

## Research Essay

# Development of a Quantum-based Ontology for Describing NDE by Using Computerized Natural Language Processing

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## Abstract

The Survival Hypothesis states that a person's personality and consciousness survive the physical death of the body. Ontology is a well-established theoretical domain within philosophy dealing with models of reality. This report proposes the use of computer natural language processing and classification of perceived objects in Near Death Experience (NDE) stories for the validation of a Quantum Ontology based on the Quantum Hologram Theory of Physics and Consciousness. This proposes Quantum Ontology to represent the unintelligible aspects of near-death experiences. The research proposes a validation of ontology constructs within a Quantum Ontology to show the potential of this methodology in NDE research.

**Keywords:** Near death experience, quantum ontology, data mining, natural language processing.

## 1. Introduction

The near-death experiences (NDEs) are very short stories of people who have been clinically dead and then are resurrected or revived spontaneously after a brief interval with the memory of what they experienced during that period. According to Greyson (2010), many people with near death experiences reported vivid mental clarity exceptional sensory imagery and a clear memory of the experience and an experience that is more real, then in their daily lives. Many people experience NDEs and there seems to be a consistency across NDE experiences for their main characteristics, this presents an opportunity to develop an ontology that can help NDE researchers to map the different experiences into an ontology that can help researchers with the establishment of the representation of the reality that is perceived in NDE experiences.

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## 2. Ontology

In philosophy, ontology is the branch of metaphysics which studies what is existing, including the relations that may exist between objects, their categorization, their structure, their properties, their similarities, their states or their changes.

Ontology is a well-established theoretical domain within philosophy dealing with models of reality. Over the years, many different ontologies have emerged. Mylopoulos (1998) suggests that ontologism can be classified into four categories: static, dynamic, intentional, and social. Each of these categories focuses on different concepts in the real world. Ontologies that fall into the static category focus on things and their properties. Dynamic ontologies extend static ontologies to focus on such concepts as events and processes, that is, how concepts in the realworld change over time. Intentional ontologies attempt to explain abstract concepts such as goals and objectives while social ontologies emphasize the concepts of values and beliefs.

An example of an ontology used to describe a reality is the ADL ontology (Min et al., 2017). The ADL ontology for example can predict performance of Activities of Daily Living of cancer patients by applying the ontology-guided machine learning method.

Today however, interest in, and applicability of ontologies, extends to areas far beyond metaphysics. In the case NDEs, there has been different efforts to establish an ontology that can serve as a reference to describe the reality experienced by NDE people. Rominger (2010), made an effort to use art to describe an ontology for NDE experiences, he suggested the use of art as a methodology for NDE ontology research.

## 3. Unintelligibility Approach and Quantum Ontology

Philosophers accurately identified the central, essential barriers to legitimate rational examination of life after death. This section discusses a unique new rational method proposed by Moody (2020) and Valverde & Swanson (2020) that builds on the arguments of both David Hume and more recent analytic philosophers. Moody (2020) introduces the concept of unintelligibility. He proposes the possibility that the universe is unintelligible. If we imagine the universe as going on and on and on in space infinitely, that does not make sense either. Either way, it ends up in unintelligibility. According to Moody (2020), the main obstacle to the rational study of life after death can be removed through a logic of unintelligibility. Linguists describe language on a continuum of intelligibility. The continuum ranges from highly literal language through less intelligible figurative language to the meaningless and unintelligible. Unintelligible language can also induce profound alternate states of consciousness, including seemingly transcendent ecstasies

Physicists complain that a third value of logic—neither true nor false—is needed to describe the bizarre results of quantum theory. Quantum theory is unintelligible and has been used to attempt to explain life reviews in NDEs. Near-death life reviews pose a challenge to current memory research in terms of the sheer amount of instantaneous and empathetic information recall. Advances in quantum physics and consciousness studies support for the first time a fully realizable quantum biomechanical basis for near-death life reviews (Beck & Colli, 2003). The quantum consciousness paradigm can be used to represent the unintelligible nature of NDE experiences, in particular the timeless and spaceless nature of these experiences and the sense of oneness with the universe. NDE experiences express the realization of the interconnectedness of everything, with the quantum principle of ‘entanglement’ suggesting that differentiation between ‘objectivity’ and ‘subjectivity’ is an artificial one. Instead, there is a meaningful relationship between experiences of consciousness in inner and outer worlds, with neither existing independently of the other (Walton 2017). Tyler (2015) for example proposes a set of constructs that could be used to describe NDE stories by using a Quantum ontology that includes constructs for unity, complex interconnectivity and Extinguishability. Quantum consciousness paradigms can be used to explain consciousness (Valverde 2018) and can provide the unintelligible aspect required to describe NDE experiences and map them into a unified model of quantum consciousness.

