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Exploring a future-orientated framework for sustainability planning in higher education: Insights from a Comprehensive Literature Review

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Paper Session 2: Strategic Implementation & Assessment

My background

- Mechanical Engineer; Masters in Renewable Energy, Energy Management

- Working in sustainability (energy, climate action) for over 25 years
  - Education
  - Research
  - Consultancy

- Dean of Flexible and Work Based Learning in TUS

- Principle Investigator, Sustainable Development Research Institute

- Married, father of 4, GAA Coach and Athlete

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2nd National ESD Strategy – Critical Actions

Action	Measure
1.3	Proposal to explore potential for Framework and Charter to drive Whole of Institution approaches to ESD/Sustainability
2.1e	**HEI Exec Management to consider how ESD/SDG are integrated into Strategy, Governance and Structures**
2.1f	Assign responsibility to designated staff to enhance cooperation on ESD

(DFHERIS, 2022)

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Key Objectives

- The key objectives
  - Systematically analyse sustainability strategies within HEIs to evaluate the extent to which they have been developed with a futures orientated approach and whether a holistic, whole of institution approach is evident.

  - Evaluate the effectiveness of futures thinking methods in supporting sustainability leaders, within an Irish HEI, to conceptualise a sustainability strategy.

- **Research Question: How might futures thinking approaches support sustainability planning within HEIs?**

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Methodological Approach

- Constructivist worldview – researcher positionality.
  - Despite my engineering background!

- Comprehensive Literature Review (CLR) (Onwuegbuzie & Frels, 2016).

- Phases: Exploration, Interpretation, Communication.

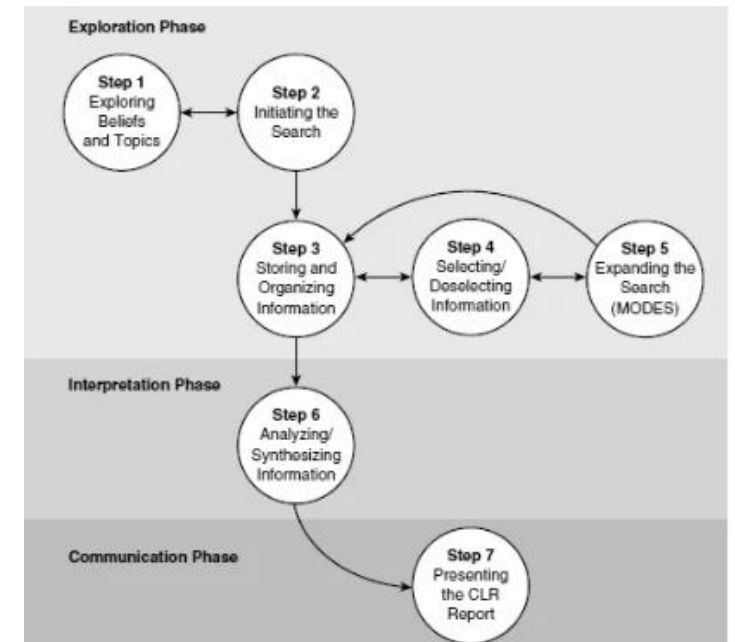- 123 items including peer-reviewed studies, grey literature (2000–2024).

Figure 1 steps CLR Methodology

(Onwuegbuzie and Frels, 2016, p. 66)

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Scope of the Literature Review

Databases: Scopus & Education Source Ultimate.

Period: 2000–2024

(Hallinger & Chatpinyakoop, 2019; Gorski et al., 2023).

70% of research post-2015.

Geographically diverse: Europe, North America, Asia, Africa.

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Evolution of Sustainability in HEIs

Phase 1 (pre-2010): Fragmented initiatives.

Phase 2 (2015+): Institutional strategies

Phase 3 (2020 – present): Strategic integration & competitiveness.

