1. 'Coexistence'

Coexistence

- What is meant by '**coexistence**'?

- We can better understand its meaning by examining what entities have been discussed in terms of their coexistence with humanity.

- For instance, 'coexistence' has been discussed with the following entities:

  - Human-**Nature** coexistence

  - Human-**Wildlife** coexistence (or with other species)

  - Human-**Environment** coexistence

Coexistence

- On the other hand, we rarely use expressions such as "coexistence between humans and smartphones".

- Phones are primarily perceived as '**tools**', and we generally don't talk about coexisting with **tools**.

Coexistence

- Through our discussion so far, we can better understand '**coexistence**' and delve deeper into the topic: the coexistence of humans and AI.

- First of all, the fact that we are discussing "coexistence with AI" implies that we, or many of us, perceive AI to be **more than just a simple tool**

- What makes AI more than just a tool?

  - **Intelligence** (AI as a tool vs. **Intelligent thing**)

  - "We have no experience of what it's like to have **things smarter than us**." (Prof Geoffrey Hinton, 2024 Nobel Prize in Physics winner interview)
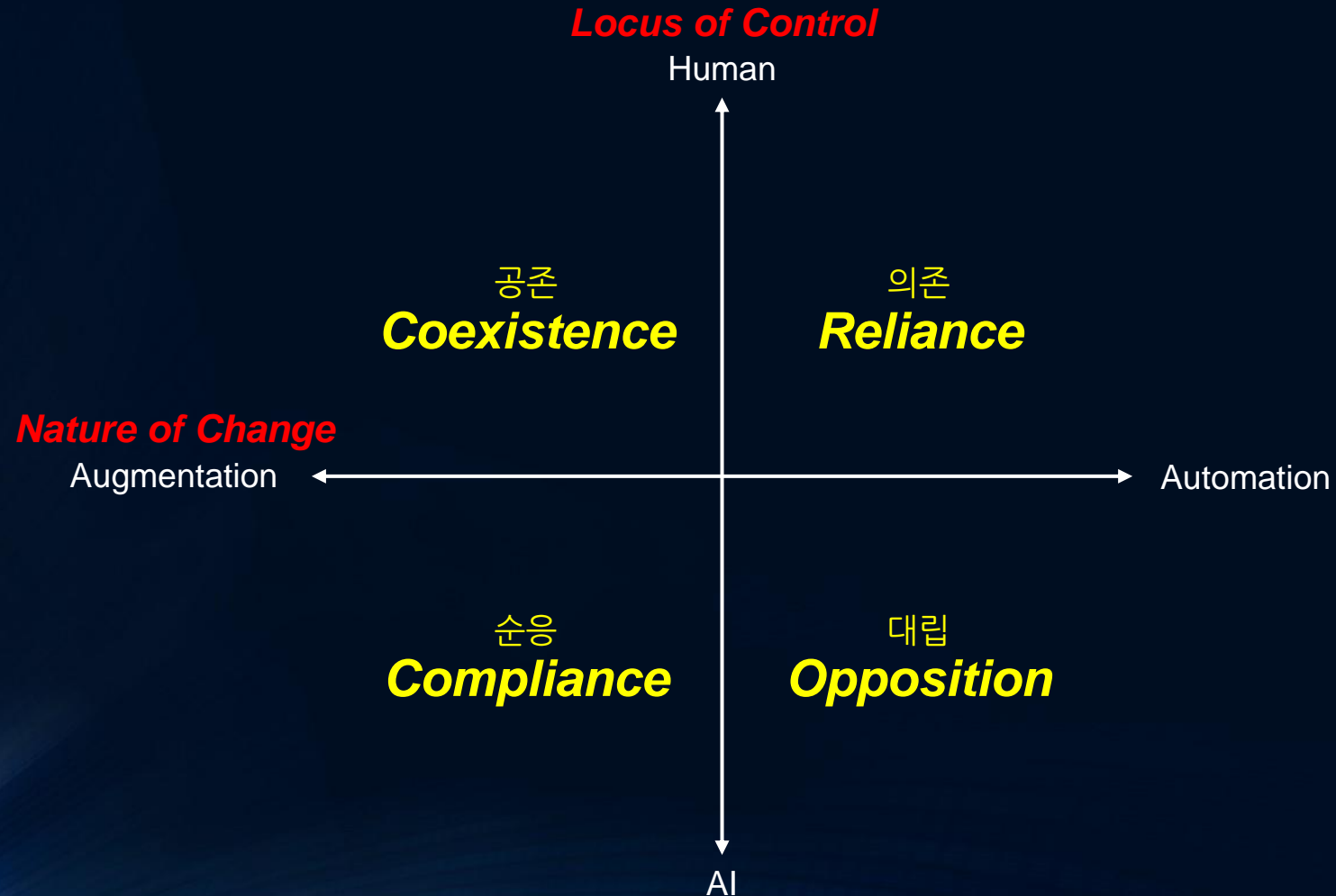
Coexistence

- Next, 'coexistence' implies more than mere existence in the same space.

