Homepage CHAI-Project (Collective Human-Artificial Intelligence Project)

RFI Response

https://www.templetonworldcharity.org/rfi

BACKGROUND

Templeton World Charity Foundation has launched a new strategy to support new scientific research on human flourishing and to translate related discoveries into practical tools. Over the next five years, the Foundation will support a range of projects across three distinct stages: discovery, development, and launch. We hope that this commitment will lead to the development of innovative solutions and the launch of new practices that make a lasting impact on human flourishing.

You can find more information about our new strategy here.

*Before picking a focal point for the **discovery** stage of this five-year strategy, we plan to gather new ideas through an open-submission process. To achieve this, we've issued this **Request For Ideas** (RFI) to gather input as broadly as possible. We invite researchers across disciplines to participate in an initial phase of idea generation and development. Ideas selected will be used by the Foundation to shape its priorities for scientific discovery. This has the potential to lead to two new initiatives, each containing a portfolio of individual grants. We seek bold ideas and rigorous experiments that use new conceptual frameworks to move past age-old debates and lead to significant breakthroughs.*

We expect to invest approximately $40,000,000 through the Grand Challenges for Human Flourishing. Priority will go to interdisciplinary scientific research on humanity's cognitive, affective, social, and spiritual well-being.

We are particularly interested in capacities that can be enhanced to promote human flourishing. We are also committed to the use of open science practices, such as the preregistration of hypotheses, replication studies, and data sharing.

TITLE

CHAI-Project (Collective Human-Artificial Intelligence Project)

GOAL

What goal will your idea bring us closer to? How does this goal fit in the scope of the Foundation's strategy?

The CHAI-Project over-arching goal is to promote human flourishing via 'Collective Human-Artificial Intelligence'. This combines the technical 'smart' potential of digital AI (artificial intellligence), with the deliberative 'wiser' potential for CHI ('collective human intelligence'). The CHAI Project aims for breakthrough

insights on how collective intelligence can work in social, economic, ecological, political and cultural systems: and on how to design practical pathways for the transformation of these systems. Such ambitions push the normal boundaries of science and policy towards:

• Deeper layers of value and logic, which combine the social, economic, ecological, political and cultural domains of collective intelligence;
• Wider communities of learning and co-production, on the principles of inclusion and empowerment, especially for the most excluded and vulnerable;
• Further horizons for transformation, applying the CHAI principles to collective institutions, (organizations, markets, policies etc), to enable flourishing at all levels.

This agenda calls on the UN Sustainable Development Goals, as the context for practical objectives in our three pilot sectors:
- Resilience building for physical settlements, amidst social change / climate change;
- Human resource building for local economies, amidst economic / technology change;
- Capacity building for health, education, democratic governance, amidst social / political change.

OPPORTUNITY

Think of what others have done in this area. Drawing from that, how can your idea be described as a new opportunity?

While smart technologies and digital education race ahead, it seems that gaps in the social fabric also increase. Likewise social initiatives such as emotional intelligence, often bypass the structural / collective conditions which can enable or disable human flourishing.

We now see a whole new space of opportunity. In each of our pilot sectors of cities / economies / governance, there is potential opportunity and/or disruption from artificial intelligence (AI). But to fully meet human needs, this needs to be combined as a 'Collective Human Artificial Intelligence' (CHAI), not as a blueprint, more as a space for creative thinking.

ROADBLOCKS

What challenges could hinder the opportunity mentioned above?

Three types of challenges / roadblocks are likely to emerge:

a) Rational silo thinking: while AI systems are designed around apparently practical business models, the assumptions and ethical implications are often invisible and challenging to resolve.
b) Accelerating pace of innovation in AI, and its countless applications, with potentially existential risks and/or benefits to human flourishing.
c) Polarization of public agendas, such as health or education services, where issues beyond the directly functional may be controversial and politically charged.

The Project aims to manage these by careful scoping, risk management, and experimental spaces such as scenario methods.