Governance and long-term planning emerging as a theme

(Rotondo & Giovanelli, 2024; Ramísio et al., 2019, Bautista-Puig & Sanz-Casado, 2021)

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Evolution of Sustainability in HEIs

- Lozano et al. (2013, p11) concluded that universities must ensure that sustainable development is integrated throughout the university system as the "Golden Thread".
  - Across education, research, operations, engagement and governance

- A number of studies contend that Universities need to take a holistic approach to the integration of sustainable development (Lozano and von Haartman, 2018; Sanches, Campos, et al., 2022);

- Despite progress in recent years, sustainability remains fragmented, and isolated in specific areas, within HEIs. (Bieler & McKenzie, 2017).

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Sustainability Strategies

- Menon and Suresh (2020) review of sustainability strategies highlighted majority are struggling to achieve integration which percolates into all the functions, activities and operations of the university.

- Limited number of HEIs that have been successful in embracing sustainability across all disciplines and domains of the University (Salvioni, Franzoni and Cassano, 2017).

- A review of strategic plans of Canadian HEIs to identify how sustainability was represented noted that the majority are "accommodative" (Bieler and McKenzie, 2017).
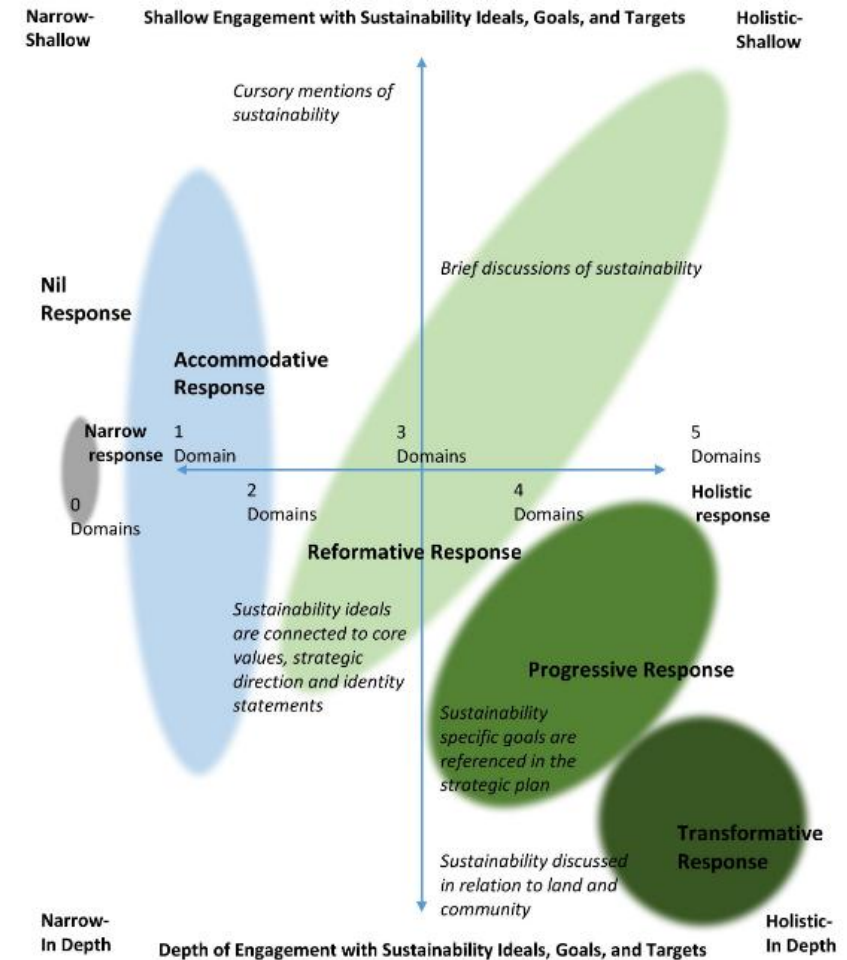 - Rather than reformative, progressive, or transformative

Figure 2: Types of possible responses to sustainability in strategic plans (Bieler and McKenzie, 2017).