- What's crucial between two coexisting entities is their **relationship** – Specifically, the dynamics of their **relationship**: the **interaction** and **mutual influence** between them.

- Therefore, to explore directions for Human-AI coexistence, we need a systematic analysis of **the relationship between humans and AI**.

2. Towards a Direction for Coexistence
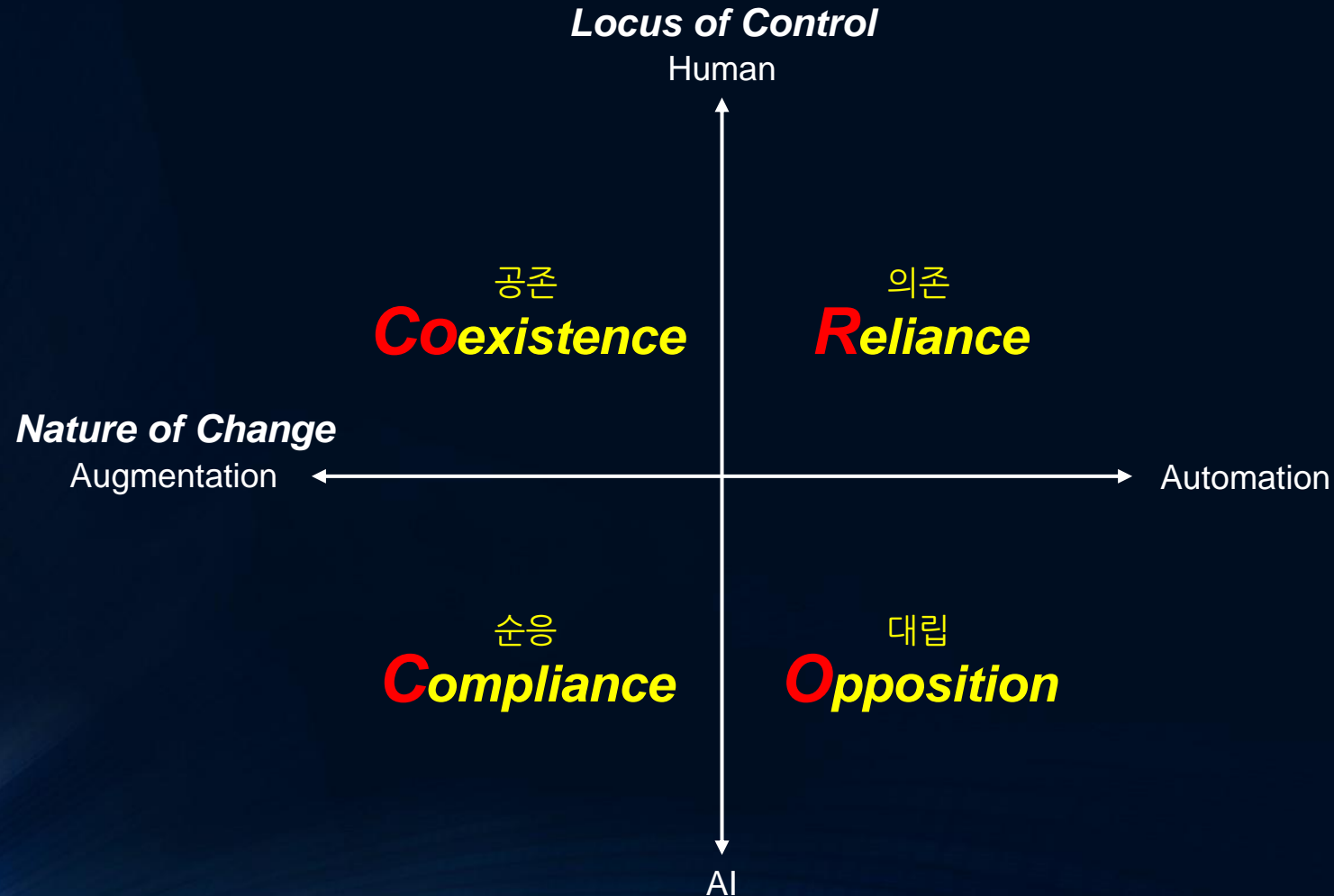(Exploring Human-AI Relationship)

Exploring Human-AI relationship

- To analyse the relationship between humans and AI, we can consider two dimensions.

