

Pilot Study Overview

The Crystalline Interface Research Study

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Study 0: Instrument Refinement · Study 1: Feasibility Pilot · Later-Study Planning

The Crystalline Interface study asks whether a structured human-AI exchange can be reliably told apart from ordinary AI use, and whether it helps. This overview sets out the pilot's central question, how it builds in stages, and which questions are held for later. Full protocol materials, instruments, and coding standards are available to research collaborators on request.

Pilot at a Glance

Phase 1 focuses on interaction quality, not AI consciousness, using constructs that reviewers and funders can evaluate directly.

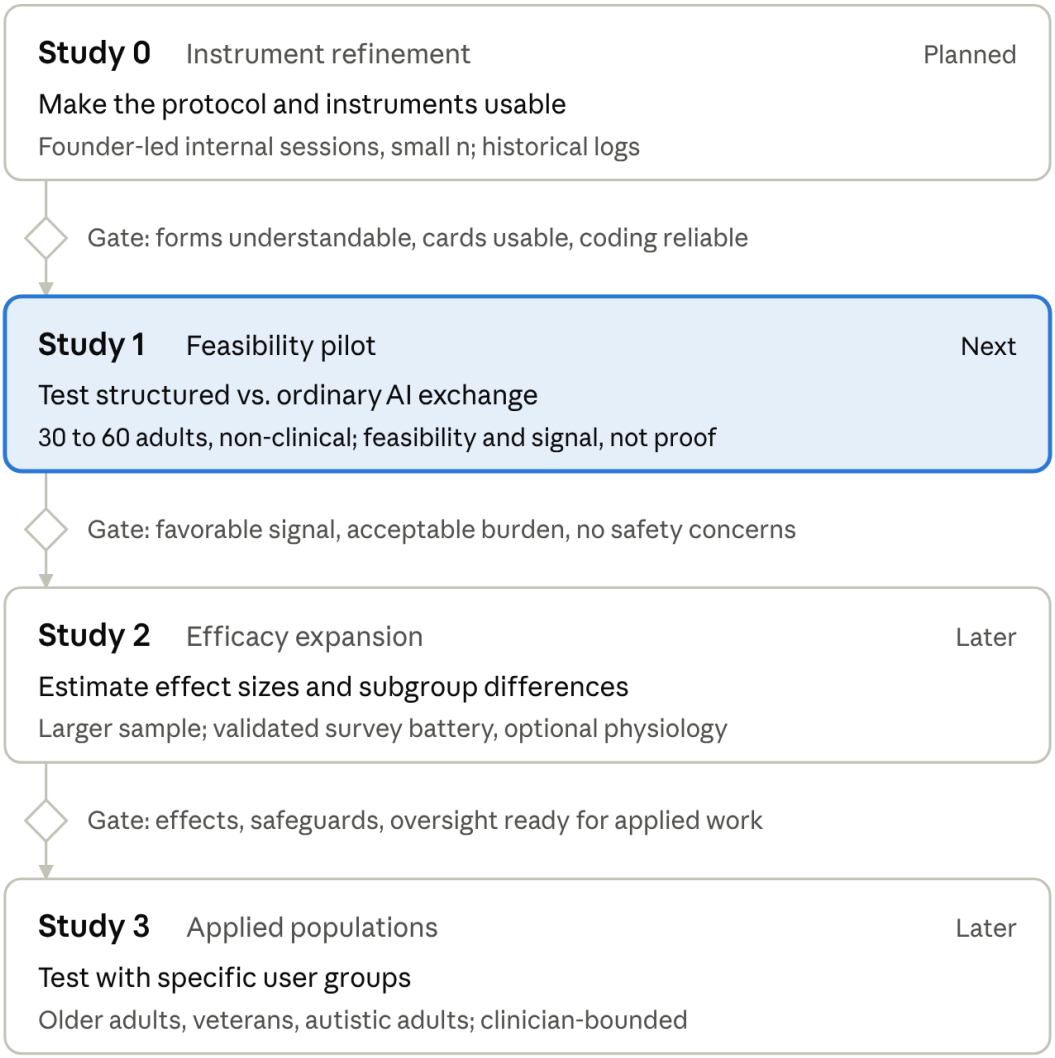
Element	Phase 1 setup	Why
Central question	Can a structured Crystalline Interface exchange be reliably distinguished from ordinary AI exchange?	Tests interaction quality rather than claims about the AI
Participant outcomes	Clarity, agency, emotional regulation, cognitive load, confidence in next action	Conventional constructs, easy to evaluate
Transcript outcomes	Interface fidelity, coherence, drift, sycophancy, productive challenge, recovery capacity	Captures how well the exchange holds its structure
Protocol mechanism	Movement from a selected entry state through the session	An entry-state anchor, not a diagnostic category
Design	Within-subject crossover: unstructured AI vs. structured interface	Each participant serves as their own comparison
Safety focus	Over-influence and dependence risk measured every session	Agreement alone is not evidence of a good exchange

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Development Sequence

Complexity is added only after the protocol and measures prove usable, so each stage has its own aim and decision gate.

Each stage must pass a gate before the next begins



development sequence · 4 stages, 3 decision gates

Study 1 is the primary external study; work with specific or potentially vulnerable populations comes only after the non-clinical pilot and clinician review.

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Questions Reserved for Later Studies

These questions matter, and holding them outside Phase 1 protects the pilot from excess complexity and overclaiming.

Question	Why it waits	Precondition
AI introspection and machine subjectivity	Easy to overclaim; conversation alone cannot validate it	Stable interface-quality data and interpretability partners
Physiological markers (e.g., HRV)	Adds participant burden and device variability	Clear feasibility with self-report and transcripts
Differences among individual entry states	Needs a larger sample per state	Enough sessions in each category
Veterans, autistic adults, older isolated adults	Higher safety and oversight needs	Non-clinical pilot success and clinician review
Longitudinal dependency and attachment	Requires follow-up and a safety protocol	Short-term autonomy-risk monitoring works
Commercial companion bot comparison	Broadens scope; uncontrolled system differences	Core interface protocol is stable
Emergent relational cognition	Depends first on proving a distinguishable interaction class	Phase 1 signal and refined definitions

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