Whole-of-Institution Approaches

- Christou *et al.*, 2024 emphasises that "whole-institution" approach incorporates sustainable development through
    - management, governance,
    - organisational culture,
    - strategic planning,
    - campus operations,
    - student engagement, engagement of community and stakeholders,
    - curriculum development
    - and includes monitoring and evaluation.
- Requires leadership & systemic governance (Bieler & McKenzie, 2017).
- Ideal is to move to a fully integrated approach "University 4.0" (Giesenbauer & Müller-Christ, 2020).

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Emerging Frameworks

- The UNEP Sustainable University Framework (USUF) also identifies four core dimensions

- Four step framework (emerging, progressing, established and leading) towards becoming a sustainable university.

- Literature dominated by research in ESD and Campus Operations dimensions
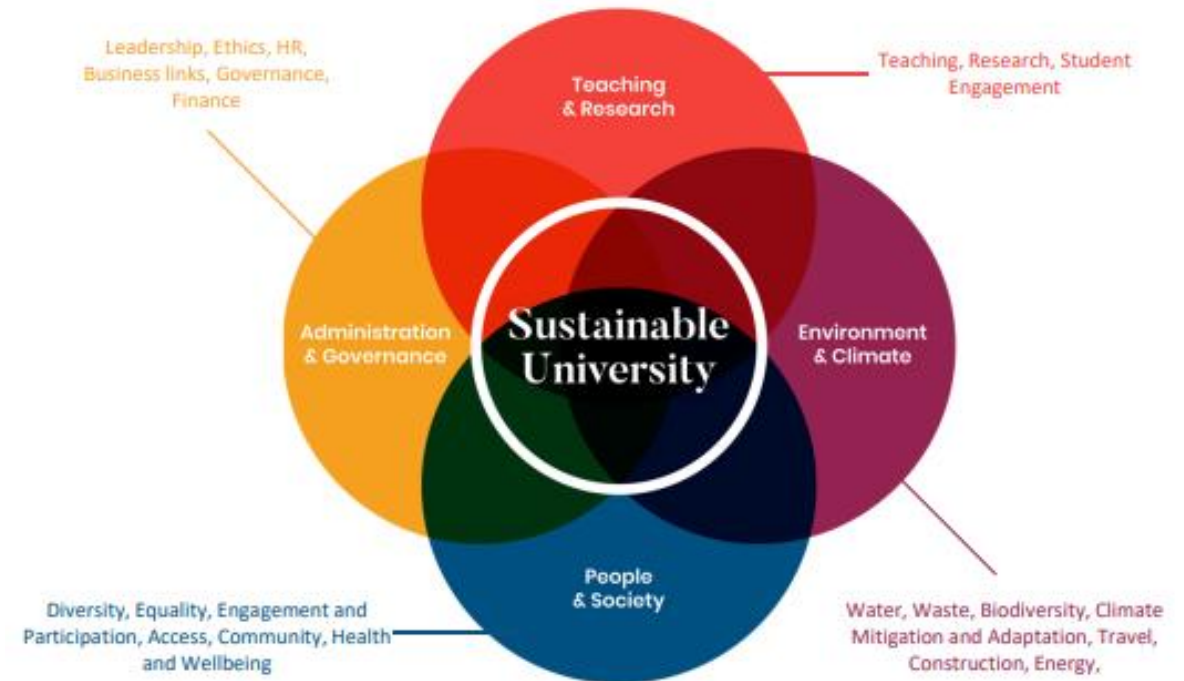
- No single framework dominant

