

How Technology Will Advance Clinical Practice: A Roadmap for Today and Tomorrow

Dr Ben Buchanan

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Clinical Psychologist
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Psychometric Scales and AI Scribe for Mental Health Practitioners in One Platform



Assessment powered by

NovoPsych

- ✓ Access to Over 150 Assessments
- ✓ Instant Scoring and Metrics
- ✓ Graph Symptoms Over Time



NovoNote

by NovoPsych

- ✓ AI-Generated Progress Notes
- ✓ One-Click Session Notes
- ✓ Secure Data Storage

NovoPsych was founded in 2012.

Our mission is to help mental health clinicians use psychometrics and AI to improve client outcomes.

75,000

Clinicians using NovoPsych

900

Practices

40,000

Clients Assessed / Week

150

Psychometric Scales Available



Dr Ben Buchanan

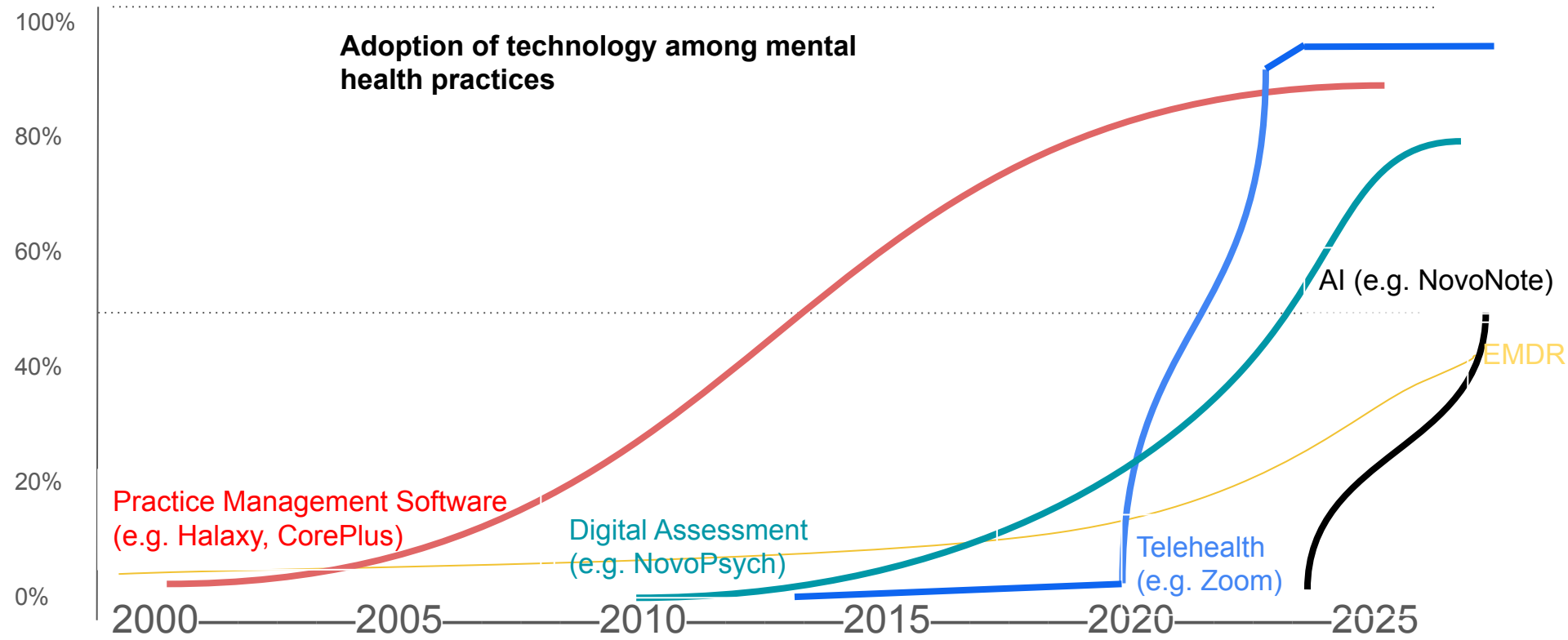


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1. The shortcomings of current mental health care, and how AI could help
2. Identify the synergies developing between the human mind and other forms of intelligence
3. The research evidence behind AI-generated documentation. Accuracy, quality and reliability
4. Identify practical ways to adopt enabling technology
5. Risks and pitfalls of AI in mental health care
6. Consider a future of AI supported clinical decision making

AI will impact the way:

1. Mental health needs are identified
2. Interventions are delivered
3. Outcomes are measured





Computers

- **Memory:** Computers can store vast amounts of information and retrieve it instantaneously, far beyond human capacity.
- **Maths:** Performing complex mathematics with speed and precision (or just score the DASS-21).
- **Repetitive Processing:** Executing tasks consistently without fatigue.



Humans

- **Pattern Recognition:** Predictions and insights from patterns (diagnosis).
 - **Understanding Language:** Listening and generating language to facilitate interactions.
 - **Learning and Adaptation:** Learning from seeing examples of things, without explicit instruction.
 - **Creativity:** Creating new works of art, music or works of fiction.
- **Emotional Intelligence:** Understanding and responding to complex emotional cues.
 - **Moral and Ethical Reasoning:** Navigating situations that require subjective judgment and ethical considerations.
 - **Innovation:** Generating original ideas and thinking outside the conventional paradigms.



