Information Science

Theories & Traditions in Information Studies, KA 1. sem

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Introduction

A paradigm is simply a set of assumptions adopted by the research community to allow sharing similar perceptions and engages in a common practice a paradigm consists of assumptions about knowledge and how to acquire it, and about the physical and social world ***Hirschheim and Klein (1989).

This report is about understanding the four paradigms of information system development and how they are related to our current learning perspective. This report will give a better insight into how well the author understands the effect of the four paradigms in a human-computer interaction scenario. I will try to explain the relationship of research paradigms, ontology, and epistemology based on Hirschheim and Klein´s.

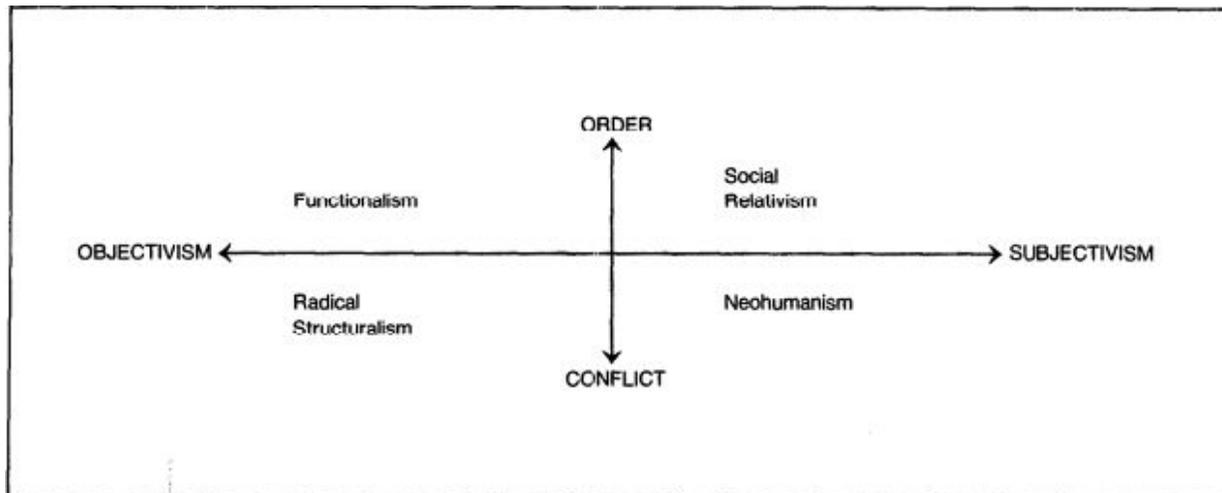*Ontology examines the nature of reality while epistemology examines how you can examine reality.*

Ontology is interested in addressing the question - what is reality? There Are multiple beliefs based on ontology such as belief in one reality, belief of multiple realities, and reality is constantly changing. Ontology could relate to the study of different fields of knowledge.

Epistemology refers to how the individual understands knowledge. There Are Different ways of approaching epistemology and how they can be perceived: knowledge can be measured by reliable design and tools, knowledge can be examined using whatever tools best suited to solve the problem. Therefore it is said to be a branch of philosophy that deals with the study of science and knowledge.

Four paradigms of information system development

The four paradigms (Burrell and Morgan)explains the two main axes of their model as well as explain each paradigm accordingly: Functionalist, interpretative, radical humanist, and radical structuralist. On the first axes *(objectivism-subjectivism)* researchers see the worlds as objects, a reality waiting to be discovered while on the subjectivism researchers see reality as something primarily in our mental thinking/subjective experience. The second axis *(order - conflict)* researchers see the world as a fairly stable place that you can study as status quo in the order or

radical change .in conflict/regulation they see the world that needs to change due to social notions

Functionalist paradigm - This paradigm is associated with explanations of status quo or object reality waiting to be discovered. The paradigm mentioned compared to the other soon to the other three approaches a solution through a problem-oriented concern.

In *epistemology*, the functionalist paradigm affects the way knowledge is gained by searching for a relatively stable cause. In *ontology*, it is achieved when there is a belief of an existing independent reality.

