Participations
Journal of Audience & Reception Studies

Volume 8, Issue 2
November 2011

Q Methodology in Audience Research: Bridging the Qualitative/Quantitative 'Divide'?

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Abstract
Q Methodology has been employed in research on audiences since the 1960s, but has not entered the mainstream of scholarly or commercial audience research, and most audience researchers remain unfamiliar with it. However, Q Methodology offers several advantages unmatched by other approaches to researching audiences, making it a potentially valuable addition to the researcher's toolkit. Q Methodology provides insight into audience subjectivities in a much richer way than that provided by conventional surveys, while providing more structure and better replicability than purely qualitative approaches such as focus groups or ethnographic observation. Q Methodology's insight into the varieties of audience experiences also provides an opportunity to develop, explore, and test theory before moving to large scale surveys. Further, recent advances in software allow Q Methodology surveys to be administered online, and to thereby engage online users of a wide variety of media forms located on and offline. In this article, we re-introduce Q Methodology to the audience research community. First, we briefly recall Q Methodology's principles, parameters, and operations. Then, we overview the key stages in conducting a Q study, illustrating major points with reference to relevant exemplary works. We conclude with observations regarding our recent experience in using Q Methodology in an online survey of cross-cultural responses to James Cameron's feature film *Avatar*.

Keywords: Q Methodology; qualitative research; online audiences; audience reception; *Avatar*

Introduction

Audience research is growing in scope and complexity with the expansion of audience roles from the traditional reader, listener, viewer, spectator, and citizen to the much more varied

roles of user, customer, player, producer, visitor, gifter, fan, friend, voyeur, learner, and participant. In apprehending this complexity, the field of audience research has become a confluence of disciplines and specialties within which a wide range of diverse and to some extent divergent methodological approaches can be identified. Indeed, some media reception scholars have expressed concern about a growing degree of fragmentation within the field (Barker 2006). While this fragmentation largely relates to increasing differentiation in our research objects and objectives, it is simultaneously expressed and reinforced by a historically prevalent divide between qualitative and quantitative methodologies. Some suggest the latter could be countered by fostering a greater degree of methodological pluralism among audience researchers (Napoli, 2010; Press 2006; Schrøder 2000; Schrøder, Klein & Murray 2003), as is evident in the growing popularity of mixed-method approaches, particularly within European audience studies.

Yet, despite recent initiatives, the qualitative-quantitative divide in audience research remains largely intact. Indeed, every audience or mass communication research methodology textbook makes a basic distinction between quantitative and qualitative methodologies, since these two approaches are commonly considered to reflect fundamentally different epistemologies and utilities. And, while mixed-method approaches are increasingly favored, the methods *themselves* are generally not true methodological hybrids, and are more often used for quite distinct yet complementary purposes. Audience behaviors, attitudes, socio-demographic attributes, and the correlates and causal relationships among them are generally investigated with quantitative methods, while audiences' understandings, perceptions, feelings, motivations, and desires are generally investigated with qualitative methods such as open-ended interviews, focus groups, and ethnographic observation.

The main shortcoming of much qualitative research, however, is "the opacity of its interpretive procedures of analytical generalization" (Schrøder & Kobbernagel 2010: 123). While qualitative audience research can offer richly detailed insight into the subjective quality and content of a specific audience-text encounter, generalizations to inform theoretical understandings of the nature of media reception and use *per se* can be difficult to make. Obviously, this issue of generalization is not specific to qualitative research, and many rightly question the legitimacy of claims that quantitative approaches necessarily offer widely applicable findings. But as Barker (2006: 126) laments, there has been little research about audiences that attempts to formulate testable generalizations that can be empirically corroborated, or refuted, and most qualitative research methods are not designed or suited for such a purpose. Some readers of this journal may question the epistemological assumptions underpinning the quest for more 'objective' and supposedly scientific approaches to the 'problem' of media reception and use. But it is nonetheless the case that the recent history of audience studies, at least in the British Cultural Studies tradition, has witnessed an abundance of largely 'anecdotal' qualitative case studies of discrete

encounters between texts and audiences, whose interpretations and practices are too often discussed in isolation from the wider body of research and remain relatively untheorized. This tendency makes it difficult to discern the relevance of ethnographic findings beyond the specific texts and contexts examined. That is to say, while research on audiences continues to proliferate – generating lots of 'interesting stories' (Morley, 2006) – it does so without an accompanying accumulation of knowledge and theory about the processes governing audience engagement and response *per se* (Barker 2006; Morley 2006; Press 2006).