Figure 4: UNEP Sustainable University Framework (United Nations Environment Programme (2022)
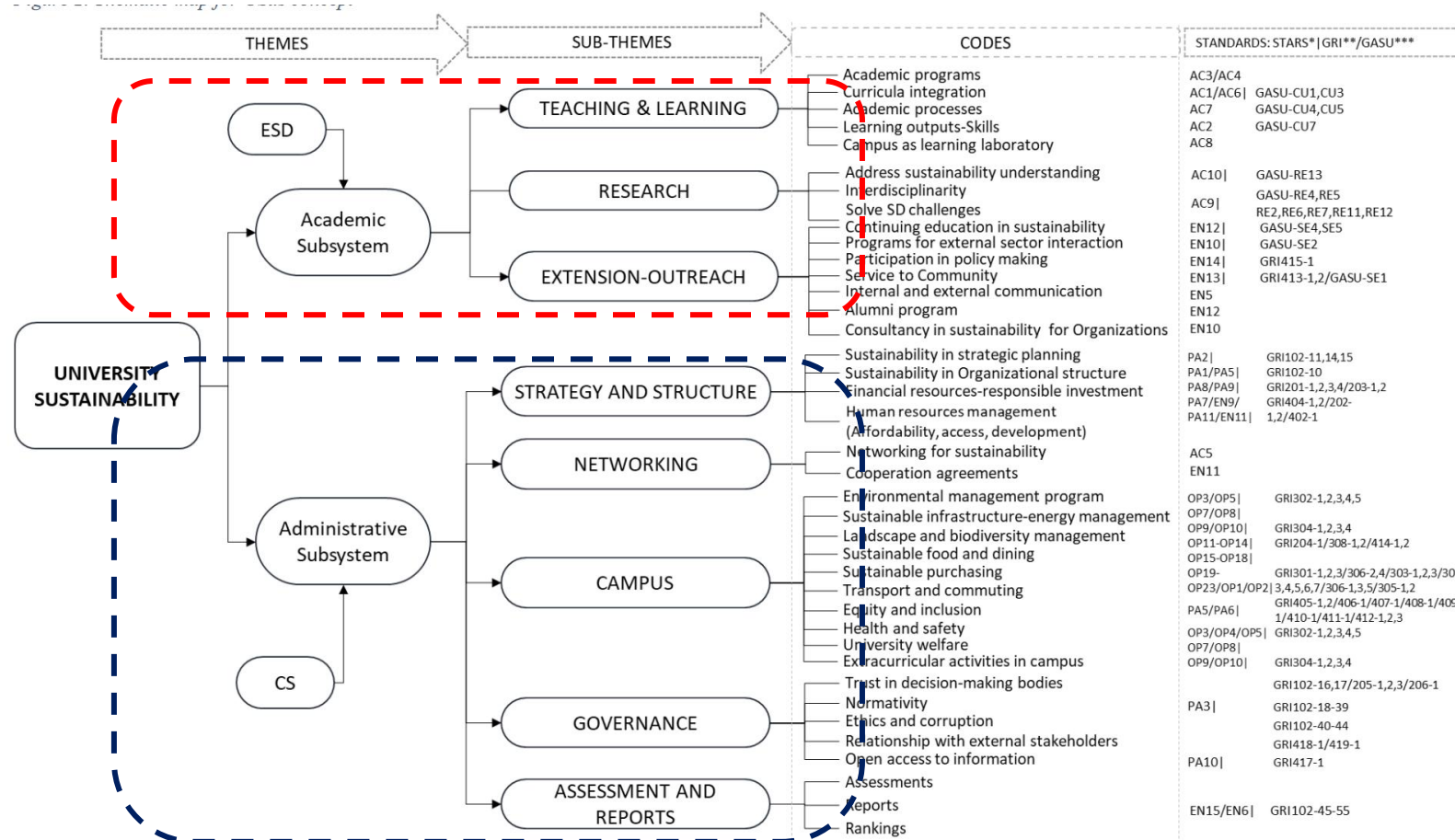
Emerging Frameworks