(1) **Nature of Change**: the nature of impact on humans (**Augmentation** vs **Automation**)

(2) **Locus of Control**: who has the control over the A.I. (**Human** vs. **AI**)

Human-AI relationship

Locus of Control

Human

공존
Coexistence

의존
Reliance

Nature of Change

Augmentation

Automation

순응
Compliance

대립
Opposition

AI

Source: Chang's (2024) working draft

Human-AI relationship: The CoRCO framework

Locus of Control
Human

공존
Coexistence

의존
Reliance

Nature of Change
Augmentation ←   → Automation

순응
Compliance

대립
Opposition

AI

Source: Chang's (2024) working draft

Human-AI relationship: (1) Coexistence

- Humans have the control

- Human capabilities are complemented and extended by AI (i.e. **augmentation**)

Locus of Control
Human

공존
Coexistence

의존
Reliance

Nature of Change
Augmentation ← → Automation

Source: Chang's (2024) working draft

Human-AI relationship: (2) Reliance

- Humans have the control

- Human capabilities are replaced by AI (i.e. **automation**)

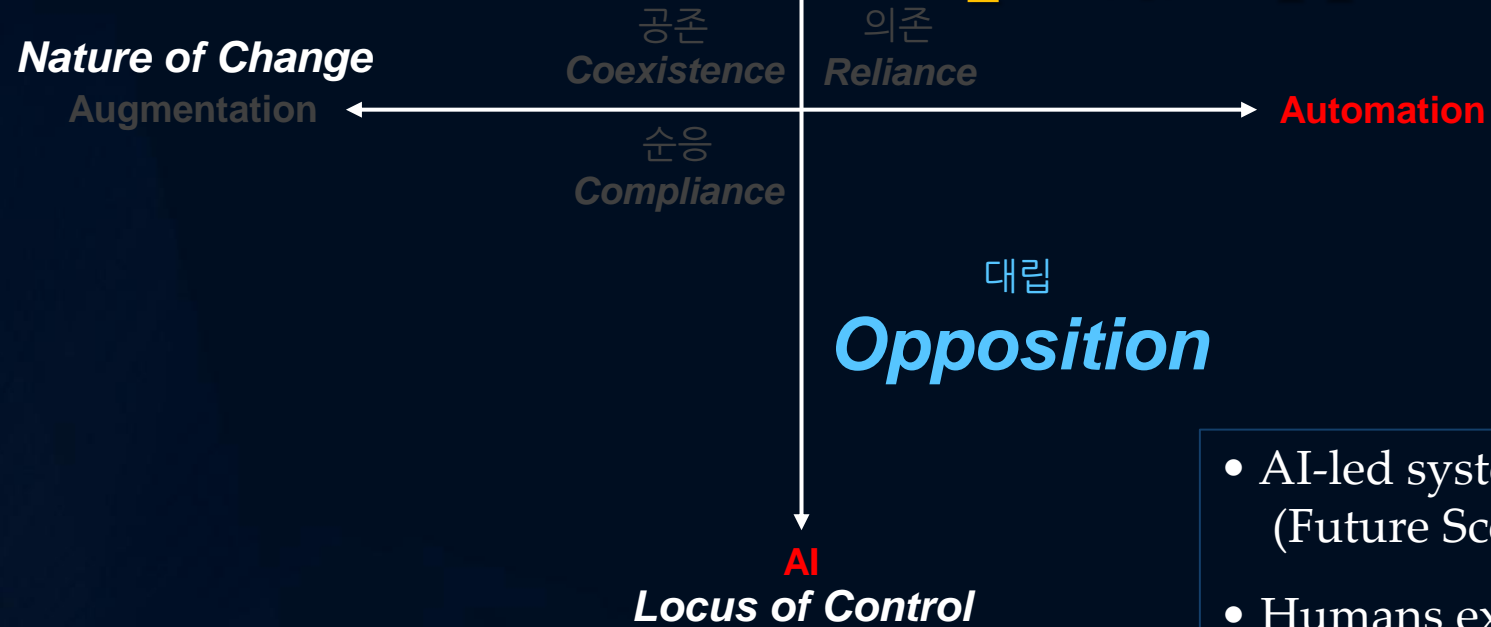- Humans reliant on AI, sometimes too dependent