Three important steps forward in audience studies have taken place, however. First is the emergence of general agreement that the reception experience, for most people, is not so solipsistic or idiosyncratic that people cannot communicate important aspects of their experiences and discover shared viewpoints with others through talk. Audience interpretation and response is in that sense inherently *social*. Second, is a common understanding that texts practically always are polyvalent and polysemic, and that different segments of the audience apprehend meaning and value in different, yet still patterned and discoverable, ways (Michelle 2007; Suckfüll & Scharkow 2009). Third, most now also recognize that it is necessary to distinguish between insightful expert scholarship that analyzes or interprets creative texts from a particular theoretical perspective, and research on the understandings and subjective experiences of the everyday 'consumers' of those same cultural products. If we want to know about, talk about, and compare the subjective experiences of audiences and the meanings they garner from cultural texts, most agree that we must

This brings us to Q Methodology, a research method that effectively combines qualitative and quantitative dimensions in a truly hybrid manner. Q Methodology was explicitly designed to objectively uncover and analyze similarities and differences in the subjective viewpoints of individuals, a task at which it excels. It is an exploratory, interpretation-intensive methodology suitable for small populations of respondents, and is 'fortified' (Brown 2008) through recourse to the statistical operation of factor analysis. Because it allows insight into audience subjectivities in a much richer and more holistic way than conventional surveys, while providing clearer structure, better replicability and a more rigorous analytical framework than purely qualitative approaches such as individual interviews, focus groups or ethnographic observations, Q Methodology is particularly well-suited for the study of media reception and use. By uncovering the diversity of audience experiences and opinions, Q Methodology can inform the development and testing of more comprehensive theoretical accounts. It also has considerable potential to expand the contribution and relevance of in-depth qualitative investigations, inform larger scale surveys, and complement close textual analyses. Q Methodology's ability to map and systematically compare audience subjectivities while apprehending the complexity of audiences' multifaceted responses is an advantage unmatched by standard social science

approaches that seek to measure strength of association among variables or attributes. Q Methodology's hybrid character also has the potential to bridge the gap between quantitative and qualitative methods by helping researchers in these two predominant research styles to fruitfully interact with each other.

In this article we (re)introduce Q Methodology to audience researchers. First, we briefly review Q Methodology's principles. We then illustrate Q Methodology's principles, parameters and operations using illustrations from the corpus of published audience research that applies Q Methodology. (In Table 1, over ninety scholarly publications in the broad area of audience research and media studies that use Q Methodology are grouped into thematic categories under two broad headings: audience studies and user studies). We conclude with observations regarding our recent experience in using Q Methodology in an online survey of cross-cultural responses to James Cameron's 2009 feature film, *Avatar*, which we hope will provide useful guidance for Q novices interested in adopting this method.

An Overview of Q Methodology

Q Methodology was created by psychologist-physicist William Stephenson in the 1930s to provide the basis for a scientific approach to human subjectivity.[1] It is comprised of a set of procedures informed by a philosophical orientation:

> Q methodology is best understood as a type of research that identifies the operant subjectivity of individuals in regard to a particular subject. The methodology encompasses a broader philosophy of how subjectivity can best be studied, an inherent epistemology, and a method that includes a series of well-defined steps or phases. (Brown, Durning, & Selden 2008: 722)

Q Methodology provides the means 'to reveal the subjectivity involved in any situation - for example, in aesthetic judgment, poetic interpretation, perceptions of organizational role, political attitudes, appraisals of health care, experiences of bereavement, perspectives on life and the cosmos...' (Brown 1996: 561). Using Q Methodology, the researcher may objectively describe subjective viewpoints, experiences, and outlooks 'about life as lived from the standpoint of the person living it' (Ibid.). Q Methodology accomplishes this by asking the subject to operationalize his/her own viewpoint through an ipsative (self-referencing) procedure. The researcher sets the stage and interprets the results, which emerge as shared subjective accounts among respondents.

In a Q Methodological study, respondents rank-order a set of items (usually from two to five dozen statements on cards, but images, objects, or other stimuli such as sounds or odors can also be sorted) into a configuration that is taken to represent a holistic expression of each person's perspective, such as degree of agreement with, or preference for, the items.