Figure 3: University Sustainability Concept (Hernández-Diaz et al., 2021)
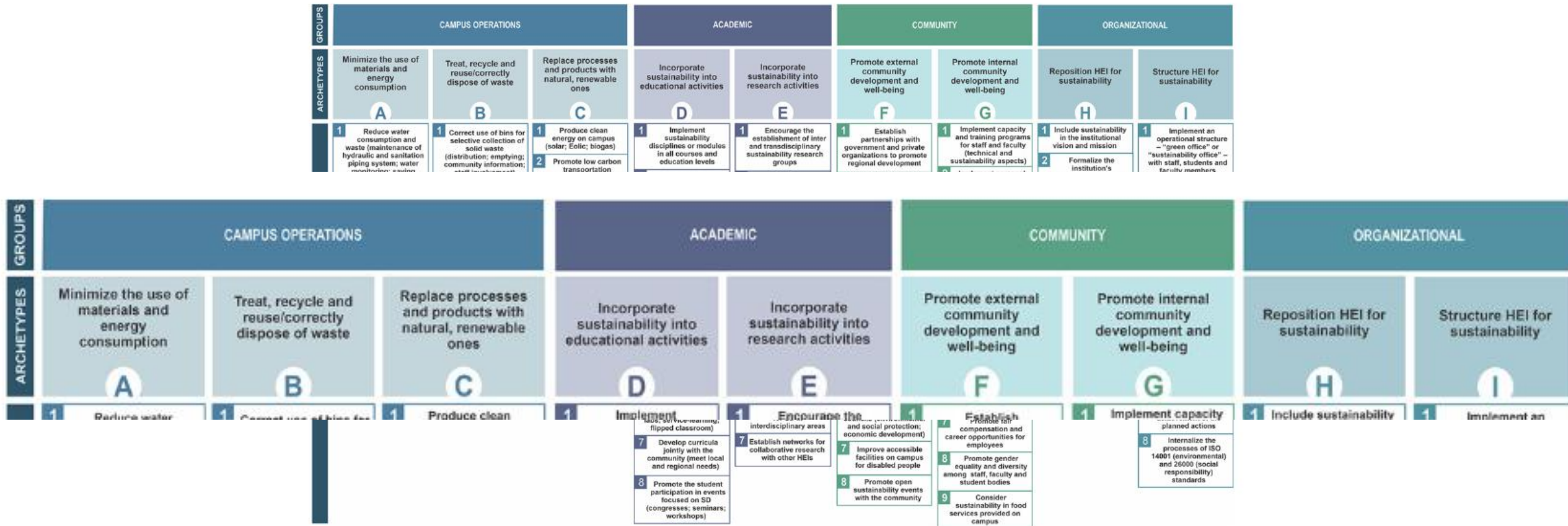
Emerging Frameworks

Figure 3: HEI sustainability archetypes (Sanches, Souza, et al., 2022, p. 821)

Beyond Environmental Sustainability

- "Holistic conceptualization conceives sustainability in its larger meaning, referring to economic, social and environmental aspects" (Agostino and Dal, 2016, p. 9).

- While economic, environmental, and cross-cutting dimensions tend to be addressed almost equally, the social dimension remains the most underdeveloped and the least addressed by university curricula. (Lozano *et al.*, 2019)

- Sustainability is multi-dimensional and requires careful consideration at organisational level (Waas et al., 2011) so that the complex interdependencies can be addressed (Schopp et al., 2019).

- Beyond the three pillars (environmental, economic, social) - cultural sustainability often overlooked (Soini & Birkeland, 2014).

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Futures Thinking

- Futures thinking encapsulates the analysis and investigation of trends, patterns, and societal changes to create a forward-facing view of desirable futures (Levrini et al., 2019).

- Futures thinking, imbued with worldviews, myths and trends, assists in the development of preferable, possible, and probable futures (Inayatullah, 2013)

- Considers differing futures that are "continuously being created by our worldviews of time, images of the future, methods used and derivative actions" (Inayatullah, 2019, p. 141).

