

# Research methodologies in social cognition: A measurement approach from the Social Neurosciences.

## Symposium title

Research methodologies in social cognition: A measurement approach from the Social Neurosciences.

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## Abstract

The field of social neurosciences and specifically the approach to social cognition has been fruitful in recent years. Although there is currently no consensus regarding the conceptualization of Social Cognition, most definitions agree in proposing that it deals with the processing of social information and includes neurobiological, psychological and social processes, both conscious and unconscious, through which people perceive, recognize and evaluate social events to develop representations of the relationship between oneself and others, and consequently, manage to function effectively in the social environment. Various investigations have been interested in investigating methodological aspects and psychometric properties of the tasks that have been developed to evaluate the processes included within the construct of social cognition. However, most of them are of Anglo-Saxon origin, which is culturally and linguistically very different from the Ibero-American region, whose countries, in addition to sharing the same language, share traditions and culture given their shared history that dates back more than five centuries. The Ibero-American Research Network on Social Cognition in Social Neurosciences (RIICS-NS) was born out of the need to carry out scientific studies that analyze the preponderant role of Social Cognition from the perspective of Social Neurosciences. The objective of the symposium is to present lines of work of researchers within the field of social cognition who are part of the network and work in countries such as Colombia, Mexico, Argentina and Spain. Five communications will be presented at the symposium that will address the relationships between social cognition and other psychological processes; psychometric properties of traditional techniques for assessing social cognition processes that have been culturally adapted in Ibero-American countries and cross-cultural approaches that the network has developed in order to discuss methodological and contextual challenges, as well as advances in the study of social cognition in Ibero-America.

## Keywords

social neuroscience, social cognition, assessment,

## Number of communications

5

## Communication 1

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## Abstract

**Introduction.** Social cognition allows understanding and predicting both one's own actions and those of others. It includes processes such as the perception of emotions, the theory of the mind, empathy and social judgment. The alterations in these processes have been broadly studied in people with Schizophrenia (Ef) and Autistic Spectrum Disorders (ASD). Currently, both diagnostic evaluation and interventions have been expanded to include a variety of conditions. These treatments are a fundamental basis in neuropsychological rehabilitation programs given their crucial impact on the quality of life and social integration of affected people. **Objective.** Through a systematic review, to detect therapeutic interventions that diminish alterations in social cognition processes. **Method.** The PRISMA procedure was implemented, and the PICO question was defined: Patients, any type with alterations in social cognition; Interventions, any type of treatment; Comparison with control groups or repeated measures; Outcomes, improvements in social cognition tasks or in daily life. The search was carried out on August 6, 2024, in PUBMED. Original articles, no revisions, no metaanalysis, no gray literature, in English and Spanish were requested. The terms for the research were social cognition AND treatment, rehabilitation, intervention, stimulation, therapy. The search was only in the title and included papers published from 2000 to August 2024. 94 elements were detected, 6 repeated. Therefore, 88 summaries were reviewed, of which 50 were excluded for being systematic reviews, states of the art, comments, opinions, editorials, conceptual analyses, correlational or predictive diagnostic studies, chapters, conference discussions, protocols or case studies. 38 were accepted, which were controlled studies with and without random assignment and pilot studies. **Results.** It was found several groups of treated patients, being the studies with Ef (16), other types of psychosis (7) and ASD (6) more abundant. The rest of participants were patients with brain damage (4) multiple sclerosis (1), mild cognitive impairment (1), children with cerebral palsy (1), children with neuromuscular diseases (1) and young offenders (1). The types of interventions were functional (magnetic and direct current), pharmacological (olanzapine, risperidone, haloperidol, clozapine), virtual and in-person cognitive and emotional stimulation programs (free and commercial), group therapies, theater, yoga and community-based psychosocial interventions, in some cases combined. Most studies (27) found improvements in some of the processes of social cognition, mainly in the recognition of emotions, and a little less in theory of the mind and empathy. Eight studies did not show improvements, 5 were with functional techniques, and 3 with training sessions (2 cognitive and 1 theater) applied to people with psychosis (6) ASD (1) and multiple sclerosis (1). **Conclusions.** Most interventions presented improvements in social cognition processes -although the gains were partial- being pharmacological and stimulation of social cognitive processes interventions more effective. However, research must be continued to guarantee improvement in various processes of social cognition and its transfer to everyday life activities.

## Keywords

social cognition, intervention, rehabilitation, treatment

## Communication 2

Exploring the Relationship between Fear of Public Speaking, Social Cognition, and Communication Skills in University Students

