PROGETTO 1/ PROJECT 1

Supervisore/*Supervisor*:

Titolo/*Title*:	Framing the Neuropsychological Structure of the Hierarchical Taxonomy Of Psychopathology (HiTOP) Spectra
Corso /*PhD Course*	Scienze Cognitive e Comportamentali/Cognitive and Behavioral Sciences
Curriculum:	---

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Descrizione del progetto/Project description (Tra i 2.000 e 3.000 caratteri spazi inclusi/ *Number of characters, including spaces*: 2.000 - 3.000):

The reliability and validity of traditional taxonomies are limited by a number of shortcomings including the lack of evidence on the categorical latent structure of common mental disorder. The Hierarchical Taxonomy of Psychopathology (HiTOP; Kotov et al. 2021) system aims at providing a quantitative-empirical dimensional model of psychopathology integrating nosological and psychometric research. HiTOP provides a framework for linking clinical phenotypes with measures of neurobiological systems, and is thought to accelerate progress in clinical neuroscience, providing a bridge between basic neuroscience research and clinically-relevant dimensions of psychopathology (Latzman et al., 2020). Specifically, the HiTOP directly models aspects of psychopathology that systematically co-occur addressing heterogeneity through hierarchical structures, with broad dimensions at higher levels subdivided into narrower subdimensions at lower levels. Accordingly, HiTOP relies substantially on factor analysis techniques and requires the availability of measures provided with sound psychometric properties. Notably, bifactor and correlated transdiagnostic factors models imply very different conceptualizations of the latent structure of mental disorders and how transdiagnostic factors (and thus mental disorders), relate to one another that need to be further evaluated. Moreover, only few studies relied on neuropsychological measures and computational modelling of behavioral response data (e.g., reaction time) to interface HiTOP with neurobiology from a structural perspective, elucidating cognitive-behavioral processes leading to and maintaining psychopathology.

Against this background, the present research project aims at: (a) evaluating different latent models explaining the covariation among sign and symptoms of psychopathology; and (b) considering neuropsychological indices as indicators of psychopathology in HiTOP spectra modeling. The present research project will focus on a large (N≈1000) sample of community-dwelling participants; subjects will be recruited for neuropsychological assessment if they scored in the upper 10% of the distribution for HiTOP spectra (N≈100). The first year of the PhD program would be dedicated at evaluating the adequacy of competing structural models of psychopathology (e.g., bifactor model vs. correlated factor model) in terms of 'model quality' (Greene et al., 2019). During the second year, reliable and valid neuropsychological tasks (e.g., emotional stroop task for negative affectivity; stop-it task for disinhibition; and n-back task for psychoticism) for structural modeling of psychopathology would be selected. Finally, the third year would be devoted to modeling neuropsychological indices as transdiagnostic factors bridging different units of analysis (i.e., behavior, as assessed by self-report measures, and behavioral manifestations of latent processes, as they are measured by reaction time and other neuropsychological indices).

Competenze che deve acquisire lo studente/Skills to be acquired by the student (Max 600 caratteri spazi inclusi/ *Number of characters, including spaces*: max 600):

Administering and scoring neuropsychological and behavioral tasks

Learning and applying advanced reliability and validity theory

Experimental designs for psychometrics and clinical psychology

Sample size estimation and power analysis for structural equation modeling (e.g., power4SEM)

Design of studies for assessing the psychometric properties of neuropsychological tasks

Multivariate statistical analyses (e.g., structural equation modeling)

Statistical software for advanced psychometric analyses and laboratory task development and administration (e.g., R, Mplus, Matlab)

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