- As an approach it presents an opportunity to overcome inherent barriers and re-imagine new futures and potentially deliver innovative and transformative change.
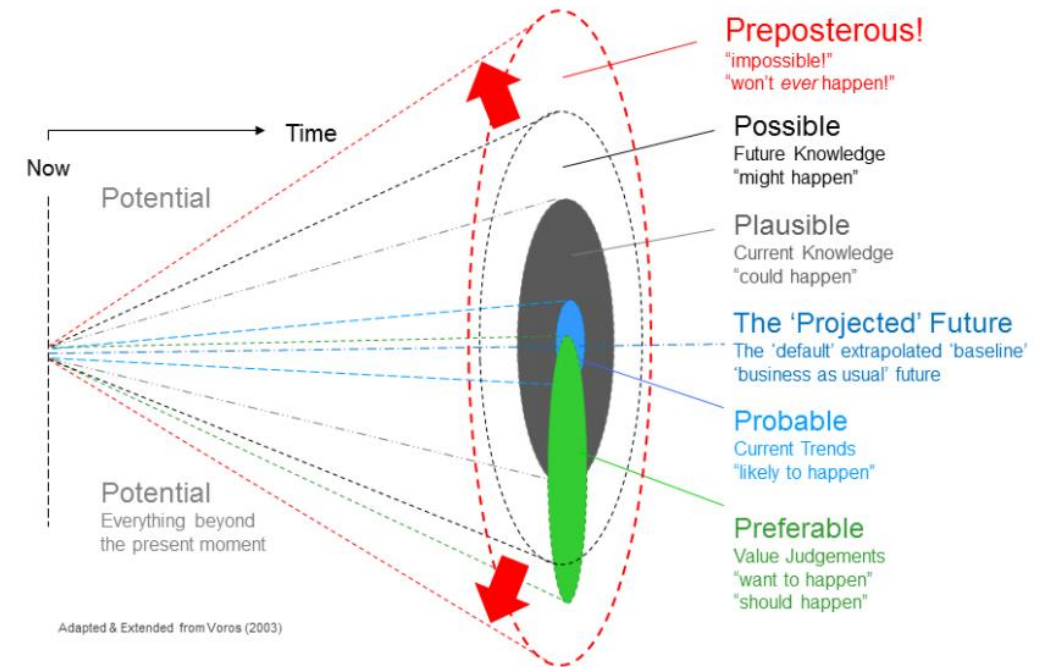

Figure 4: Futures Cone (Voros, 2017)

Futures Thinking in HEIs – Disrupting Status Quo

- Rotondo and Giovanelli (2024) note that most institutional strategies remain short-term, lacking anticipatory capacity

- Futures thinking offers a means to counter this short-termism by challenging assumptions, envisioning multiple possible futures, and developing adaptive strategies (UNESCO, 2012)

- Challenges the status quo; e.g. a socially-oriented University, an environmentally-oriented University and an economically-oriented University (Beynaghi *et al.* (2016)

- Nørgård and Holflod (2024) discuss moving away from a pragmatic and incremental approach to one driven by a more holistic and imaginative approach. Wider/wilder preposterous (put possible) futures – Hopepunk/Solarpunk!.
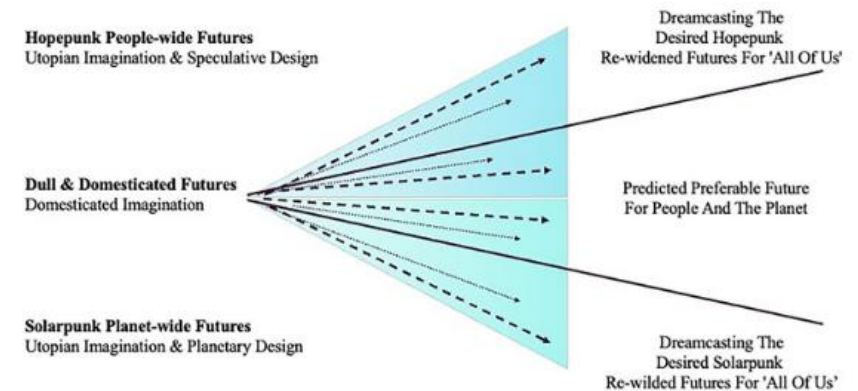

Figure 5: The domain of preferable/desired hopepunk and solarpunk futures (Nørgård and Holflod, 2024)

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Futures Thinking in HEIs

- Universities need to take a longer, futures orientated approach to strategic planning and consider how they can respond to potential radical changes across infrastructure, teaching, research and funding (Alexander, 2023).