Locus of Control
Human

의존
Reliance

공존
Coexistence

Nature of Change
Augmentation

Automation
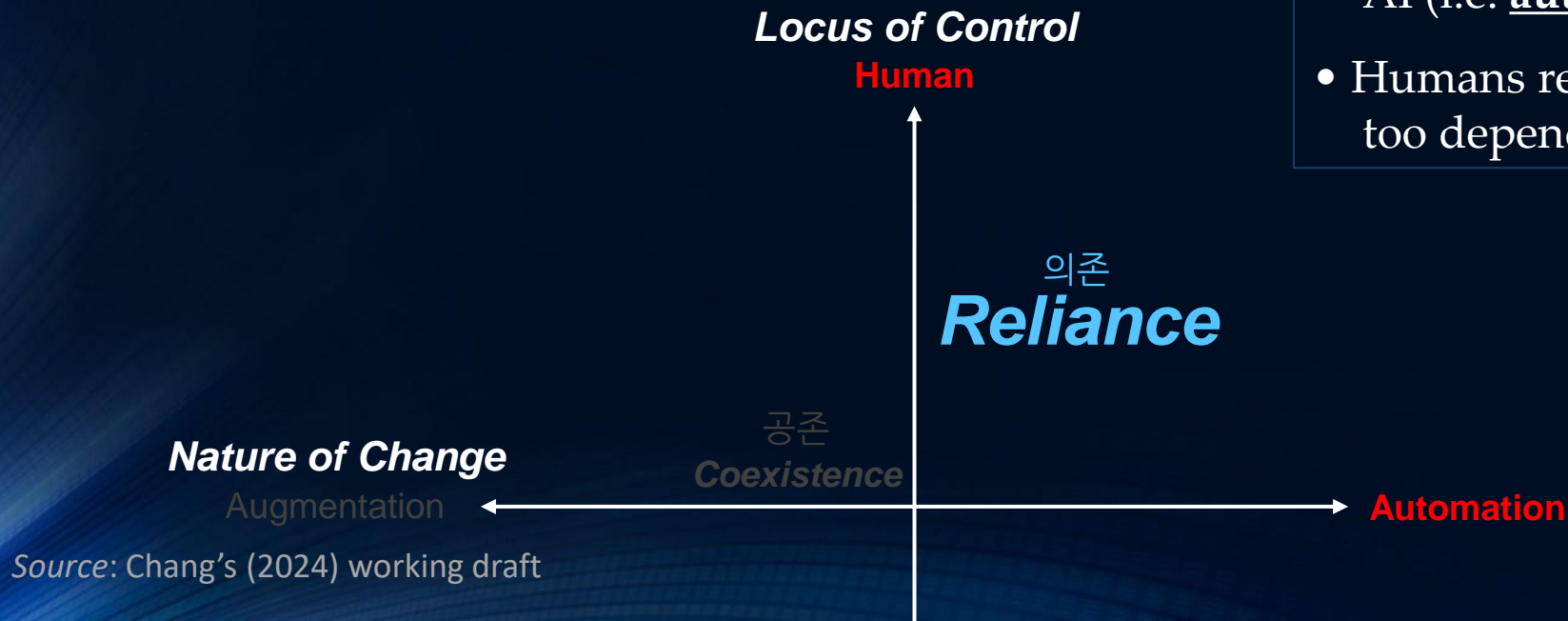
Source: Chang's (2024) working draft

Human-AI relationship: (3) Compliance

Nature of Change

공존
Coexistence

의존
Reliance

Augmentation

Automation

대립
Opposition

순응
Compliance

AI
Locus of Control

- AI-led system and environment (Future Scenarios?)

- Humans accept and adapt to the benefits of '**augmentation**'

