

Institutional profile for potential collaboration under Horizon Europe

Brief description:

The Behavioural Science Institute (BSI, <https://www.ru.nl/bsi/>) is a multidisciplinary institute for fundamental and applied behavioural research. BSI researchers collaborate across the boundaries of psychology, educational science, and communication science.

BSI research covers three broad themes: **1) development and learning, 2) health and mental health, and 3) social processes and communication.** Seven research groups collaborate on these research themes (described below).

Key words: behavior change, mental and physical well-being, language, communication and media, (special) education, caregiver-child interaction, adolescence, typical and atypical populations, sustainability, food choices, prejudice, social media, public debate, healthy work, health behavior, child development.

Horizon Europe topics of interest:

We are looking to join a Consortium as a partner (work package leader, task leader) across all Horizon Europe Clusters, as our broad expertise matches many topics. A selection of topics is provided below.

Cluster 1 Health

- HORIZON-HLTH-2023-ENVHLTH-02-02: Evidence-based interventions for promotion of mental and physical health in changing working environments (post-pandemic workplaces)
- HORIZON-HLTH-2024-STAYHLTH-01-02-two-stage: Towards a holistic support to children and adolescents' health and care provisions in an increasingly digital society
- HORIZON-HLTH-2023-CARE-04-02: Resilience and mental wellbeing of the health and care workforce
- HORIZON-HLTH-2024-CARE-04-04-two-stage: Access to health and care services for people in vulnerable situations

Cluster 2 Culture, Creativity and Inclusive Society

Topics in all three destinations, in particular:

- HORIZON-CL2-2023-DEMOCRACY-01-04: The emotional politics of democracies
- HORIZON-CL2-2024-DEMOCRACY-01-04: The interrelation between social, cultural and political identities, as well as the sense of belonging, and democracies
- HORIZON-CL2-2024-HERITAGE-01-05: Strategies to strengthen the European linguistic capital in a globalised world
- HORIZON-CL-2023-TRANSFORMATIONS-01-01: Remote working arrangements and their economic, social and spatial effects
- HORIZON-CL2-2023-TRANSFORMATIONS-01-05: Efficiency and effectiveness of investment in high-quality education and training
- HORIZON-CL2-2023-TRANSFORMATIONS-01-06: Mapping of longitudinal data and assessment of inequalities in education, training and learning achievements

- HORIZON-CL2-2024-TRANSFORMATIONS-01-01: Policy recommendations from socio-economic impacts of loneliness in Europe
- HORIZON-CL2-2024-TRANSFORMATIONS-01-06: Beyond the horizon: A humanfriendly deployment of artificial intelligence and related technologies
- HORIZON-CL2-2024-TRANSFORMATIONS-01-07: Methodologies for teamworking of researchers – reinforcing transversal skills, behavioural and implementation sciences.
- HORIZON-CL2-2024-TRANSFORMATIONS-01-09: The role of social economy in addressing social exclusion, providing quality jobs and greater sustainability

Cluster 4 Digital, Industry and Space

- HORIZON-CL4-2023-HUMAN-01-03: Natural Language Understanding and Interaction in Advanced Language Technologies (AI Data and Robotics Partnership)
- HORIZON-CL4-2023-HUMAN-01-81: Digital Humanism - Putting people at the centre of the digital transformation
- HORIZON-CL4-2024-HUMAN-01-07: Collaborative intelligence – combining the best of machine and human (AI Data and Robotics Partnership)

Cluster 5 Climate, Energy and Mobility - a number of topics, among them:

- HORIZON-CL5-2023-D1-01-09: Behavioural change and governance for systemic transformations towards climate resilience

Widening participation and ERA:

- HORIZON-WIDERA-2023-ERA-01-07: Support to reforms of research assessment in the European Research Area
- HORIZON-WIDERA-2024-ERA-01-04: Strengthening researchers' skills for better careers – leveraging the European Competence Framework for Researchers CSA
- HORIZON-WIDERA-2024-ERA-01-12: Next generation AI and Human Behaviour: promoting an ethical approach
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Brief description of contribution as a potential partner:

1) Development and Learning:

- **Learning and learning problems in children and youth:** learning in normal and atypical populations including language and math learning; youths with learning problems; gifted children; children with mental, physical, or sensory handicaps; adaptive and differentiated teaching practices; use of technology in education.
- **Social and emotional development and behavior problems in children and youth:** temperament; personality; caregiver-child interaction; peer relationships; development of prosocial and antisocial behavior; social cognition in children; bullying and aggression; friendship networks.

2) Health and Mental Health:

- **Behaviour change in various domains**, such as active and healthy living, exercise, eating, behaviors that support a sustainable environment, prejudice, forgiveness and cognitive control in interpersonal relationships.
- **Developmental psychopathology**: the development- and treatment of psychopathology and well-being: addiction, anxiety, depression, eating disorders, body image, (un)healthy lifestyles, substance use, and resilience across the life span.
- **Mental health and the treatment of psychological disorders**: cognitive and neurobiological processes in psychopathology (mental health); the development of therapeutic interventions to aid mental health in society.
- **Healthy and safe working**: (i) the nature and consequences of work-related mental fatigue, (ii) the challenges and opportunities of hybrid teleworking, and (iii) the psychological drivers of work-related sitting behaviour and physical activity.