- Evidence of the application of futures thinking in sustainability planning within HEIs is limited (Makoe and Olcott, 2021).

- Back-casting utilised to develop a sustainability strategy within the University of Foggia in Italy (Sisto, Sica and Cappelletti, 2020).

- Casual Layered Analysis (CLA) used to imagine "2060 University" with students (Hoffman, 2019)

- Four "Future Universities" designed based on four alternative societies considered by Dator et al (2013) (Grow, Collapse, Discipline and Transform).

Irish HEI Context

- Limited empirical research on Irish HEIs, in particular within the context of sustainability strategies/planning (Lillis & Lynch, 2014).

- Policy drivers: ESD to 2030 (DFHERIS, 2022); HEA Systems Performance Framework (HEA, 2023) now required HEIs to address sustainability

- No evidence of research on futures thinking and sustainability within Irish HEIs – thus a research gap.

- Opportunity for leadership in embedding futures thinking approaches which could encourage Transformative (or at least Progressive) approaches to sustainability
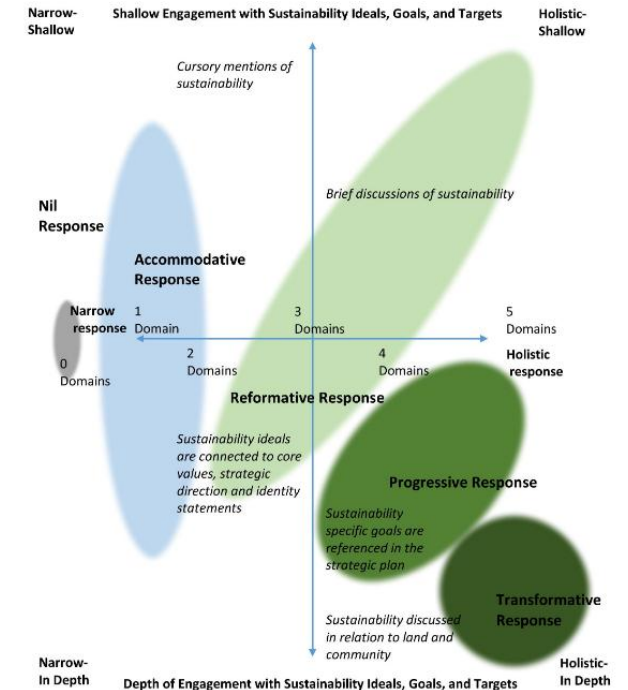
Next Steps in Doctoral Research

- Empirical phase (now complete!):
  - Document analysis: Analysis of existing sustainability strategies, plans and associated documents across Irish HEIs (and 5 international HEIs)
  - Surveys with Sustainability leaders across Irish HEIs
  - Interviews with TUS University Sustainability Committee

- Futures-thinking intervention (in TUS) exploring responses to Futures Thinking methodologies

- Reflection on possible futures-oriented planning model for HEIs.

Conclusions

- Informing the transition from "sustainability within HEIs" to "sustainable HEIs," - overcoming disciplinary silos and ensuring institutional leadership and governance structures support system-wide change
  - **What do sustainability leaders consider to be the barriers - survey**

- HEIs continue to neglect social equity, cultural dimensions, and human development in their sustainability plans
  - **How is sustainability conceptualised within HEIs – document analysis, survey**

- HEIs increasingly adopting sustainability strategies, but few take a sufficiently long-term perspective or explicitly consider the "needs of future generations."
  - **Implementing participatory futures workshops within an Irish HEI**

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Thank You

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