The Q sorts are factor analyzed by-person to identify a small set of factors which represent inter-correlated groups of Q sorts. These groups of similar Q sorts 'typically express a shared and coherent point-of-view [among persons] on the topic addressed by the item set' (Stenner, Watts, & Worrell 2008: 216). The researcher interprets the viewpoints on the basis of the configuration of items in each factor, assisted by qualitative explanations provided by respondents themselves about their reasons for agreement or disagreement with the items they have chosen. In this way, a Q study yields 'the holistic identification of a finite range of distinct viewpoints' relating to the issue or subject under study (Ibid.). We provide a more detailed discussion of the steps involved in a Q study below.

Until relatively recently, Q Methodology had a 'fugitive' status among methodologies (McKeown & Thomas 1988) that can be traced to its origins in psychometrics and its quantitative-qualitative hybridity, which make it look like a quantitative methodology to qualitative researchers, but like a qualitative methodology to quantitative researchers. Q Methodology was by conceived by Stephenson in the psychology labs of Spearman and Burt in London in the 1930s, where the foundations of today's psychometrics were developed through the invention and application of advanced statistical techniques such as factor analysis. Stephenson, who earned one doctorate in physics and another in psychology, clearly possessed considerable mathematical talent. He was considered Spearman's brilliant protégé and he contributed actively to the debates about the development of psychometrics. In 1935 he published his famous letter to *Nature* that called for an approach to studying subjectivity by correlating persons, not variables (Stephenson 1935). This was a methodological and philosophical fork in the road for Stephenson. Good (2010) has shown how Stephenson's divergence from the hypothetico-deductive mainstream of psychology cost him academic positions in the U.K. and the U.S. After working in market research for a few years, Stephenson settled at the University of Missouri's School of Journalism in 1958, where he published numerous papers and a book on communication theory. Q Methodology diffused into the social sciences through Stephenson's teaching at Missouri and his publications. It gained some acceptance as an evaluation tool in clinical psychology, and its salience in the social sciences grew beginning in the 1980s as the cultural and linguistic turns led to growing demand for ways of reliably apprehending human subjectivity.

Today, Q is regarded by a growing number of scholars as a fundamentally discursive, constructivist approach that combines a strong qualitative dimension with the powerful quantitative tool of factor analysis (Stenner, Watts, & Worrell 2008). For these reasons, Q Methodology is attracting attention across a wide range of disciplines and research fields in the social sciences and humanities. Prominent examples of fields in which reviews of Q methodology research have recently appeared include health (Brown 1996), health economics (Baker, Thompson, & Mannion 2006), health education (Cross 2005), and nursing (Akhtar-Danesh, Baumann, & Cordingly 2008); public administration (Brown, Durning &

Selden 2008) and administrative ethics (de Graff & van Exel 2008-9); tourism (Stergiou 2011); management information systems [MIS] (Thomas & Watson 2002); social work (Ellingsen, Størksen, & Stephens 2009); and psychology (Stenner & Stainton Rogers 2004; Stenner, Watts, & Worrell 2008; Watts & Stenner 2005).

But despite the recent efforts of Schrøder et al. (2003) to introduce Q methodology to scholars in audience studies, it remains a largely unknown methodology within this field. This lack of familiarity with Q Methodology among audience researchers is somewhat surprising for two reasons. First, Stephenson himself envisaged a key role for Q in the study of subjective responses to cultural offerings in a research program he termed 'experimental esthetics' beginning in the 1930s (Stephenson 2004/5, 1985) and which he later explicitly applied to reception analysis in advertising and screen audience studies (Stephenson 1976, 1978, 1995/6).[2] Stephenson also elucidated the 'play' theory of mass communication (Stephenson 1967), which continues to inform studies of mass media and video gaming (as cited in Esrock 2005: 248). Second, although most audience researchers remain unfamiliar with Q, this method has in fact been employed in audience and reception research, and within the larger fields of media studies and mass communication studies, since the 1960s. In preparing this paper we identified over ninety scholarly articles, book chapters, and conference papers that use Q methodology for research on audiences, broadly defined.[3] (We have not included unpublished dissertations or theses in this review).