3) Social Processes and Communication:

- **Communication and media**: psychological mechanisms underlying the use of media, and the potential of mediated communication to improve people's well-being.
- **Social behavior and social influence**: the processes that determine people's social behavior (cooperation, helping, aggression); the role of social interactions and social networks (family studies, parent-child relations, peer influences, co-worker influences) on behavior and well-being.

Within our research areas, we employ a range of research methods and techniques:

- A wide array of **behavioral, cognitive, and neuroscientific measures**
 - **Virtual reality** technology.
 - Methods from **Artificial Intelligence** including machine learning and knowledge representation.
 - **Genetic designs, DNA samples, hormonal measurements.**
 - **Cognitive neuroscience** techniques (EEG/ERP, fMRI, MEG).
 - **Behavior observations** of human behavior in dyads and groups.
 - **E-learning** in education.
 - **Explicit and implicit measures** of social perceptions and attitudes.
- **Laboratory experiments, longitudinal field studies, and applied intervention and implementation studies.**
 - Prospective longitudinal designs.
 - Epidemiological designs.
 - Quasi-experimental designs, randomized controlled trials and applied **intervention studies.**
 - Sociometric analyses, sequential analyses, dynamic social network modeling, advanced longitudinal data analyses (dynamic) structural equation modelling, and Ecological Momentary Assessments.
 - Combining self-report measures with objective behavioral, psychophysiological, and/or neurocognitive measurements.

- **Collaboration with societal partners:** youth care institutions, schools, hospitals, mental health practitioners, police, municipalities, juvenile prisons, worker unions, addiction care facilities.
- Focus on **open science practices**.
- Focus on **(interdisciplinary) team science**.

Key persons involved:

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Annex

Main research areas:

<p>1) Behavior Change and Well-Being Studies basic processes that underlie human social behaviour, behaviour change, and well-being. Focus on underlying psychological processes including inhibition and attention, agency, self-control and mindfulness, implicit and explicit evaluations, psychological defence mechanisms, and sensory input (e.g., smell, touch) in human interaction. We seek to understand the role of such fundamental processes on behaviour and wellbeing in various domains of daily life, including health, sustainability, food choices, prejudice, and social and romantic relationships.</p>	<p>2) Communication & Media Studies the psychological mechanisms underlying uses of media, processes and effects, while taking into account the social-cultural mechanisms of the media landscape. Also conducts positive communication research on how mediated communication can improve well-being. The group focuses on three communication themes: influence (commercial and prosocial marketing communication), information (journalism and news), and culture (media and consumer community and culture).</p>
<p>3) Developmental Psychopathology Fundamental and applied research on the development of psychopathology and well-being from infancy to early adulthood focusing on family studies (e.g., parent-child relationships) and social interactions (e.g., peer influence). Topics include: internalizing problems (e.g., anxiety, depression, loneliness), externalizing problems (e.g., conduct disorder and Callous-Unemotional traits), eating and lifestyle behaviors, substance use (alcohol, smoking, drugs), well-being, effects of trauma and stressors on development, and the development of prosocial and antisocial behaviors. Focusses also on typical behavior and factors that facilitate resilience and (positive) well-being.</p>	<p>4) Experimental Psychopathology and Treatment Experimental research on cognitive and neurobiological processes in psychopathology (mental health). Experimental designs to study clinically relevant cognitive processes such as attention, interpretation, memory, implicit associations, and executive functions in various disorders. A multi-modal approach of applying experimental methods (ranging from reaction times and verbal reports to eye-tracking, fMRI, EEG, and TMS, as well as behavioral tests in real and virtual environments) to cognitive processes and their modifications to make progress in the field of mental health, prevention, and intervention.</p>
<p>5) Learning and Plasticity</p>	<p>6) Social Development</p>

Main focus is on learning in typical populations (children, adolescents, and young adults in regular education) and in atypical populations (youths with specific learning problems; individuals with mental, physical or sensory handicaps; gifted persons). Special attention is given to the cognitive, social and motivational constraints on learning, and the contextual effects of instruction and intervention. Includes a focus on educational research in schools and the role of teachers and intervention practitioners.

Conducts fundamental research on social and emotional development and related processes across the life span. Concentrates on social factors (parents and peers) as well as individual factors (e.g., biological factors, temperament, personality) from a developmental perspective. Also includes applied research on the causes and treatment of psychopathology in childhood and adolescence (such as trauma, addiction, anxiety, depression, aggression).

7) Work, Health and Performance

Studies human behavior in work and organizations (work, health and performance) in four interrelated research lines:

- 1) Psychology of fatigue: the nature and consequences of mental fatigue in the context of work, exercise and social relationships.
- 2) Hybrid working and sustainable well-being: the challenges of hybrid working (combining on-site and off-site working), advice on the conditions for sustainable hybrid working for diverse groups of workers.
- 3) Safety and moral behavior: the factors that contribute to (un)safe and (im)moral behavior and social responsibility in work environments.
- 4) Sedentary work and physical activity: the psychological processes that drive sitting behavior and physical activity before, during and after mental work.

Radboud University:

In the first rounds of Horizon Europe (2021 deadline), Radboud University has already secured more than 30 million euro of EU funding with a remarkable success rate of 28,04%. The University's funded projects are spread across all Horizon Europe Pillars, with increasingly more projects funded and coordinated by Radboud University in various Pillar II Clusters.

Between 2014 and 2020, Radboud University and Radboudumc received more than 200 million EUR from the European Commission for 285 research and innovation projects, making it to top ten Dutch organisations with highest net EU contribution in Horizon 2020.

For more information or questions: collaborate@ru.nl.