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Human Experience Dynamics (HED)

A platform to integrate physiological, behavioural and subjective data using Temporal Experience Tracing™, a drawing method to capture human experience.

Human Experience Dynamics (HED), a new spinout of the University of Cambridge, has created a platform that redefines how we measure the subjective aspects of human experiences and how we use those measurements alongside clinical, cognitive, physiological and brain imaging data. The tools and methods HED have developed capture richer, more sensitive, precise, and continuous insights for clinical trials, biomedicine, and wellbeing tracking. HED uses AI-powered and evidence-based analytical tools to create reports for clinical researchers, improving the clinical, scientific and economic efficiency the trials.

Technology overview

Dr Barbara Jachs and Dr Tristan Bekinschtein have developed Temporal Experience Tracing™ (TET) to address a critical gap in healthcare and clinical trials: the lack of reliable, time-continuous data on patients' first-person experiences and how these integrate with clinical and physiological measures. Traditional methods of capturing subjective patient data, such as questionnaires and scales, are often too simplistic, offering only snapshots that fail to capture the richness of patients' day-to-day fluctuations in symptoms like pain, fatigue, and emotional well-being. The data from existing methods lacks depth, fails to provide actionable insights, and is unable to match the granularity in physiological data Clinical Trials are already collecting.

TET solves this by allowing patients to retrospectively map their experiences across multiple dimensions throughout the day, generating time-series data

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that is scientifically robust and aligns with physiological metrics like heart rate or biomarkers. This holistic view provides a more accurate picture of how patients respond to treatments, enabling clinicians and researchers to better understand treatment efficacy and optimise care.

A key aspect of TET is its patient-centric design. The system tracks both generic experience dimensions, allowing comparisons across different patient cohorts, and condition-specific dimensions that are co-designed with patients. This ensures that the experiences and symptoms that matter most to the individual are being monitored. This collaborative approach allows researchers to track what truly affects patient quality of life, ensuring that treatments and interventions are assessed on metrics that resonate with those living through them and become rich and sensitive outcomes for the research trials.

The real-world impact of TET is profound: it empowers healthcare providers to personalise treatments, improving outcomes for patients in areas such as chronic illness management, palliative care, and mental health. By integrating subjective experience data with clinical measures, we can better understand the complexities of human health.

Opportunity

We are actively engaging with organisations in the clinical trial sector to further apply TET as a new, dynamic method of data capture. We are especially interested in developing partnerships with pharmaceutical, health and wellness, and medical device companies.

Data has already been collected across several research trials, including studies on Stress and Anxiety in Autism, Chronic Pain, Meditation Practices, Mild Cognitive Impairment, and Breathwork-induced psychedelic experiences.

Our mission is to redefine how the subjective aspects of human experience are measured during these trials, offering richer, more sensitive, precise, and continuous insights that can lead to groundbreaking advancements in healthcare.

References

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