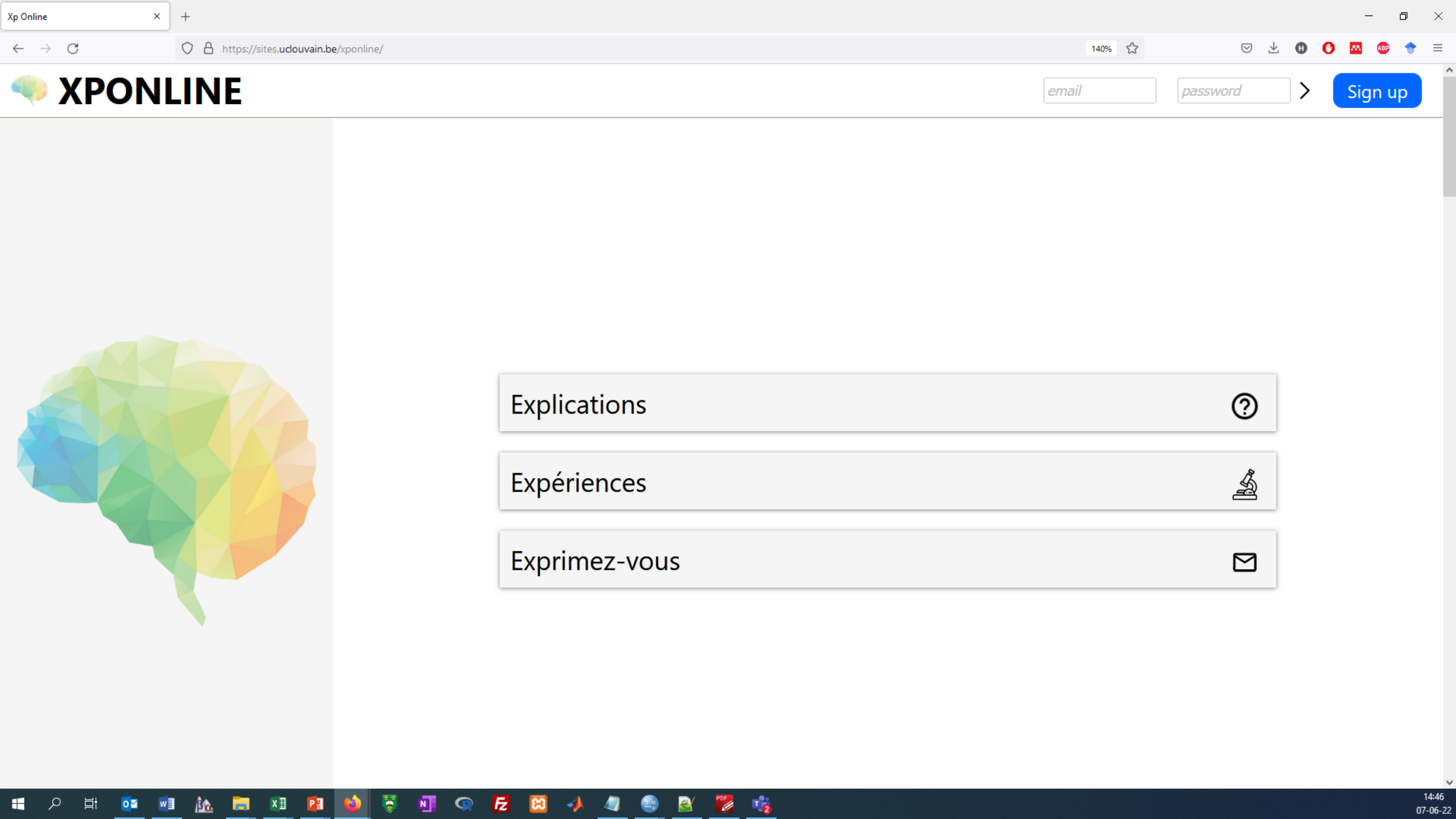
4 experimental conditions

Speed (RT) and accuracy (% errors) on 96 trials

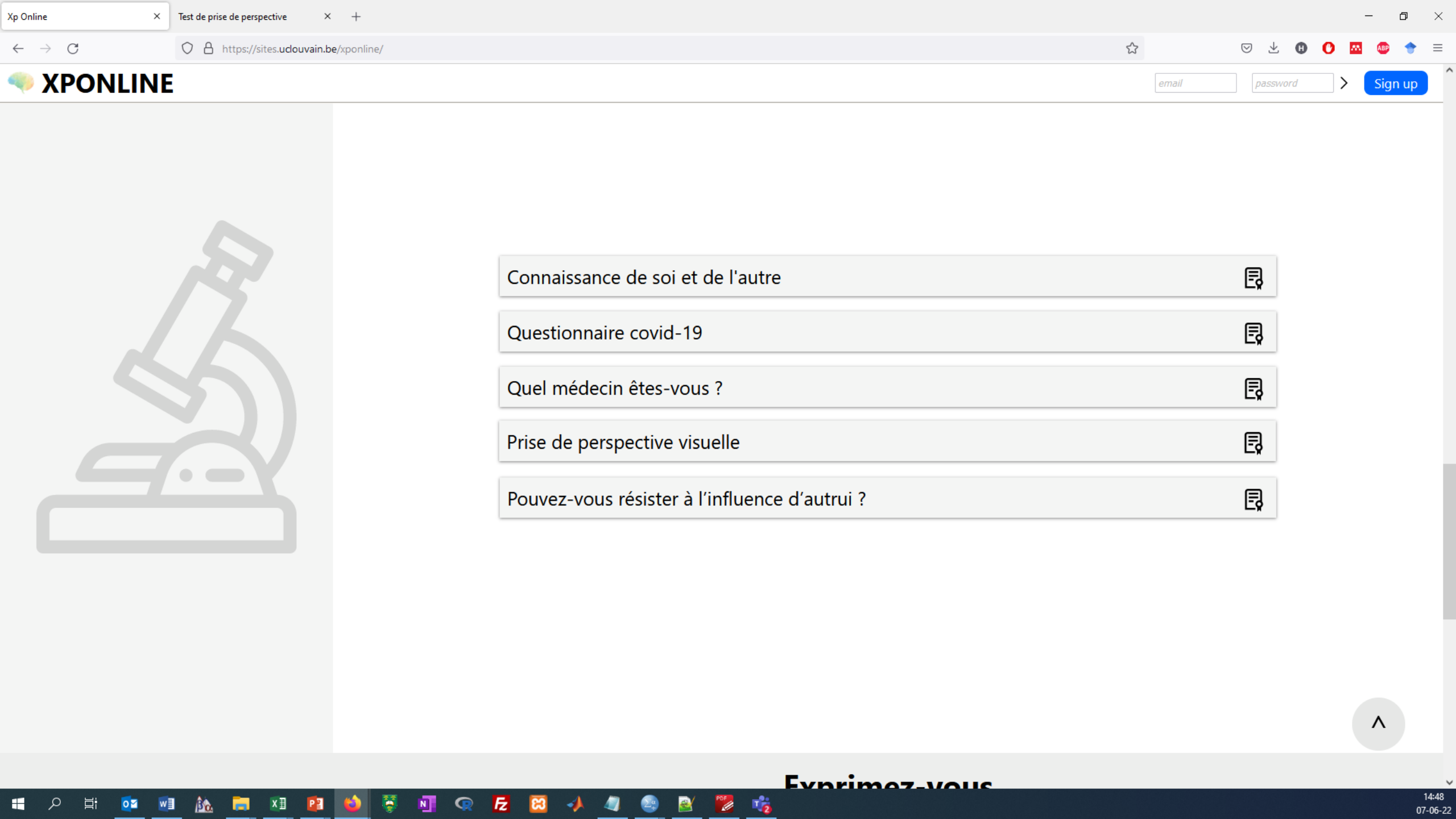
Centralized data storage

[Continuous online sharing of results](#)





- Explications 
- Expériences 
- Exprimez-vous 



- Connaissance de soi et de l'autre 
- Questionnaire covid-19 
- Quel médecin êtes-vous ? 
- Prise de perspective visuelle 
- Pouvez-vous résister à l'influence d'autrui ? 



Prospects for collaborations

**LARGE-SCALE,
DEVELOPMENTAL, AND
TRANSDIAGNOSTIC SCOPES**

LARGE-SCALE SCOPE

Example: replication study in Law students

151 participants in 3 weeks

No enrolment fee:

in return for automated feedback

No advertising fee:

ad on social media group of interest

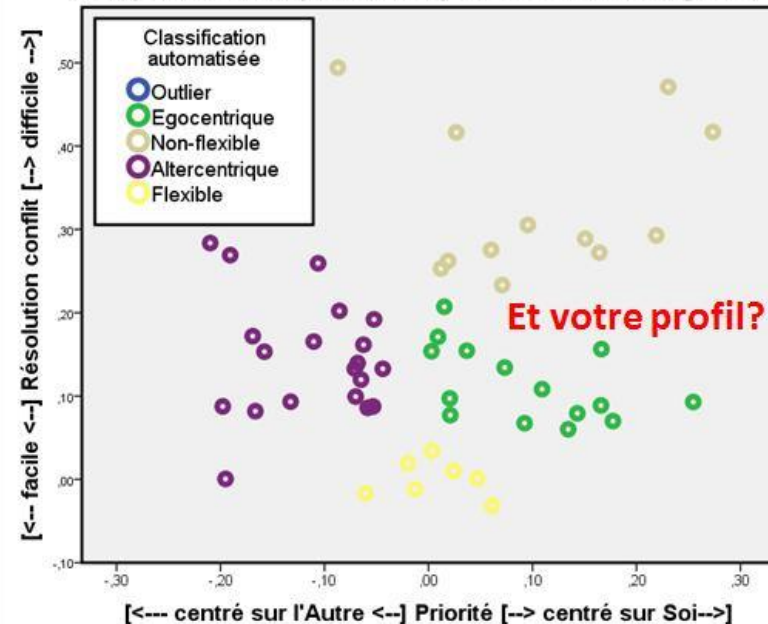
Directly analysed data

Pouvez-vous résister à l'influence d'autrui ?

Aidez la science et découvrez gratuitement **votre profil d'aptitudes sociales*** en participant à notre étude scientifique **via internet** (20 min sur ordinateur).

Une condition: **Etude en droit en cours ou terminée.**

Résultats intermédiaires sur 57 étudiants en Droit: Influences et capacités d'adoptions des points de vue divergents



*Feedback personnalisé sur vos résultats en relation avec des scores moyens. Ce feedback se base sur des outils standardisés à des fins scientifiques, est donné qu'à titre indicatif, et a aucune valeur certificative, diagnostique, ou légale.

→ Lien pour participer https://bit.ly/droit_influence

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DEVELOPMENTAL SCOPE

Repeatability across time:

No expected task learning
(too many distinct trials, random orders)

Low face validity (less sampling bias):
participant has no idea what it measures

Low social desirability bias:
Performance under time pressure
Potential for mobile-phone use

Other-perspective performance among
6 year old (N=36)
8 year old (N=35)
10 year old (N=24)
Adults (N=11)