BREAKTHROUGHS NEEDED

What projects or activities would be needed to overcome the Roadblocks? Why do you think such breakthroughs will be possible?

The CHAI-Project overall breakthrough is to analyse, demonstrate and test a 'collective human-artificial intelligence', which combines the transformative potential of digital AI, with the deliberative-creative potential for 'CHI' (collective human intelligence).

Just as the Human Genome Project and earth system models work on complex biological or climate systems, the CHAI-Project works on 'deeper complexity' of cognitive systems. This includes empirical-analytic studies and design / innovation programs, in three main activities, (responding to the Call):

- Experimental testing of collective level flourishing: social, economic, political, cultural, ethical, mythological:
- Neuro-scientific developmental analysis: a cycle of collective learning, cogitation, co-creation, co-production;
- Enhancement of cognitive capacities with 'collective cultural co-evolution'.

Each of the CHAI programs defines its breakthrough in specific terms.

a) Sectoral programs on cities, economies and governance; practical systems design based on CHAI principles. Building on grassroots initiatives such as social finance, we now aim for systematic, evidence-based, upscaling and cross-transfer. Results will be tracked on the innovation curve of development, demonstration and deployment.
b) Horizontal programs: apply the methods, tools, analytics and informatics, on the case studies and their transformative potential. The breakthrough insights will be in how to apply CHAI-type human-technical combinations of these methods and tools.

COST

What projects or activities could be carried out with the first $5M, $10M, and $20M?

We envision three levels of engagement with this agenda (with current UK costings, $1m covers approximately 5 person-years with overheads etc).
- 8 posts for 3 years ($5m): initial pilot sectors & pilot analytic programs;
- 10 posts for 5 years ($10m): initial pilot sectors with full range of analytic programs;
- 10 posts for 10 years ($20m): full sector program, with full range of analytic programs: regional, national, global.

We aim to match these inputs from other partners, with other research funding from public and private

sectors, within an extended global network / community.

TIMELINE

What project or activity milestones could be expected in the first 3 years, 5 years, and 10 years?

• Phase I (Y3): basic mapping of CHAI agenda in pilot sectors
• Phase II (Y5): Full mapping of CHAI agenda in pilot sectors, with design of pilot pathways
• Phase III (Y10): Full mapping of CHAI agenda in full sectors, with design of full pathways with demonstration / testing.

Each phase contains one or more '4-S' cognitive cycles:
- system mapping, with relational thinking to focus on baselines;
- scenario mapping, with divergent thinking & focus on futures;
- synergy mapping, with emergent thinking & focus on new ideas;
- strategy mapping, with convergent thinking & focus on action;

KEY INDICATORS OF SUCCESS

How will you assess the successes and/or failures of your idea at years 3, 5, and 10?

- The performance indicators are based on a combination of formative / summative evaluation, including peer review, expert / user panels, with KPI benchmarks on technical performance of the mapping and the pilot system designs:
  • Phase I (Y3): evaluation of basic mapping of CHAI combinations in pilot sectors;
  • Phase II (Y5): evaluation of full mapping of CHAI in pilot sectors with pathway design;
  • Phase III (Y10): evaluation of full mapping of CHAI in full sectors with pathway design, demonstration and performance testing.

EXCLUSION CRITERIA

What projects or activities in this area could be unproductive or counterproductive? What should we avoid?

Some societal challenges are inevitably problematic for consensus building or rational-objective research.

At the collective level, the structural inequities of a capitalist society are clearly in the frame, but with continuing ideological debate which might impede practical pathways.

At individual levels, theological or aesthetic experiences are challenging for any rational-objective investigation. To explore such spaces we use a wide range of visual, narrative or experiential methods, however where some issues are too controversial or intractable, we draw working boundaries. The challenge is then the inter-connection of individual with collective levels, to be addressed by cognitive visual thinking.