Social relativism /Interpretive paradigm - *social reality paradigm seeks explanation within the realm of individual consciousness and subjectivity*. This is basically the idea that cultural values are not good or bad, just different. This paradigm "seeks to explain the stability of behavior from the individual's viewpoint". Researchers in this paradigm try to observe "on-going processes" to better understand individual behavior and the "spiritual nature of the world".

To understand ontology and epistemology -the belief of multiple reality is true and knowledge is acquired socially rather than objectively constructed. Interpretive paradigm concerns with belief that humans are able to acquire knowledge or have

the ability to adapt. This shows that paradigm research focuses on the study of human behavior rather than the cause and effect.

In *ontology*, social relativism believes that there is no single reality but multiple. In *epistemology*, to understand the relationship between reality and research, their research focuses on a specific context through perceived knowledge.

Radical Structuralist Paradigm *- Based on this paradigm, theorists see inherent structural conflicts within society that generate constant change through political and economic crises.*

With the radical structuralist paradigm, we try to achieve a significant change based on statistical changes. for example: "*After doing a survey within a fast-food restaurant, there has been a decrease in labor and motivation among the newly hired crew compared to the veterans' crew. The situation must be solved by changing the management team as well as work strategy.*" According to **Burrell, G., & Morgan** radical structuralist paradigm is defined as overthrowing or transcending the limitations of an existing social arrangement(p.32) as we can relate the definition to the example of the fast-food restaurant survey.

Neohumanism Paradigm *- Theorists in this paradigm are mainly concerned with releasing constraints that limit human potential and use it to justify a subversive change*(Burrell & Morgan-Sociological Paradigms, 2020).

The two assumptions of knowledge -ontology, and epistemology bring forth two dimensions namely: *subjective-objective dimensions* and *order-conflict dimensions*.

The subjective-objective dimension, objectivist tends to apply methods and study models from natural science to human affairs. Morgan & Burrell summarizes it as objectivists treat social worlds as if it is the natural world. Subjectivism is more of understanding human life through observing subject individuals and how they solve or interpret a situation they find themselves into. Order - conflict dimension axis, the order seeks to have a worldview governed by order, stability, and functional coordination. The conflict (coercion) more or less inflicts changes, conflicts, and disintegrations.

When mapped out these two dimensions/axis, subjective-objective and Order - conflict,yields the four paradigms of information systems development :functionalism (objective-order),neohumanism(subjective - conflict), radical structuralist(objective - conflict) and social relativism(subjective - order).

In the article, the four paradigms are organized in the form of a story about system information system development in relation to ontology and epistemology.

In the first scenario, there is a belief of one reality which is measurable and the same for everyone involved. The key actor is responsible for providing system objectives and constructing them into a system - information systems. the information system development is tested by data models which correspond to reality and properties that are directly observable. The epistemology of the story is that the developer gained knowledge through a measurable cause-effect relationship search. The ontology was realism since properties of the empirical study was observable.functionalism **

The second story is about a scenario where there is not one but multiple cases. The system developer's role is interacting with the management to figure out which system type is sensible without a distinguishable 'good' or 'bad' objective. Therefore the key actors have to agree and approve a system through social interactions. The epistemology is anti-positivism due to the misguided explanation of socialism and should be more of sense-making. The ontology of the scenario is nominalism. In the story social acceptance is crucial but there is no chance to distinguish between the authentic or manipulative.

In the third story, the system is presented as object materialism. the developer has to choose between the management or interest of labor. If the system developer chooses labor interest, technology advancement will be used to improve work-related interest to deliver better products. If the system developer chooses the latter, technology will be used to increase the workload or replacement of instruments used in the organization. An example of replacing work instruments could be the replacement of physical files and logs with new online databases and computers.

The epistemology is positivism since there would be changes in materialistic form to an improved form. The ontology was said to be realism because it reflected the presage reality. The paradigm involved in this third story was radical structuralism with the aim of providing change.

