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Abstract

This paper briefly introduces the reader to QMethodology and suggests its suitability for research with the field of HCI. Furthermore, this paper takes the perspective that HCI is largely a form of human to human interaction. Thus design for HCI would need to take into account human understandings, of computers, systems, networks and software, by all types of participants, if fruitful interaction between computers and people and the people who use them is to occur. This paper describes and suggests the use of an established methodology, QMethodology, for the examination of human perceptions in HCI. The example this paper gives is a study that is currently being done in a cross cultural setting to 'explore metaphorically based schema that individuals use to understand, information, information technology, and information seeking.

Keywords

research, computer, methodology, q, human, interaction

Disciplines

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Q METHODOLOGY AS A RESEARCH METHODOLOGY FOR HUMAN COMPUTER INTERACTION

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ABSTRACT

This paper briefly introduces the reader to Q Methodology and suggests its suitability for research within the field of HCI. Furthermore, this paper takes the perspective that HCI is largely a form of human to human interaction. Thus design for HCI would need to take into account human understandings, of computers, systems, networks and software, by all types of participants, if fruitful interaction between computers and people and the people who use them is to occur.

This paper describes and suggests the use of an established methodology, Q Methodology, for the examination of human perceptions in HCI. The example this paper gives is a study that is currently being done in a cross cultural setting to explore metaphorically based schema that individuals use to understand, information, information technology, and information seeking.

KEY WORDS

Metaphor, Q Methodology, Human Computer Interaction

This paper briefly introduces the reader to Q Methodology and suggests its suitability for research within the field of HCI. The author in support of this contention makes reference to current research that uses Q Methodology to identify the metaphors that individual use to understand information, information seeking, and information technology. One of the main strengths of Q is its ability to reveal subjective views that individuals hold on particular topics. As research in Human Computer Interaction has ranged from metaphor to culture in its effort to address problems in user interface design and international human to human communication, it can only benefit from a methodology that reveals the subjective views held by individuals.

This paper takes the perspective that HCI is largely human to human interaction. This being as computers, systems, networks and programs are clearly products of human development and that the ones who interact with computers are certainly humans. In taking the above view it is further proposed that design for HCI needs to take account of human understandings of computers, systems, networks and software by all participants, if fruitful interaction is to occur. It follows that the examination, of these human understandings should be based on substantive research that is capable of exploring how systems, computers, networks and information needs, are conceptualised by the different participants in the chain of use. As it is our wish to further develop our knowledge of human understandings, it is reasonable to expect that this it will occur via systematic research into how computers and systems etc, are perceived by designers, administrators and users.

This paper describes a research methodology that is currently being used in a cross cultural setting to explore metaphorically based schema that individuals use to understand, information, information technology, and information seeking. This paper describes and suggests the use of an established methodology, Q Methodology, for the examination of human perceptions in HCI research.

Q methodology although not widely used in computer related research, is widely used in communication research, psychology and educational psychology. A recent (Sept. 30th 1999) conference in Missouri by the International Society for the Scientific Study of Subjectivity has papers using Q Methodology in areas including; mass communication, journalism, public relations, advertising, health care delivery, counselling and management, public policy, gender and privacy research. (Logan, ISSSS Program 1999)

The origins of Q Methodology extend back to 1935 when invented by William Stephenson. Since that time Q Methodology has been frequently associated with quantitative forms of analysis due to its involvement with factor analysis of Q-sort technique. However it is its ability to reveal subjectivity, peoples views, attitudes, opinions, understandings, and experiences that accounts for its increasing popularity in a range of social sciences. Q Methodology differs from conventional factor analysis in that with Q the factor represents the variance that is common to the people associated with the factor (Brown, 1980).

Q-technique typically involves the sorting of statements in a rank-ordering from agree to disagree.

The source of the "statements" however can vary greatly and it is this aspect of Q methodology that can be seen as qualitative as it involves collecting the thoughts of people on a particular topic or issue. It is this collection of what people think, their views, for example, as "short statements" that gives Q research its richness. The term "statements" warrants further explanation as the "statements" can vary from actual short statements, to pictures or images, sounds, bits of colour, etc. The statements then consist of any set of items that can reasonably be sorted. For example this flexibility is demonstrated in a recent study was done on perceptions of beauty where images of men and women, (different sets) were sorted via a web page on the Internet.

This flexibility in choice of the medium is one of the stronger arguments for the use of this methodology in HCI, where form is lead by conceptualisation. It follows that an effective research methodology would be one that allows for fluidity in form.

The current interest in the use of metaphor in HCI is a particularly germane example in the consideration of Q methodology as a means to explore understandings of individuals as expressed in metaphor. The high use of metaphor in HCI presents the opportunity to do a study exclusively using various metaphors as statements. Such a study could indicate not only which metaphors are thought to be useful or not, but by which groups of individuals and the particular collection of metaphors held to useful or not, by different groups.

A BRIEF OVERVIEW OF THE METHOD

A Concourse

Q Methodology if used for statement generation begins with a concourse (Meloche & Crawford 1998), where "statements" are elicited from a group. This activity can in practice vary from an actual discussion or interview to a review of sources, such as newspapers or journals to collect published views on a topic. The collection of "statements" need not occur in a single session but may transpire over time or amongst various groups. It will however, typically be on the same topic/s. An advantage of Q Methodology is that it does not require a large population to produce meaningful results, as a rule a Q sample of 30 to 50 individuals can produce an accurate picture of the range of views on a topic, (McKeown & Thomas, 1990).

The Sort

The sort is the method used to shape or present a picture of ones view on a topic by making decisions in regard to the statements presented. The participant is asked to choose amongst the statements. In a recent study by the author the following instructions were given:

"You are being asked to sort statements in accordance with your degree of concurrence/agreement with the statements. Where +4 is high agreement and -4 is high disagreement and the scales between -4 and +4 reflect shades/levels of agreement. You will find the statements on a pack of cards that will be given to you. You are asked to sort the cards in accordance with the rating given to each card. The largest number of statements will be placed in the centre and the least amount of statements at each extreme point," (Meloche & Crawford 1998).

The following diagram is similar to the sample form that you will need to record your ranking of the statements:

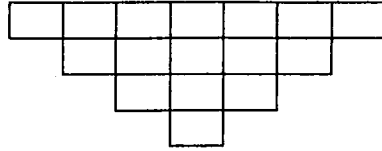


Figure 1: Q Sort Grid

The Analysis

The analysis is the longest part of the task and the level of difficulty experienced will depend on the relative clarity of the factors that are produced. There is software available, 'Q method software' that will assist with the mechanics of the analysis. However the researcher must assess and ask questions of the results with knowledge of the participants and the topic. It is however the participants themselves through their act of sorting, who have aligned themselves together on the different factors. It is the researcher who must study and analyse the nature of the factors.

Research for HCI, particularly, research that can probe subjective understandings of individuals, is important due to the lasting effects of conceptual design in HCI. Examples such as the 'spreadsheet' where a package of mathematical functions were grouped visually as a 'spreadsheet' is just one example of the lasting impact of metaphorical expressions. It is going to become increasingly important that design is based upon research and that an iconic grammar is established if we wish to avoid an endless series of cul-de-sacs rather than integrated systems that flows on from the conceptions of its participants.

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