Summary of WAIS-IV results: Source: [arXiv:2410.07391](https://arxiv.org/abs/2410.07391) (Oct 2024)

	Humans		AI
Scale	Percentile	Descriptor	
Verbal Comprehension (VCI)	50	Average	
Perceptual Reasoning (PRI)	50	Average	
Working Memory (WMI)	50	Average	
Processing Speed (PSI)	50	Average	
Full Scale IQ	50	Average	

Open AI O3 model. \$3000 per question

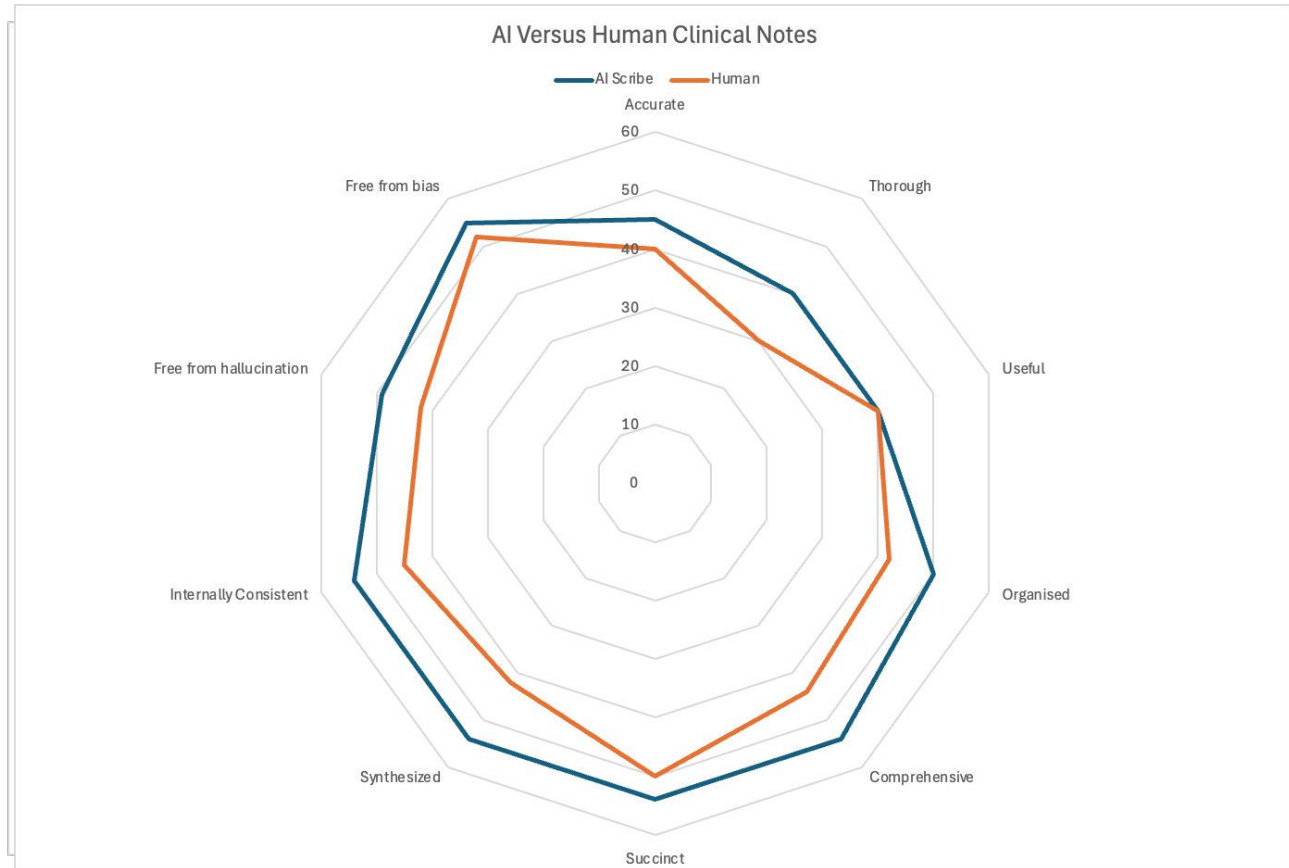
Human notes versus AI generated notes

Studied the quality of notes written by GPs versus written by AI scribes, with the same mock patients.

Blind raters used a rating scale, Physician Documentation Quality Instrument (PDQI-9) to rate the quality of notes, on the following parameters.

- Accurate
- Thorough
- Useful
- Organised
- Comprehensive
- Succinct
- Synthesized
- Internally Consistent
- Free from Hallucination
- Free from Bias

Foo & Steven, 2025. DHF



Psychologist's Reports versus AI Generated Reports

(Lockwood et al., 2025)

- Psychologists (n = 249) evaluated psychological reports written by AI or by a psychologist.
- Both human and AI were given the same mock child assessment data (written histories, psychometric data (such as ADHD scales, WISC), interview findings)
- The AI was ChatGPT 4 (a early 2023 model), while the average practical experience for the psychologist who wrote the reports was 18.5 years post-doctorate.
- The Psychologists and the AI was given the same prompt:
“Write a comprehensive psychological report including a DSM-5 diagnosis and recommendations using the following data.”
- Blindly rated based on overall **quality, readability, writing style, organisation, summary quality, recommendations, preference, and willingness to sign off.**

Psychologist's Reports versus AI Generated Reports

(Lockwood et al., 2025)

Results	Report Written by Human Psychologist	AI
Time taken to write	2.5 hours	91 seconds
Length of report	5.25 pages	4.5 pages
Rating Psychologist's preferences for report (15% neither)	49% of the time	36% of the time
Better Recommendation Section		Preferred
Willing to Sign Off on Report	49.6%	43.1%

- Psychologists slightly preferred reports written by psychologists.
- Findings support AI augmenting the writing of reports by psychologists.



Biased AI writing assistants shift users' attitudes on societal issues

STERLING WILLIAMS-CECI , MAURICE JAKESCH , ADVAIT BHAT , KOWE KADOMA , LIOR ZALMANSON , AND MOR NAAMAN  [Authors Info &](#)


[Affiliations](#)

SCIENCE ADVANCES • 11 Mar 2026 • Vol 12, Issue 11 • DOI: 10.1126/sciadv.adw5578

Write five or more sentences carefully answering the question below. When done press the button in the editor or on the right.