The fourth mentioned story focuses on the potential of humans threatened by theories and unwanted constraints. The story captures the positives of the previous story while adding the notions of emancipation. It is noted that through information development organizational life has changed but due to heavy constraints of social influence, it also affected the rationality of the change itself. The goal of the story

was to show that the information system removes 'contorted influence ' to rational discourse. As Mentioned by Burell & Morgan in the article, The ideal of emancipation. Information systems should lead to emancipation from all unwarranted constraints and compulsions (e.g., psychological, physical, and social) toward a state of justice, freedom, and material well-being for all.

The epistemology concerned in this story is that of positivism towards knowledge and anti-positivism to a mutual interest in knowledge. The ontology was realism for technical interest.

Therefore based on their findings, the paradigm involved was neohumanism.

Discussion

In this section, we see the paradigms are introduced and we get to know two major assumptions derived from them namely <ontology and epistemology.these paradigms are then explained on different user case scenarios and each assumption was fit fitted in the scenarios for a better understanding and relevance of the paradigms and assumptions to human welfare.

It is easy to apply Burell and Morgan's research to modern-day research when reading as well as research due to its clarity in theory explaining and relevance.

Learning approach

In the second section of the report, I chose a cognitive perspective(Scikszentmihalyi, 1990; Ryan & Deci, 2000) as my learning approach and I will explain the relationship of the learning approach with ontology and epistemology as well as its relevance to information studies.

Cognitive perspective

The aim of the cognitive approach is to study how the internal mind works to influence behavior. Cognitive psychologist has come up with at least three assumptions of how our inner minds work :

Limited capacity - our minds can only process a fixed amount of information at once

Control mechanism - there is an area in our minds that has the superior processing power and can still control various activities in the outer part of the brain

Two-way flow - our minds take information from the environment (input) and process and produce behavioral activities or action (output) much like a computer.

In the article the author describes happiness and how to find it based on various theories and methods .happiness is an emotion, a feeling that our mind interprets in our everyday exåereincewithout taking into consideration materialistic objects,

To build inner harmony socialization is sought as an epistemology to make people dependant on social control. By controlling consciousness we are able to think through everyday life and activities. it makes us able to make use of our senses and respond accordingly.

In pleasure and enjoyment, pleasure is the feeling and emotional content when achieving an expectation set by ourselves. This is an implicit study of reality that the human mind strives for. Enjoyment is rather the result of meeting the desired expectation characterized by a sense of novelty. Enjoyment is an explicit epistemology of the feeling of achievement.

In understanding the flow we learn that we are in control of our psychic energy and we also add it to our consciousness. There are implicit and explicit variations of ontology and epistemology. This section will cover some of the observed ontology and epistemology.

It is an implicit reality that not every individual has the ability to acquire the flow of mind. There are people with long term mental illness such as schizophrenia. This mental illness clouds the mind with faulty perception. In other cases some people are self-conscious.

In understanding the flow, epistemology is explicitly proven when the article mentions how people require information to represent their consciousness. There are different ways to achieve flow:

Through the body, one has to take control of what the body can do and develop sufficient skills. This is a more implicit ontological approach as it is true that humans are able to adapt to activities that they train and strive for.

The Mind, we have the ability to think. All experiences we undergo first come through our minds. They can depend on various factors such as languages. There is an implicit epistemology of how the mind works with the phrase ' like in the case of physical activities, there must be rules and a way of obtaining feedback or else the mind is in chaos.'

Information studies focus on the design, development, and evaluation of IT systems with a particular emphasis on the relations and interactions between people and IT systems. the main principle of the learning approach is how we can implicitly and explicitly understand our inner minds and conscious as well as study the current knowledge about how our minds work. we can derive more information through the use of methodologies, theories, or instruments that are best suited for gathering information.

