

Peer Review

Review of: "Intelligence: The Quest for a Universal Assessment Framework"

Zana Grigaliuniene¹

1. Northumbria University London Campus, QA Higher Education, United Kingdom

David Josef Herzog; Nitsa Herzog

Intelligence: The Quest for a Universal Assessment Framework

The article gives a comprehensive overview of different types and sources of intelligence. Mainly, it focuses on three domains: human intelligence, animal intelligence, and artificial intelligence. The analysis sheds light on intelligence qualities aiming to develop an intelligence measurement scale. The article suggests that if different types of intelligence share universal qualities, then a universal measurement framework can be developed. However, the article concludes that intelligence has “many facets and contextual backgrounds” and even if it shares some universality, significant differences suggest the construction of complementary sub-scales that might be useful in the further development of the unified intelligence measurement framework that would be precise in intelligence evaluation. The authors acknowledge that the universal framework construction is complex and requires a number of approaches, but they are optimistic about its further development.

The article is a theoretical overview with well-discussed characteristics of different types of intelligence with implications for measurement. It is a well-developed critical evaluation of human intelligence with a detailed discussion of the neurophysiological background, insights into the pathology, and its impacts on intelligence. The variety of methods to measure human intelligence indicates the complexity of the proposition, but it builds the basis for the construction of a universal intelligence measurement framework. Human intelligence is well-contrasted with non-human intelligence with well-defined distinctive characteristics. The well-discussed theoretical background for non-human intelligence suggests bridging biological features and synthetic abilities as a conceptual proposal for nanosystems. The propositions are well supported with the relevant theoretical background and prior research and contribute to the wider literature on artificial intelligence with detailed links to human and non-human

intelligence and their measurement problem. Their insights on embodied and distributed intelligence contribute to the literature on natural and emerging intelligence. The findings and proposed ideas on the embodiment of natural intelligence have practical relevance for the evolutionary robotics industry. They address the gap in understanding the nature of intelligence that comes from embodiment and interaction of neuromorphic systems with the environment, which has implications for robotic trends.

The paper gives useful insights for further research in understanding intelligence qualities. While the paper does not provide a universal intelligence measurement system, it shows the direction for its construction that emerges from the limitations.

Declarations

Potential competing interests: No potential competing interests to declare.