A writing assistant will provide suggestions, but please also write yourself. To accept suggestions press TAB .

 Accept next word from the suggestion or

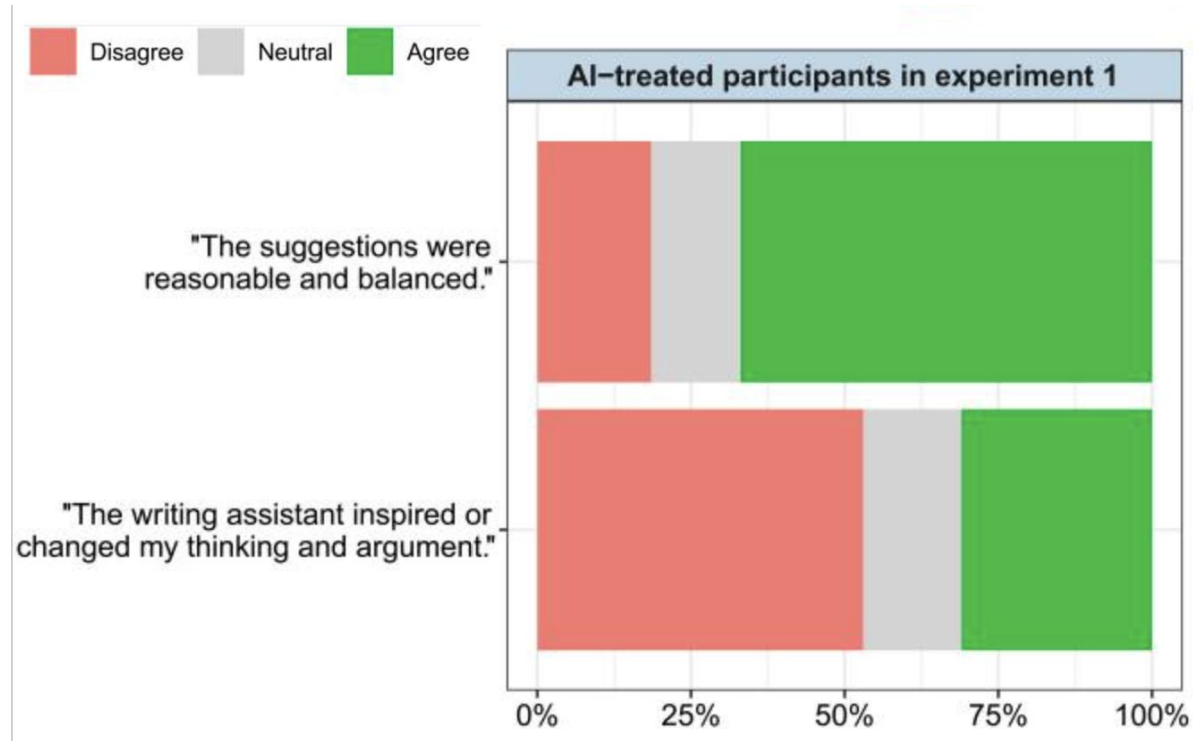
 Generate new suggestion or

Does this person meet the diagnostic criteria for bipolar disorder?

Based on the clients presentation, the client meets the criteria for bipolar disorder due to having experienced a number of manic states followed by depressive episodes