As observed it is safe to say that this learning approach is relevant to information study due to the similarity

User behavior

A study of mobile user engagement (MoEN): Engagement motivations, perceived value, satisfaction, and continued engagement intention

Scope

This is about mobile technology and how it is accepted in society and its usage adopted. the adaptation of mobile technology is decided on users previous adaptation, activities, and interests. as mentioned in *Journal of Happiness Studies, 3 (1) (2002), pp. 71-92* - mobile technology engagement is more of a persistent and pervasive cognitive-affective state, this means it should engage users rather than satisfactory state

MoEN(Mobile user engagement)

MoEN - mobile user engagement model - was used as a theoretical model to examine and research mobile engagement

three-dimensional stages of human attitude otherwise known as the ABC Model of attitude (Affective.Behaviour and cognitive)

Affective component

This behavior reflects the users feeling and emotions as well as expressing the users'intent. The behavior normally reflects attitudes which are important in explanations of how the user's portraying themselves

Behavior component- human behavior is a combination of three dimensions; mental, emotional, and physical Wiley, New York, NY (1994) this means that human behavior attitude is dependent on how we act and /or behave.

Cognitive component

This is said to be related to the individual perception of people and objects. Mobile users engage their minds cognitively when using devices in their daily lives.

Data analysis

The article mentions how a survey was used as their primary data collection method - data research methodology.survey was used to test the ABC model.the survey measured the participants' satisfaction and perceived emotions towards their smartphones.

It is mentioned that the survey contained twenty questionnaires to measure mobile engagement behavior and they all covered the proposed research model. The data collection was done from undergraduate students at southeastern university in the United States of America (USA) they were given detailed information about the type of research involved and the expected outcome of the participation. This survey was done voluntarily and anonymously during which A substantial quantity of data was collected despite discarding incomplete surveys

The collected data was then analyzed by using the Structural Equation Model (SEM), better understood as a framework that integrates a number of variable techniques and disciplines. The reason SEM was used as a research model is that it can address different research questions often physiological concepts that are difficult to measure. *It can be viewed as a combination of factor analysis and regression or path analysis*. Hox, Joop & Bechger, Timo. (1999).. A pilot test was

done before the SEM to ensure that the model is reliable and valid for the participants to take part in the research survey. It is mentioned that Cronbach's alpha and Fornellis composite reliability were used for pilot testing to ensure validity in terms of consistency, reliability, and convergent validity.

After a successful pilot study, Cronbach Alpha and Fornellis composite reliability was used for the analysis of the structural method. The possible case as to why these reliability models are chosen could be because of the ability to estimate reliability and it is an indicator of consistency(consistency reliability is relevant to the composite score while the composite score is the sum of two or more score). To understand these composite scores more clearly, Cronbach Alpha and Fornellis composite reliability is measured using a benchmark of 0.0 to 1.0.

Items	1	2	3	4	5	6
1. Utilitarian motivation	0.613					
2. Hedonic motivation	0.569	0.675				
3. Social motivation	0.601	0.566	0.644			
4. Perceived value	0.328	0.471	0.332	0.846		
5. Satisfaction	0.285	0.365	0.292	0.682	0.834	
6. Mobile engagement intention	0.284	0.320	0.292	0.457	0.471	0.834

They had to reduce data in form of a smaller set of summary variables in order to identify the structure between the measures variables using an exploratory factor analysis (EFA). The acquired results demonstrated six factors above a certain average variance extracted (AVE). The researchers use a structural model test using SmartPLS 2.0M3 to test the hypothesis due to the ability to estimate coefficients which can explain the variances observed as regression analysis.

The results obtained proved that mobile users' perceived value has an effect on the satisfaction and engagement

Discussion and Conclusion

operationalizing is observed in the study of mobile user engagement through describing the actions mobile user engages. The article is research done to view how well mobile technology has had an impact on the user's daily activities and life. Mobile technology since invented has had a big impact on the understanding of human mental thinking and lifestyle. This is proven by the MoEN research done on a specific volunteer group of students and the instruments used to measure was sufficient . It was stated that social engagement motivations were determined by the events and moments that were shared virtually but not physically.

My point of view of this study is that it helps in understanding the meaning of a basic understanding of reality, perceived reality, and how information systems thrive to contribute in terms of knowledge. We understand our extrinsic and intrinsic motivation in our daily lives that we did not think of before.

Human-computer interaction systems help in designing and implementing the best user needs depending on the preexisting objective. At the same time, it is confusing to understand the terminologies or the flow of the learning approach since it depends on which approach best suits an individual

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