Q Methodology remains however on the margins of audience and media scholarship and goes unmentioned in most recent communication, media, or audience research methods handbooks.[4] It is very briefly mentioned in Lindlof and Taylor's *Qualitative Communication Research Methods* (2011) as a possible component of mixed-methods research. The only media research methodological treatise to discuss Q Methodology at some length is Schrøder et al.'s *Researching Audiences* (2003), which devotes about five pages to Q. Schrøder et al. recommend Q Methodology as part of a proposed critical realist approach in audience research. Q Methodology is quite congenial to critical realism since Q provides a methodological basis for Peircian abductory inference, supporting exploratory research that responds especially well to the logic of discovery (Goldman 1999).

We emphasize that Q Methodology is not to be confused with, or reduced to, its component procedures. Q-mode research (or research aiming to find significant associations among *cases,* so called with reference to the more conventional approach of correlating variables, known as R-mode) is not unusual, and can easily be performed as cluster analysis with widely available analytical software. Also, Q factor analysis, and Q-mode research more generally, are of interest to some quantitative methodologists who are working to establish statistical measures of validity and reliability for research of this type (Dijkstra & van Eijnatten 2009).

In this paper we claim that Q Methodology has great potential to contribute to audience research by providing a comparatively reliable and replicable way of describing patterns of audience response to polyvalent and polysemic texts, a concept that can be extended, at least metaphorically, to broader audience experiences of media consumption and use. Q Methodology places the subjective responses of readers/viewers very firmly at the centre of reception analysis. We emphasize that Q Methodology makes no assumptions about the truth, accuracy, or appropriateness of various audience interpretations of particular media texts. Thus we largely agree with Esrock's observation that Stephenson's work serves to remind mass communication scholars that

> [A]lthough media institutions disseminate texts, whether for information or persuasive purposes, ultimately individuals are the consumers of those texts. And ultimately, individual perceptions and interpretations reveal true meaning, no matter what may have been intended. (Esrock 2005: 249)

However, we believe it preferable to restate the principle of Q Methodology's audience-centricity in terms that are agnostic about 'true' meaning of texts. Thus, we suggest Q Methodology provides a unique means of objectively examining 'the relations between and among the "reading positions"' (Barker 2006: 130) of differently-situated audience members.[5] This capacity to illuminate and holistically preserve the integrity of individual subjective viewpoints while identifying similarities and differences among responses within a collective is one of the key reasons why audience researchers should give proper consideration to Q methodology as a research tool.

Q Methodological Procedures and Audience Research

One of the major barriers to the wider adoption of Q Methodology within audience studies is a lack of familiarity with its procedures. In this section we briefly describe the six steps involved in a Q Methodology study (after Stenner, Watts & Worrel 2008), illustrated with examples from Q research on media and audiences.[6] Later, we address the specific utility of this method for accessing and researching audiences online.

The *first step* in a Q study is to formulate the research question. Since Q Methodology is an exploratory and small-scale approach, it cannot test a hypothesis as formulated by researchers who look for statistically probable associations among independent and dependent variables. Instead, Q lends itself to research questions 'that have many, potentially complex and often socially contested answers' (Stenner, Watts & Worrel 2008: 219), and focuses on identifying and interpreting respondents' accounts, meanings, understandings, and viewpoints. For example, Carlson and Trichtinger (2001) investigated audience responses to the portrayal of a racial incident in an entertainment television show. They asked:

> Are the meanings of messages open to interpretation by viewers or do viewers uniformly 'receive' identical messages from the mass media? ... We are interested in how viewers 'read' the messages presented by the program and whether there were a variety of readings. (Carlson & Trichtinger 2001: 255)

The *second step* in a Q study is to generate the list of items to sort (the Q sample), which is a broadly representative sample of items drawn from the wider discursive field that surrounds the issue or topic under investigation, known as the *concourse*, 'which consists of all that can be thought and said about a situation, event, or phenomenon' (Durning & Brown 2007). This is a philosophically significant operation in Q because the concourse is regarded as the condition, the enabler, and the evidence of subjective communicability. Such an approach is also consistent with the post-structuralist view that meaning is inherently social and contextual, and that audience members must inevitably draw on discourses of the wider social world in constructing and articulating an account from their own unique location. As Stephenson expressed it:

> The paradigm is that communication is ubiquitous, wherever humans are alive: It is intrinsically subjective and schematical in structure and function; the self is central to it; and as a consequence vast numbers of problems in nature can be examined subjectively as problems of meaning and communication, prior to any objective approach to them. (Stephenson 1984: 39).