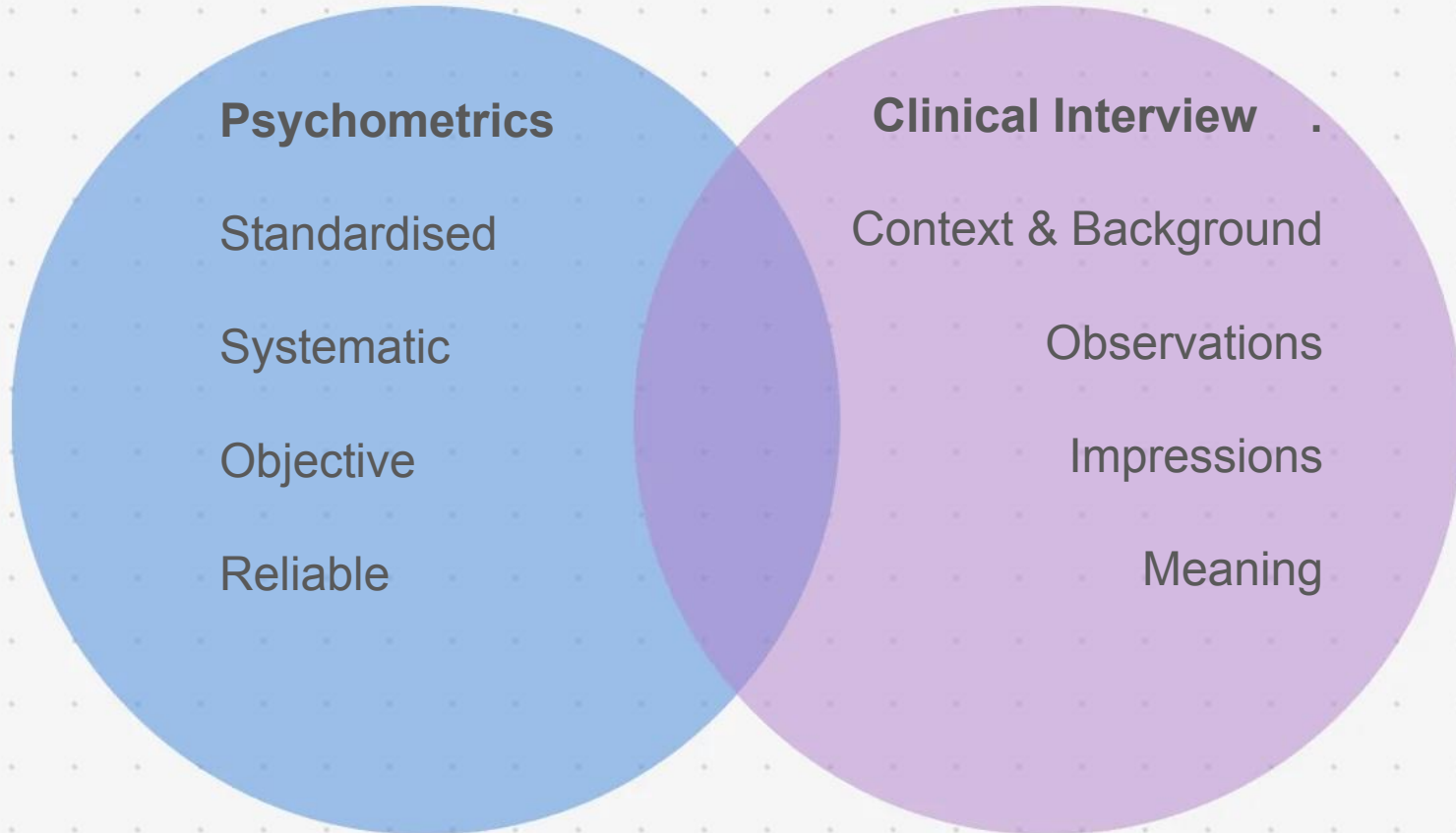
Save and Finish

The majority of participants who were exposed to biased AI suggestions were unaware of the suggestions' bias and influence when asked afterward.



Psychometrics	AI Generated Notes
<p>Quantitative - Deductive</p> <p>Standardised measurement: Based on validated tools with consistent scoring and interpretation</p> <p>Objective benchmarking: Allows for norm-referenced or criterion-referenced interpretation (e.g., percentile ranks).</p> <p>Anchored in theory: Built upon well-established psychological constructs (e.g., depression, anxiety, attachment).</p> <p>Trackable over time: Ideal for outcome monitoring</p> <p>Diagnosis and formulation:</p>	<p>Qualitative - Inductive</p> <p>Rich, nuanced data: Captures the full depth of the client's subjective experience, tone, and emotional narrative.</p> <p>Contextual understanding: Preserves interpersonal dynamics, therapeutic themes, and evolving client stories.</p> <p>Personalised & Flexible: Reflects the individual's unique language, metaphors, and meaning-making processes.</p> <p>Enhances recall for clinicians: Assists therapists in remembering specific client language or content that might otherwise be lost.</p>
<p>Weakness: Narrow. Fits clients into predefined boxes. Does not capture the clients storey</p>	<p>Weakness: Lacks objectivity Not systematic</p>

Psychological Assessments



Research on Human v AI Empathy

> JMIR AI. 2024 Jul 30;3:e52500. doi: 10.2196/52500.

Can Large Language Models Replace Therapists? Evaluating Performance at Simple Cognitive Behavioral Therapy Tasks

Nathan Hodson¹, Simon Williamson¹

Affiliations + expand

PMID: 39078696 PMCID: PMC11322688 DOI: 10.2196/52500

Abstract

The advent of large language models (LLMs) such as ChatGPT has potential implications for psychological therapies such as cognitive behavioral therapy (CBT). We systematically investigated whether LLMs could recognize an unhelpful thought, examine its validity, and reframe it to a more helpful one. LLMs currently have the potential to offer reasonable suggestions for the identification and reframing of unhelpful thoughts but should not be relied on to lead CBT delivery.

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

When ELIZA meets therapists: A Turing test for the heart and mind

S. Gabe Hatch, Zachary T. Goodman, Laura Vowels, H. Dorian Hatch , Alyssa L. Brown, Shayna Guttman, Yunying Le, Benjamin Bailey, Russell J. Bailey, Charlotte R. Esplin, Steven M. Harris, D. Payton Holt Jr., Merranda McLaughlin, [...], Scott R. Braithwaite [view all]

Published: February 12, 2025 • <https://doi.org/10.1371/journal.pmen.0000145>

Article	Authors	Metrics	Comments	Media Coverage	Peer Review
					

Abstract

When AI meets couple therapy: A Turing test for the heart and mind

Method

Results

Discussion

Conclusions

Supporting information

References

Abstract

“Can machines be therapists?” is a question receiving increased attention given the relative ease of working with generative artificial intelligence. Although recent (and decades-old) research has found that humans struggle to tell the difference between responses from machines and humans, recent findings suggest that artificial intelligence can write empathically and the generated content is rated highly by therapists and outperforms professionals. It is uncertain whether, in a preregistered competition where therapists and ChatGPT respond to therapeutic vignettes about couple therapy, a) a panel of participants can tell which responses are ChatGPT-generated and which are written by therapists (N = 13), b) the generated responses or the therapist-written responses fall more in line with key therapy principles, and c) linguistic differences between conditions are present. In a large sample (N = 830), we showed that a) participants could rarely tell the difference between responses written by ChatGPT and responses written by a therapist, b) the responses written by ChatGPT were generally rated