- More of a passive conformity, rather than active adaptation

Source: Chang's (2024) working draft

Human-AI relationship: (4) Opposition

Nature of Change

공존
Coexistence

의존
Reliance

← Augmentation   **Automation** →

순응
Compliance

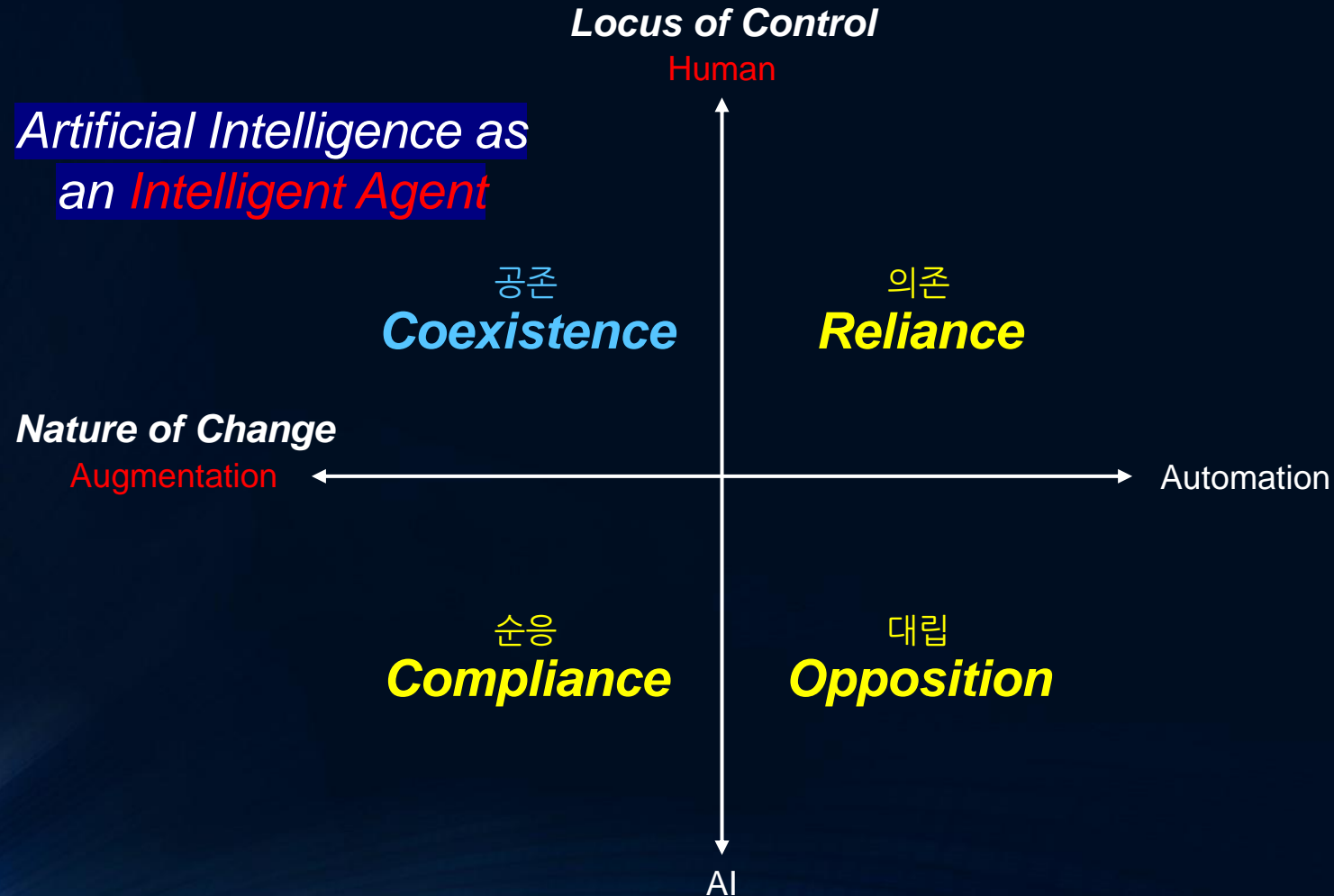대립
Opposition

AI
Locus of Control

- AI-led system and environment (Future Scenarios?)

- Humans experience the threat of '**automation**'

- Oppose or resist potential threats

3. So, what:
What should humanity do to coexist with AI while maintaining its dignity?

A direction for Human-AI coexistence

Source: Chang's (2024) working draft

A direction for Human-AI coexistence

Artificial Intelligence as an Intelligent Agent

Locus of Control
Human

공존
Coexistence

의존
Reliance

Nature of Change
Augmentation — Automation

순응
Compliance

대립
Opposition

AI

Source: Chang's (2024) working draft

- AI will replace humans.

- "AI won't replace humans – but humans with AI will replace humans without AI" (Karim Lakhani)

- "Humans who truly understand what to do with AI will help others." (Youngha Chang)

Dr Youngha Chang

Dr Youngha Chang is an Associate Professor in Innovation Management at SPRU – Science Policy Research Unit – at the University of Sussex, UK. As a Fellow of the Higher Education Academy, Dr Chang teaches innovation, digital transformation, and entrepreneurship-related classes to students from across the globe. His research interests lie in the strategic management of innovation, particularly technological and organizational innovation. He is also expanding his research from firm-level innovation to national-level science technology and innovation policy, with a strong interest in human-centered innovation.