It is this insistence on subjectivity as self-referential within a field of discourse produced by other selves that makes Stephensonian Q Methodology attractive to post-positivist, critical realist and post-structuralist scholars alike, allowing Q to be situated as a methodological step that can usefully precede hypothetico-deductive investigation.

In this second step, the researcher typically locates a concourse in individual or group interviews, contributions from respondents, or published material. For example, Farquhar and Meeds (2007), in their study of types of fantasy sports users, collected statements from online editorials. For research on many topics, with the rise of the Internet it has become quite feasible to locate a concourse in listservs, blogs, electronic publications, online discussion groups, and social network affinity groups. In our research on audience responses to *Avatar* (Michelle, Davis, & Vladica, forthcoming), we created our Q sample from statements gathered from professional and lay film reviews, online *Avatar* fan message boards, Facebook group discussions, international news coverage, and media commentary surrounding the film. The key is to capture a wide diversity of possible statements regarding relevant aspects of the issue under investigation, and usually this entails collecting many statements initially – in our case, more than two hundred and fifty obtained from a wider cultural trawl of the discursive field surrounding *Avatar*.

Q Methodology does not require that the items that are sorted be written statements. Stephenson proposed Q sorting with sculpture, artwork, statements, or images. Many researchers have used images to form the Q sample in Q studies, including Kinsey's (1993) use of *The Far Side* cartoons to study humor communicability, Kwon and Kim's (2006) study of symbol mark preferences, O'Neill and Nicholson-Cole's (2009) research on engagement with climate change using visual and iconic representations, Alessandri, Yang, and Kinsey's (2006) investigation of the visual identity of a university, Harriss and Reber's (2003) study of viewer typologies in which names and logos of television channels were sorted, Rhoads' (2009) use of 38 photographic stills from a film to investigate viewer responses, Hogan's (2005) use of images to examine metaphors of the Internet, and Schabel et al.'s (2009) comparison of subjective and objective evaluations of smile aesthetics. Other items sorted in Q studies of audiences and media include names of science fiction authors (Lindlof, Coyle, & Grodin 1998) and names of television programs (Atwood 1968). The most complex Q sample reported in the literature on communication, media, and audiences is Grosswiler's (1992) multimedia Q sort to investigate McLuhan theory. Grosswiler's Q sample included items from newspapers, magazines, literature, art, and poetry, as well as audio and video recordings - a technologically challenging research design in 1992, but increasingly feasible today using digital media. In a subsequent study, Grosswiler's respondents sorted slides of magazine and newspaper front pages, videotapes of television program excerpts, and audio tapes of radio program excerpts (Grosswiler 1997).

After collecting statements or other items that adequately represent the concourse, the researcher must then select from this collection the set of stimulus items to be used in the research study, the Q sample. Because respondents must compare each item with all other items, and the number of possible pairwise comparisons is vast, the Q sample usually does not exceed fifty or sixty items; studies using smaller Q samples of three dozen items are common, while studies using Q samples of more than one hundred items are rare.

The researcher may elect to use an unstructured or a structured Q sample. An unstructured Q sample is one in which 'items presumed to be relevant to the topic at hand are chosen without undue effort made to ensure coverage of all possible sub-issues' or underlying factors (McKeown & Thomas 1988: 28). For example, Smith's (1985) analysis of viewer responses to Diane Arbus' photos used a Q sample with an unstructured design. In an entirely unstructured Q sample, items are selected randomly. A structured Q sample, on the other hand, adopts a design that reflects categories the researcher apprehends in the concourse or which is based on prior theory.[7] Examples of Q research with inductive Q sample designs (having one theoretical dimension) include Dewar, Li, and Davis' (2007) use of travel brochure photos to investigate cross-cultural travel preferences, Brown's (1977) study of reader responses to Golding's *Lord of the Flies*, and Khoshgooyanfard's (2011) study of viewer responses to an Iranian television serial. Deductive Q sample designs have two or more theoretical dimensions, giving rise to categories (cells) with specific theoretical

significance for which the researcher selects representative items from the concourse. Carlson and Trichtinger's (2001) study of viewer responses to the portrayal of a racial incident in an episode of the television serial *Law and Order* included two positive and two negative statements about each character, and twelve statements about the message or meaning of the show. Our cross-cultural study of audience responses to *Avatar* used a deductive Q sample reflecting our interest in testing a particular theory, Michelle's (2007) Composite Multi-dimensional Model of audience reception. For each of the four theorized modes – transparent, referential, mediated, and discursive – and their subcategories, eight items were chosen from a much larger inductive sampling of the wider concourse. Other studies using multicategory structured Q samples reflecting theoretical concerns include Bormann, Knutson, and Musolf (1997), who used all possible combinations of four basic theoretical dimensions of dramatic narratives (reality, time, morality, and emotion) to construct 54 narratives for the Q sample.