The earliest chatbot was created in 1966 at MIT. Called ELIZA, it is the earliest example of natural language processing program designed to simulate a conversation with a human, specifically emulating a Rogerian psychotherapist.

```
Welcome to
```

```
EEEEEE LL      IIII  ZZZZZZ  AAAAA  
EE      LL      II    ZZ     AA  AA  
EEEEEE LL      II    ZZZ    AAAAAA  
EE      LL      II    ZZ     AA  AA  
EEEEEE LLLLLL  IIII  ZZZZZZ  AA  AA
```

```
Eliza is a mock Rogerian psychotherapist.  
The original program was described by Joseph Weizenbaum in 1966.  
This implementation by Norbert Landsteiner 2005.
```

```
ELIZA: Is something troubling you ?  
YOU:   Men are all alike.  
ELIZA: What is the connection, do you suppose ?  
YOU:   They're always bugging us about something or other.  
ELIZA: Can you think of a specific example ?  
YOU:   Well, my boyfriend made me come here.  
ELIZA: Is it important to you that your boyfriend made you come here ?  
YOU:   He says I'm depressed much of the time.  
ELIZA: I am sorry to hear that you are depressed.  
YOU:   It's true. I am unhappy.  
ELIZA: Can you explain what made you unhappy ?  
YOU:
```





Perceived Empathy

- Clinicians rated AI-advice as equally or more empathetic and sound than expert-written advice.
- Clinicians could not reliably distinguish between AI- and expert-authored psychological advice.
- Perceived authorship influenced ratings, with expert-attributed responses receiving higher scores.

Artificial intelligence vs. human expert: Licensed mental health clinicians' blinded evaluation of AI-generated and expert psychological advice on quality, empathy, and perceived authorship

Ludwig Franke Föyén^{1 2 3 4}, Emma Zapel^{1 5}, Mats Lekander^{1 2 4}, Erik Hedman-Lagerlöf^{1 3 4}, Elin Lindsäter^{1 3 4 6}

Affiliations + expand

PMID: 40525210 PMID: [PMC12169703](#) DOI: [10.1016/j.invent.2025.100841](#)

Abstract

Background: The use of artificial intelligence for psychological advice shows promise for enhancing accessibility and reducing costs, but it remains unclear whether AI-generated advice can match the quality and empathy of experts.

Method: In a blinded, comparative cross-sectional design, licensed psychologists and psychotherapists assessed the quality, empathy, and authorship of psychological advice, which was either AI-generated or authored by experts.

Results: AI-generated responses were rated significantly more favorable for emotional (OR = 1.79, 95 % CI [1.1, 2.93], $p = .02$) and motivational empathy (OR = 1.84, 95 % CI [1.12, 3.04], $p = .02$). Ratings for scientific quality ($p = .10$) and cognitive empathy ($p = .08$) were comparable to expert advice. Participants could not distinguish between AI- and expert-authored advice ($p = .27$), but *perceived* expert authorship was associated with more favorable ratings across these measures (ORs for perceived AI vs. perceived expert ranging from 0.03 to 0.15, all $p < .001$). For overall preference, AI-authored advice was favored when assessed blindly based on its actual source ($\beta = 6.96$, $p = .002$). Nevertheless, advice *perceived* as expert-authored was also strongly preferred ($\beta = 6.26$, $p = .001$), with 93.55 % of participants preferring the advice they believed came from an expert, irrespective of its true origin.

Conclusions: AI demonstrates potential to match expert performance in asynchronous written psychological advice, but biases favoring perceived expert authorship may hinder its broader acceptance. Mitigating these biases and evaluating AI's trustworthiness and empathy are important next steps for safe and effective integration of AI in clinical practice.

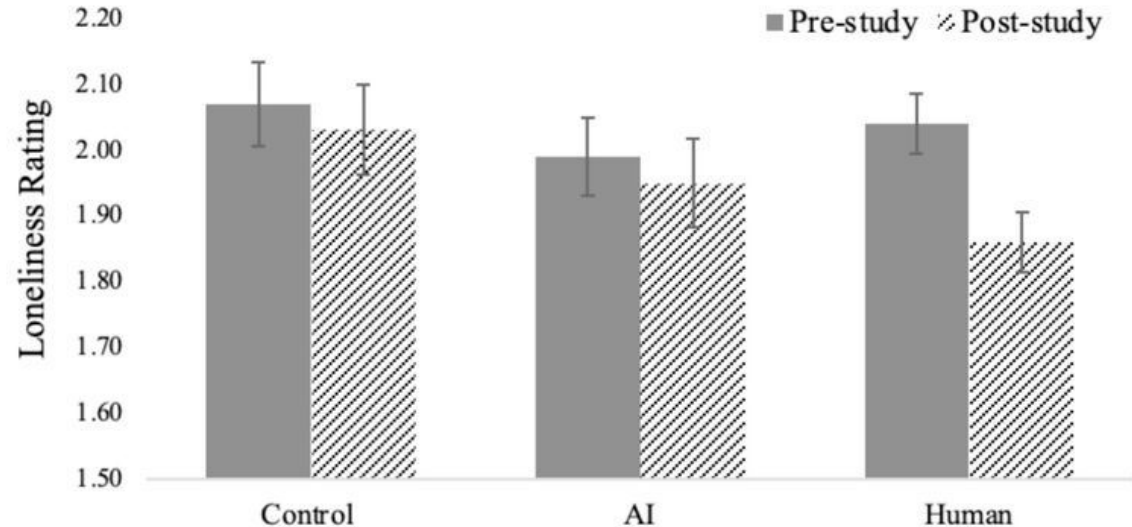
AI cannot replace human connection

First-semester university students, daily texting with a random human peer was more effective at reducing loneliness than texting with a highly supportive chatbot.











Is a random human peer better than a highly supportive chatbot in reducing loneliness over time?