#### **4. Quantum Matrix Type Reality Ontology**

Hernandez *et. al.* (2018) proposed an ontology for a Matrix-type reality that is similar to an NDE, they argue that one of the keys to understanding “Consciousness” is the understanding of contact with Non-Human Intelligence (NHI) using what they call the “Contact Modalities”. They define the different contact modalities of Non-Human Intelligence as:

- NDE contact
- Unidentified Aerial Phenomenon (UAP) contact
- Out of Body Experience (OBE) contact
- Shamanic Hallucinogenic contact
- Channeling of Non-Human Intelligence
- Spirit/Ghost communications
- Remote Viewing contact

Hernandez *et. al.* (2018) hypothesize that all of these Contact Modalities are interconnected through what is commonly called Consciousness and that advanced physics, in particular, the Quantum Hologram Theory of Physics and Consciousness (QHTC) can begin to provide a rudimentary understanding of the relationships between diverse paranormal “Contact Modalities.”(Mitchell 1999). Certain features of these contact modalities appear to have quantum-like holographic properties that correspond with some of the basic principles from

quantum theory. This includes: 1) Non-locality, coherence, and instantaneous information exchange in a timeless and placeless dimension; and 2) Experiments which demonstrate that “telepathy” is not affected by distance (outside space), and “precognition” which provides information of future events (outside time).

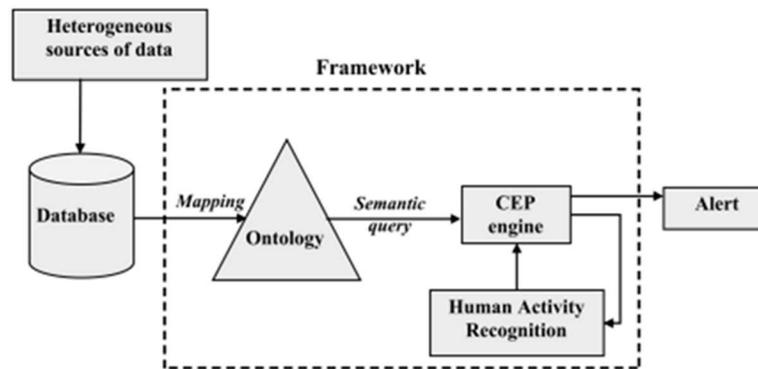
Many authors have proposed using Quantum ontology to represent consciousness. Quantum ontology has been proposed to represent not only objective but subjective worlds (Ruyant 2010). According to Ruyant (2010), quantum ontology can be used to represent consciousness, and accounts for the existence of a continuum between conscious and unconscious states. Quantum ontology has been used in the study of consciousness in the field of psychology. Valadas Ponte & Schäfer (2013), describe similarities in the ontology of quantum physics and of Carl Gustav Jung’s psychology. They argue that the empirical world is an emanation of a cosmic realm of potentiality whose forms can appear as physical structures in the external world and as archetypal concepts in our mind.

Quantum ontology already has been used in near death studies research. Tyler (2015), for example, describes NDE stories using a Quantum ontology that includes constructs for unity, complex interconnectivity, and extinguishability. In regard to cases of life review in near death experiences, reviews pose a challenge to current memory research in terms of the sheer amount of instantaneous and empathetic information recall.

## 5. Research Methodology

An NDE database was generated based on the research of Dr. Jeffrey Long’s Near Death Experience Research Foundation (<https://www.nderf.org/>). This database contains a collection of 4267 records of NDE experiences collected for research purposes. Dr. Jeffrey Long is an American author and researcher into the phenomenon of near-death experiences (NDEs). A physician by training, Long practices radiation oncology at a hospital in Louisiana. Long is the author of *Evidence of the Afterlife* (Long & Perry 2010). He founded the Near Death Experience Research Foundation, which is concerned with documenting and researching NDEs.

The research uses a multi-step methodology as indicated in Figure 1 based on the Culmone et al. (2014) framework, which uses a MySQL DB to collect data that is then mapped to potential ontology constructs of the Quantum Ontology. The Quantum Matrix-type reality of Hernandez et. al (2018) would be used as a starting point for this research. The mapping will be done with the help of SQL statements that retrieve data that is meant to match the meaning of the ontological construct that is being tested. Human recognition is required to validate that the data retrieved indeed represents the ontological construct being tested.



**Figure 1.** Taken from Culmone et al.,2004

In order to analyze the large number of records, natural language processing (NLP) approach guided by the work of Siddiqi and Sharan (2015). NLP is applicable in various problems such as language translation, and text analysis (Navlani, 2019). The objective of this analysis is to use N-gram word frequency analysis to link words with ontology constructs. For example, the construct sense of unity can be linked with emotions captured in words such as connected, one, calm, wholeness, etc. By connecting words to constructs, we can measure the level of connection by calculating metrics such as F-measure (Kasteren et al., 2011) that can identify the level of precision that an ontological construct can represent. A set of constructs would be then identified and validated with the data collected and presented as an ontological grammar that can be used to map any NDE experience. The main objective would be to have a better understanding of the reality of the afterlife.

## 5. Conclusions

The approach discussed in this article opens new avenues for serious rational inquiry into mysteries of consciousness and the after life. This method effectively reformats the mind to reason logically about some previously intractable questions of science and religion, including questions of life after death. Additionally, learning this approach gives people useful new means of describing profound transcendent states of Consciousness. For instance, learning this method can influence how people recount Near-death experiences they have subsequently. Specifically, the method overcomes the main problem of ineffability. That is, people who report such experiences invariably tell us that there are no words to give an adequate description.

The quantum consciousness paradigm is proposed as the main ontology to describe the unintelligible aspects of NDE. Eventually, describing near-death experiences and other transcendent states of consciousness can be standardized, using this unitelligible method.

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