ADDITIONAL INFORMATION

This section is optional. We suggest including a technical summary for expert reviewers, 5 references (just DOI), and 5 collaborators who could advise or run projects to execute this idea.

a) Theoretical foundations:

• Collective intelligence: organizational learning, formal / tacit knowledge, cognitive emergence, synergistic co-evolution (1)

• Human flourishing / livelihoods: hierarchy of needs / aspirations, in developmental organizations, communities: (2)

• Digital cognitive platforms: from AI-based wiki-nomics, to disruptive intermediation and surveillance capitalism (3)

• Systems of deeper complexity: cognitive emergence, transition theory, enterprise model design (4).

b) Research questions:

- How to understand the collective intelligence and cognitive emergence of communities, organizations, markets, policies?
- How does individual flourishing relate or depend on a collective level of flourishing?
- How to analyse and map combined systems of collective human-artificial intelligence?
- How to enable the collective design of more effective / equitable organizations, markets, policies?

c) Case study applications:

These may be at local / national or sector levels: each applies the synergistic toolkit of participative action-research, with cognitive systems mapping and pathway design for all STEEP+ layers (social, technical, economic, ecological, political, cultural):

• Resilience building for physical settlements, with urban expansion, climate stress, migration pressures;

• Human resource building for local economies, with restructuring, globalization, digital disruption, systemic redundancy, social livelihoods;

• Capacity building for public services and democratic governance: with socio-cultural change, economic pressures, digital intermediation;

d) Analytic approaches:

• Collective intelligence: cognitive network mapping, developmental learning, innovation systems analysis, super-intelligence existential enquiry, visual & narrative media;

• Human flourishing & livelihood: psychometric analysis, institutional analysis and design, discourse coalition analysis, cognitive dissonance & reframing;

• Digital cognitive platforms: information theory, socio-enterprise service models, value chain /constellation mapping;

• Systems of deeper complexity: synergistic methods and tools for actor mapping, scenario mapping, co-evolutionary and road-mapping: exploring systemic resilience, adaptive capacity, transformative capacity.

e) Key outcomes and applications:

Overall, the case studies demonstrate the application of the CHAI principles and synergistic methods, and point towards a potential scaling up and across to all sectors: building on practical experience, for example a synergistic low-carbon program (5). To support this the CHAI-Project will produce (online) resources, a multiplicity of knowledge and application, both specific and general:

- ‘Know-what’ – information access by topic, semantic search;
- ‘Know-who’ - communities of networking by synergy & association;

- ‘Know-where’ – spatial / localized synergies & dependencies;
- ‘Know-when’ – real time sharing, collective anticipatory intelligence;
- ‘Know-how-much’ – long-tail markets, socio-ecological value chains / constellations;

These material knowledges point towards a transformative potential:
- ‘Know-how-to’: wider forms of tacit-embedded CHAI knowledge;
- ‘Know-why’: deeper layers of CHAI logic and value, with further horizons of transformation.

Some potential collaborators and themes

• Prof. Geoff Mulgan, UCL & NESTA (UK): CHAI in digital democracy & social innovation
• Prof. Bernadka Dubicka, UOM (UK): CHAI in digital mental health & psychiatry
• Ulysses Sengupta, MSA: CHAI in complex urban systems
• Prof. Chella Rajan, IITM (India): CHAI in social institutions with food / climate stress
• Prof. Alexander Sokolov, HSE (Russia): CHAI in hyper-data analysis & cognitive mapping

References:

1) https://doi/10.1007/s13347-013-0146-3
2) www.pnas.org/cgi/doi/10.1073/pnas.1702996114
3) https://www.worldcat.org/title/life-30-being-human-in-the-age-of-artificial-intelligence/oclc/973137375
4) https://www.routledge.com/Deeper-City-Collective-Intelligence-and-the-Pathways-from-Smart-to-Wise/Ravetz/p/book/9780415628976#toc
5) https://doi.org/10.1080/00343404.2020.1813881