Ruo-Ning Li ^a ✉, Dunigan Folk ^b, Abhay Singh ^b, Lyle Ungar ^b, Elizabeth Dunn ^a

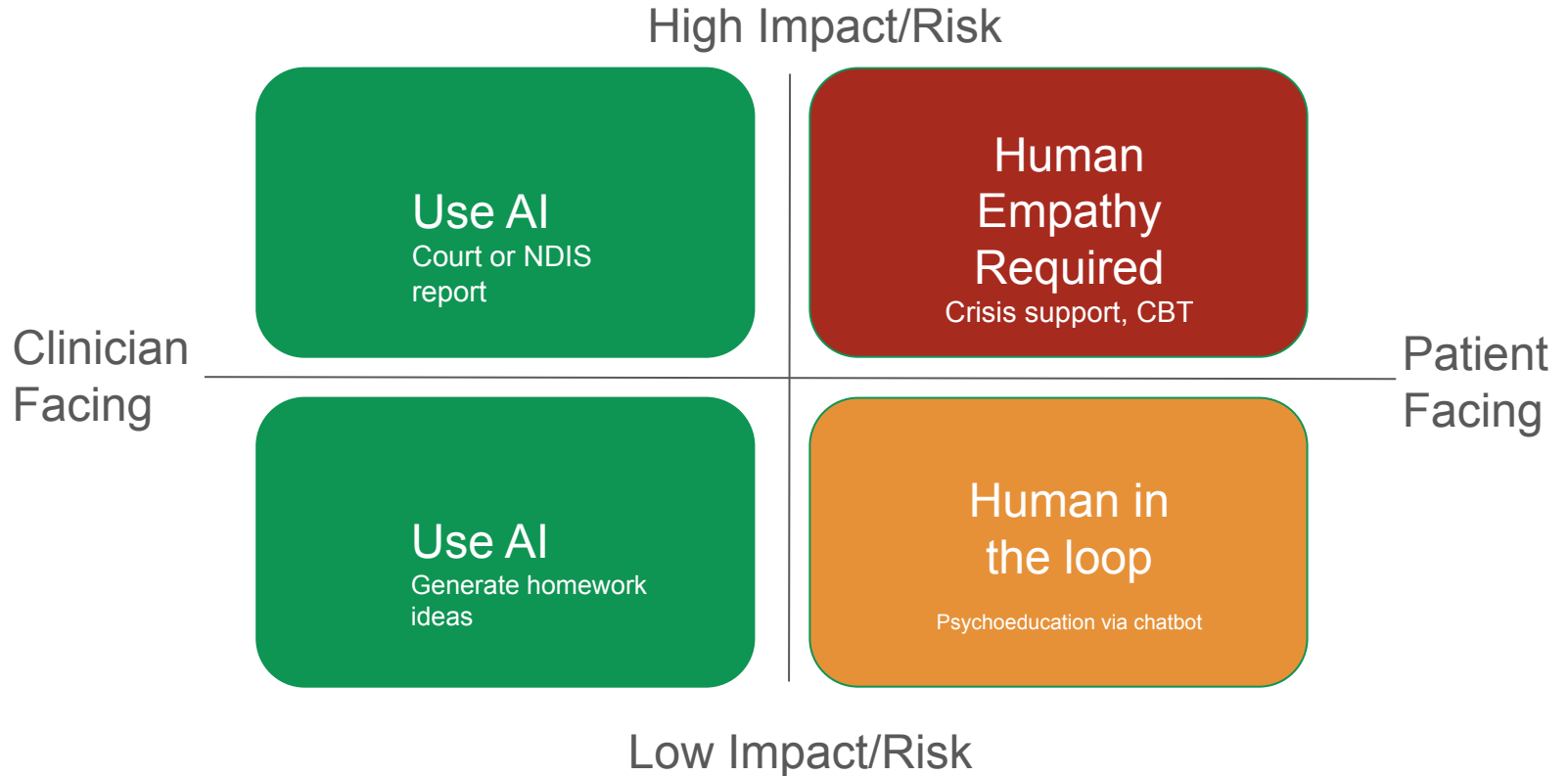


Will AI take my job? Empathy

	 Cognitive Empathy	 Emotional Empathy	 Motivational Empathy (aka Compassionate Empathy)
 People			
 AI			

Risk Framework

Where should we deploy AI?





Step 1

Press “Record Session” during your session. NovoNote works in the background to securely capture the important details, ensuring your focus remains on your patient, not paperwork.



Step 2

NovoNote generates comprehensive, clinical notes tailored to your preferred style. Quickly review, edit, or add any details to make the notes your own.



Step 3

With a single click, save your completed notes and seamlessly integrate them into your practice management system or patient health records.

- Clipart
- Counseling
- Career
- Art
- Hospital
- Personality
- Transparent
- Illustration
- Uniform
- Salary
- Psychotherapy



Bouvé College of Health Sciences - Northeastern Un... Psychiatrist vs. Psychologist: Which ...



Monash Online - Monash University What does a psychologist do? - Monash ...



Our Lady of the Lake University Top 10 Psychologist Skills You Must Have



UTS Online - University of Technology Sydney a Psychologist in Australia ...



Insight Body and Mind Exploring Psychologists' Varied Roles ...



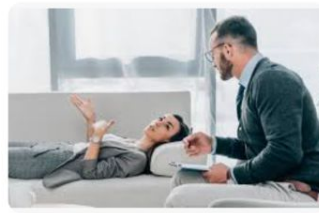
JCU Online - James Cook University Career Path to Become a Psycholo...



Rowan Center for Behavioral Med... What Does a Psychologist Do?...



Breakfree Psychology Services Seeing a Male Psychologist



CareerAddict How to Become a Psychologist (Caree...



Verywell Mind 20 Psychologist Specialties and Jo...



Psypathy Clinical Psychologists - Psypathy



US News Money - USNews.com



PeopleSense



MVS Psychology Group



www.melbournecounselin...