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## Abstract

**Introduction.** Fear of Public Speaking or Public Speaking Anxiety is a specific manifestation of Social Anxiety Disorder that can significantly interfere with personal, academic and professional performance. On the other hand, Social Cognition, which includes skills such as emotion recognition, theory of mind, empathy and attributional styles, is fundamental for interpreting the intentions and emotional states of others, facilitating effective communication and adjusting behaviours in different social contexts. In addition, communication skills, which encompass the clear and persuasive expression of ideas and the ability to adapt to social cues, are essential for successful interactions. **Objectives.** The present study aims to analyse the relationship between Fear of Public Speaking, Social Cognition and Communication Skills. **Methodology.** A sample of 436 university students (26% male, 74% female; mean age =  $21.1 \pm 3.46$  years) was obtained through convenience sampling. The tests used were: Social Anxiety Questionnaire for Adults (SAQ-A30), Reading the Mind in the Eyes Test (RMET), Interpersonal Reactivity Index (IRI), Penn Emotion Recognition Task (ER-40), Attribution Style Questionnaire (ASQ), Communication Skills Questionnaire (HABICOM). Multiple regression analyses were performed with SPSS v.29 to assess how different measures of Social Cognition (RMET, IRI, ER-40, ASQ) and Communication Skills (HABICOM) predict the Fear of Public Speaking (SAQ-A30; 'Public Speaking' factor). **Results.** Findings revealed significant relationships between predictor variables and Public Speaking Anxiety. First, a positive association was identified between empathy levels and anxiety, whereas a negative attributional style (particularly internality and globality in negative situations) was linked to a higher propensity to experience this fear. On the other hand, Communication Skills are presented as a relevant protective factor, given that their presence is related to lower levels of Public Speaking Anxiety. Finally, gender is recognised as a significant factor influencing levels of Fear of Public Speaking and some of the processes of Social Cognition. **Discussion.** The results suggest that people with greater empathy may be more vulnerable to social evaluations, while a negative attributional style may intensify the perception of threat. On the other hand, the development of communication skills may decrease barriers to expression, thereby reducing anxiety. These findings underline the importance of working on empathy, strengthening communication skills and modifying attributional style as a strategy to address Fear of Public Speaking in personal, academic and professional contexts.

## Keywords

Fear Public Speaking; Social Cognition

## Communication 3

Analysis of the factor structure of the Yoni Task instrument for its cross-cultural validation in the Spanish-speaking population

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## Abstract

**Introduction:** The assessment of social cognition through the Theory of Mind can contribute to the study of this construct. One of the instruments proposed to assess the Theory of Mind is the Yoni Task, with which a cross-cultural validation is being carried out for the Spanish-speaking population (Argentina, Mexico and Spain). **Objective:** This study aims to determine the factor structure of the Yoni Task instrument. **Method:** A

first version of the instrument consisting of 97 items has been applied to a sample of 596 participants between 18 and 65 years old of the three countries, which has shown a good reliability index. In a first exploratory factor analysis, with all the items, the instrument has shown an inadequate factorization, with a solution difficult to interpret due to the high number of factors obtained, when based on the theory only two are expected. In the second step, a procedure for the assignment of items was followed to allow the selection of those items with the best psychometric properties and the factorization of the second version of the instrument was analyzed by means of a robust factor analysis using the Factor program. Results: a short version of the instrument was created, consisting of 17 items. The results of the factor analysis performed with the short version show 2 factors (Affective and Cognitive) to which the items fit adequately and have obtained good reliability indices. Conclusion: based on the results, it has been verified that the short version works adequately in this sample, and it is proposed to administer the test to a new sample to ensure that the results are replicable and thus, to be able to validate the conclusions.

## Keywords

cross-cultural validation, Yoni Task.

## Communication 4

The Internal Structure of Theory of Mind: Factorial Analysis of Its Evaluation Instruments

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## Abstract

Introduction: Theory of Mind (ToM) is a fundamental neurocognitive function for Social Cognition. However, there are still not enough validated and standardized instruments to assess this function in the Latin American population, and even fewer in Colombia, which limits its clinical analysis.

Objective: Analyze the internal structure of instruments for the assessment Theory of Mind in children and adolescents through factorial analyses.

Method: The analyzed instruments were the Theory of Mind Battery (ToMB), the Reading then Mind in the Eyes Test (RMET), the Faux Pas Test (FPT), and the Theory of Mind Inventory (ToMI). A heterogeneous sample of 531 participants aged 3 to 17 from the Atlántico Department, Colombia, was used. The analysis was conducted using a non-restrictive exploratory approach with confirmatory aims through structural equation models adjusted by refined regression and evaluated using Tukey's hinges. Normative data were generated from linear regressions and standard deviations of the residuals from the models.

Results: Ten factors were identified for the ToMB, three factors for the RMET, two factors for the FPT, and two factors for the ToMI. All instruments showed adequate psychometric properties.

Conclusions: The factorial analyses confirm that each of the instruments assess different dimensions of Theory of Mind, indicating that ToM is multidimensional. Additionally, the instruments presented good reliability indicators, allowing their inclusion in a unified protocol for clinical use, being a key component in neuropsychological assessment.

## Keywords

Theory of Mind, factorial analyses.

## Communication 5

Challenges and limitations in the evaluation of theory of mind in Latin America: Methodological and contextual challenges.

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## Abstract

The concept of social cognition includes a series of processes that allow people to understand the social world. The theory of mind as the capacity of people to ascribe mental entities such as desires, beliefs, intentions and emotions has had a great development. The classic tasks that allowed the evaluation of the process were limited to all/nothing tasks, that is, the person evaluated presented or not difficulties in the capacity. Over the years, evaluation techniques were developed mainly in English with adaptations in other languages. A relevant aspect to consider was the effect of cultural differences on the tasks that were developed. On the other hand, new models of the functioning of the theory of mind have approached it as a two-dimensional process (cognitive and affective theory of mind) that presents levels and indicators of development, so it would stop functioning as a unique capacity and with an all/or nothing operation. The objective of the work is to analyze the challenges and limitations presented by the classic and most used tasks in the evaluation of the theory of mind considering their psychometric properties and contextual limitations.

## Keywords

theory of mind, assessment, Methodology

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**Session Classification:** Symposium : "Research methodologies in social cognition: A measurement approach from the Social Neurosciences."

**Track Classification:** Design/Research methods: Design/Research methods