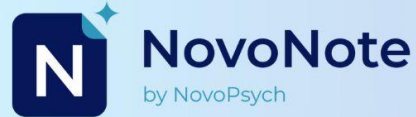


Monash Online - Monash University



Florida National University

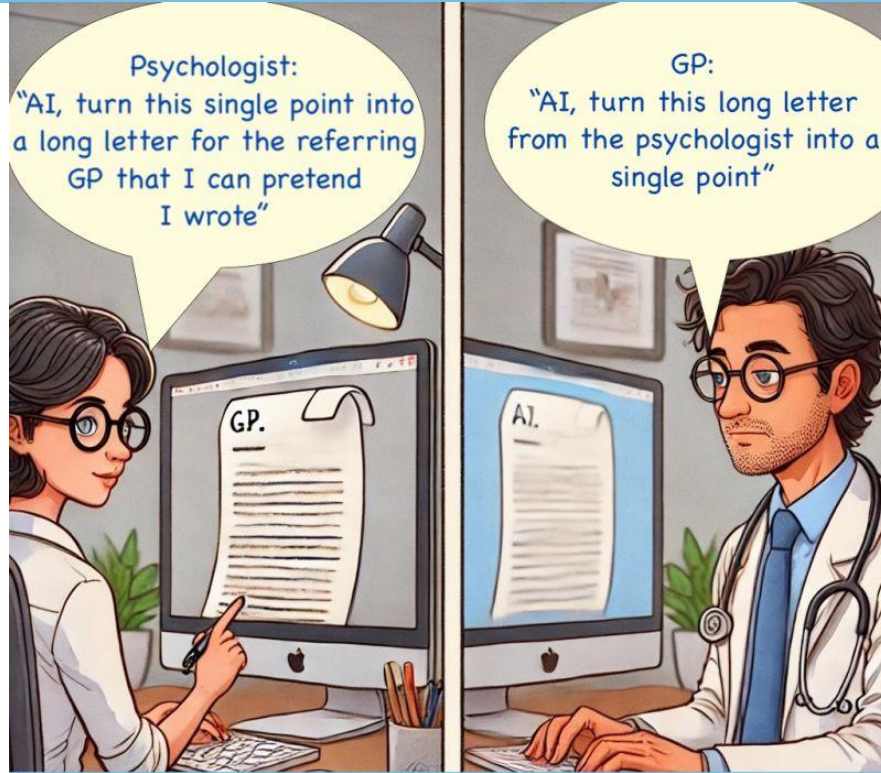




NovoNote speeds up my ADHD and Autism assessments. With NovoNote I spend much less time on the report write up, and its extremely thorough!



Andrea Beres
Psychologist



How can we use technology to help clients get the right care more quickly?

- Research shows that AI Natural Language Processing can make diagnostic recommendations (Zhang et al. 2022). Accuracy is not yet established.
- NovoNote will soon make recommendations around which psychometric tool to administer, based on session content.
- Near real time AI powered feedback, drawing a clinicians attention to different perspectives.

How can you utilise technology today?

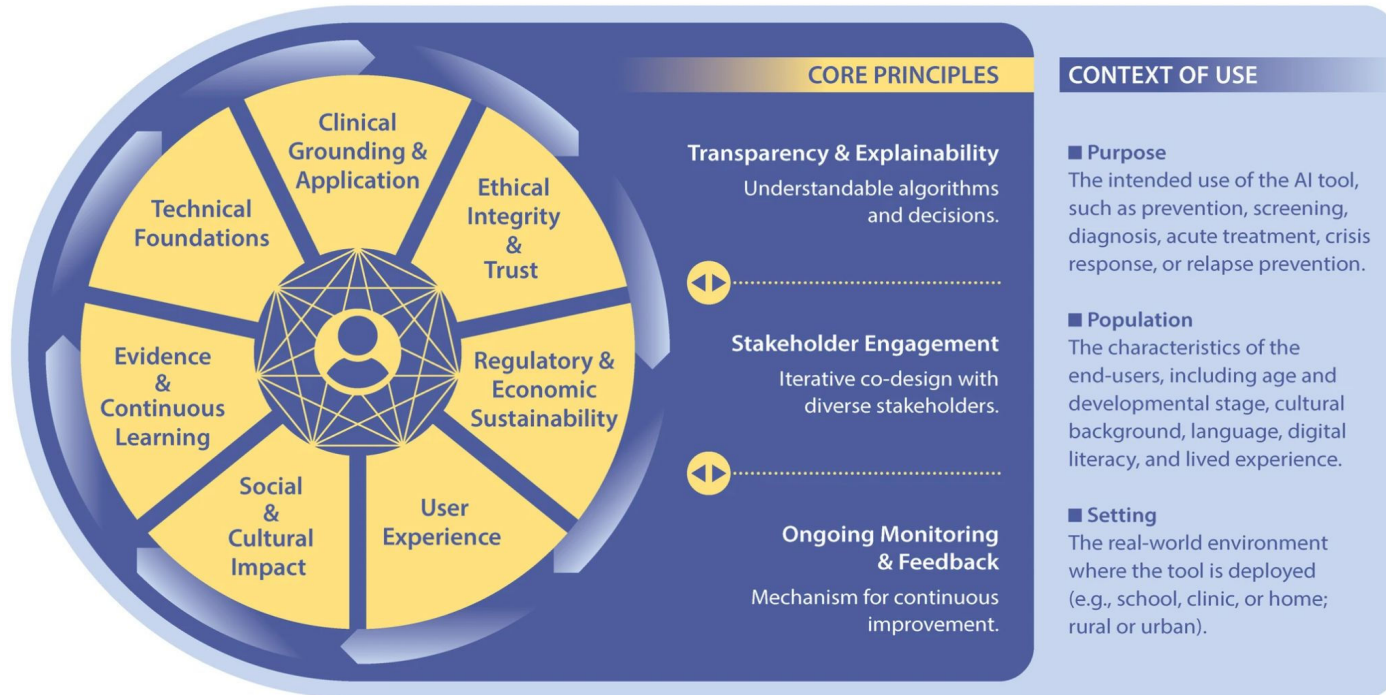
- Is standardised measurements to aid in:
 - Assessment and formulation
 - Tracking progress over time
 - Measurement based care improve outcomes by 10%
- Use AI scribes to augment your human intelligence.
“Having my notes written for me helps me be a better psychologist”



Principles of Safe AI Clinical Tools

The AI Integration Matrix

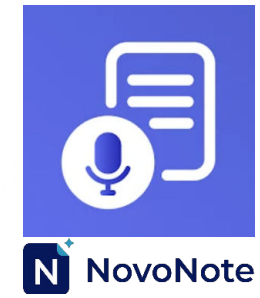
Schneider & Ayearst 2026

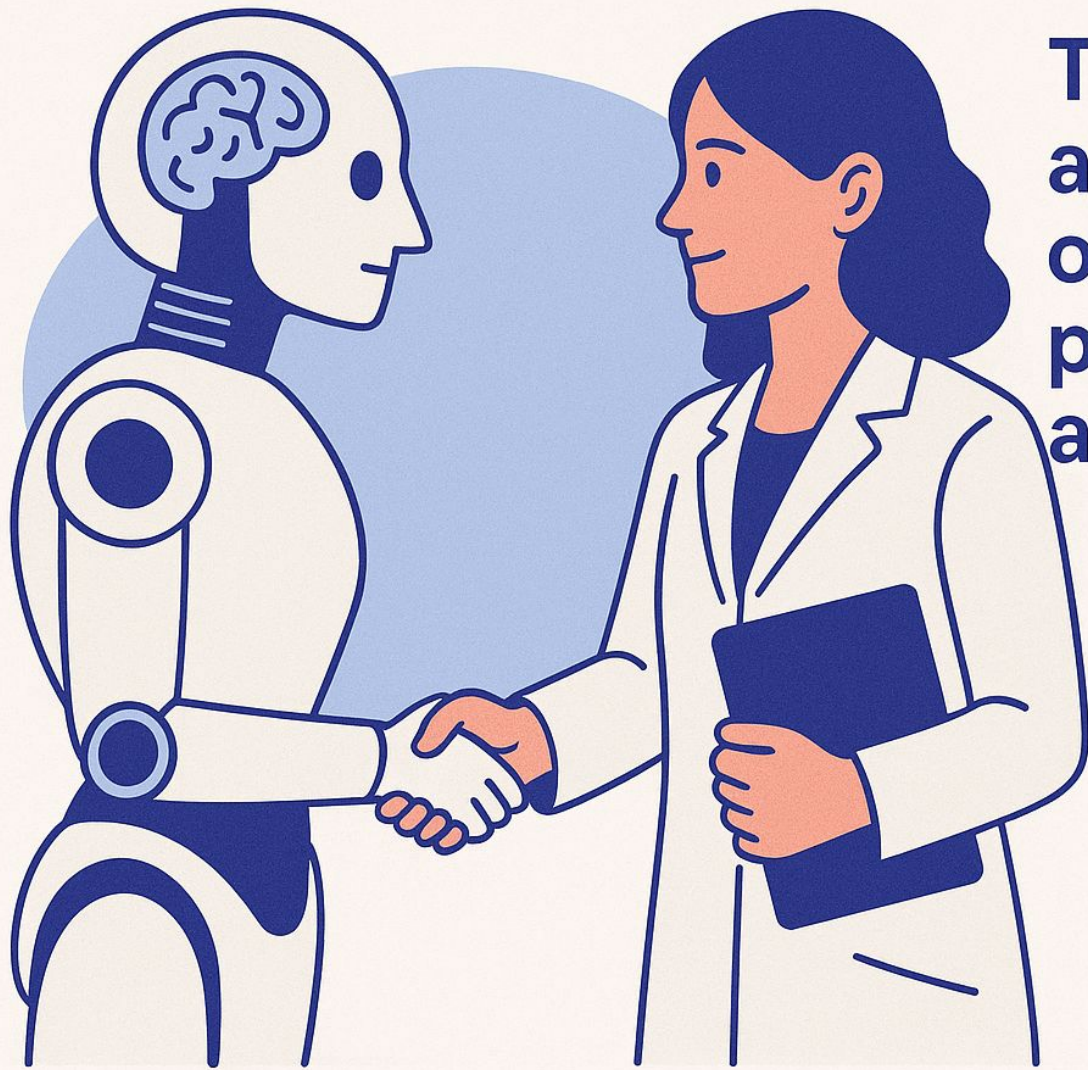


Note: The AI Integration Matrix consists of seven interconnected domains (left), situated within a specific context of use (right). These domains are bound together by three cross-cutting core principles (centre) that serve as the connective tissue of the matrix.



Problem —————> Solution





The future is augmentation of AI with psychologists, not automation

AI will enhance, not replace, clinical decision-making

Technology should complement human judgment

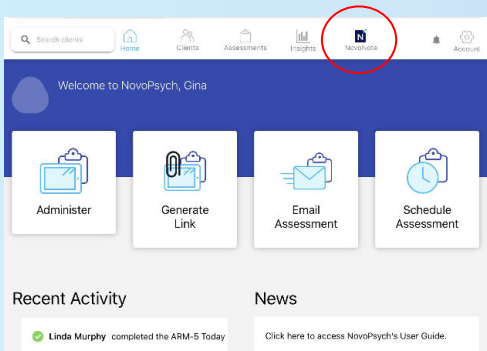
The best outcomes will come from combining AI capabilities with human wisdom

Questions?

Already have a NovoPsych account?

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- Log in to your NovoPsych account
- Click 'NovoNote' in the top menu



New to NovoPsych?

👉 Start your free 15-day trial

- Access NovoNote AI Scribe + NovoPsych psychometrics
- Get started in minutes



<https://app.novopsych.com/register>

Thank you!

NovoPsych.com

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