Which is preferable, a structured or an unstructured Q sample? Many insightful Q studies of audience response using unstructured Q samples have been published. On the other hand, when discursive dimensions of a theme or issue are not theorized well enough to permit conceptually justified selection of items for a Q sample, a weak Q study may result. Some of the ninety or so papers we reviewed for the present study, especially ones published three or four decades ago, offer no rationale for the selection of items in the Q sample, do not include the Q sample in the published article, and provide only brief a-theoretical re-description of identified viewpoints. They thus contribute to theory neither through Q sample design nor through interpretation of results. Our sense is that at this point in the development of audience research using Q methodology, structured Q samples are generally preferable to unstructured ones because a systematically structured Q sample provides an explicit link to theory. This is usually regarded as the way to bridge the gap between quantitative and qualitative research (Kerlinger 1972), but it could also serve to bridge the gap between Q's structured empirical version of qualitative research, and theory produced by more pronounced idiographic research traditions such as textual analysis or ethnography.

In the *third step* of a Q study, the researcher selects the group of respondents, known as the person-sample or P set. Like the Q sample, design of the P set has theoretical significance. Q Methodology is not suitable for identifying probable causal relations or for estimating the distribution of observed viewpoints throughout a larger population. Instead, Q Methodology seeks to identify and interpret subjective viewpoints. Thus in a Q study, respondents with potentially differing points of view are non-randomly selected by applying purposive sampling. Q studies do not require large populations of respondents: most Q studies have between two and five dozen. P sets of greater than six or seven dozen are uncommon - although our own *Avatar* study included 120 respondents.

P sets may be based on factorial design analogous to the design of Q samples. For example, one might select respondents to ensure diversity by gender, age, education, political or religious orientation, expertise, and so forth (McKeown & Thomas 1988: 38-39). Examples of factorial design of P sets in Q research on audiences include Parker's (1994-1995) investigation of story-listeners' subjective responses to live reading of the Gospel of Mark's *Passion-Resurrection* narrative, which recruited respondents by gender, age, theological orientation, and story-listener experience, and Thomas, McCoy, and McBride's (1993) investigation of public responses to the televised Clarence Thomas/Anita Hill 'sexual harassment' hearings, based on a 2x2 (race x gender) P set. Other P set designs in Q research on audiences include a group of participants in a training session for domestic violence mediators, recruited for a study of responses to performance art with a related theme of violence (Maxwell 1999), passers-by in urban and rural areas in Liberia recruited for an investigation of post-conflict mobile telephone use (Best et al. 2010), participants recruited in online discussion fora in Kim and Lee's (2003) research on adopters of DVD home theaters, and more than a few students who viewed a film in a classroom setting (Davis & Vladica 2010; Rhoads 2008; Stephenson 1978).

In the *fourth step* of a Q study, each respondent is asked to create a model of his/her viewpoint using the items the researcher has selected from the concourse. Respondents rank the numbered items in the Q set according to a condition of instruction, such as from 'most like my point of view' to 'most unlike my point of view' or 'most strongly agree' to 'most strongly disagree'. The convention in Q Methodology is that the items be sorted into a quasi-normal distribution, i.e. roughly in the shape of a bell curve, which can have nine or more degrees of agreement, with the neutral or indifference point in the middle, as in this example of a thirty-two item sort:

Most strongly disagree								Most strongly agree
-4	-3	-2	-1	0	+1	+2	+3	+4
Items 2	3	3	5	6	5	3	3	2

Respondents are asked to first sort the items into three piles: those with which they are in general agreement on the right, those with which they are in general disagreement on the left, and those about which they are neutral or indifferent in the middle. Respondents then select the items with which they most agree and most disagree, placing these in the set distribution, then working their way toward the middle (see Brown 1989; McKeown & Thomas 1988; or Stenner, Watts & Worrell 2008, for a fuller description). The positions of the statements or items are recorded. The Q sort is usually administered in person, on a flat table surface, and is followed by questioning respondents about their reasons for selecting the most agreed and most disagreed items, a crucially important step that aids the researcher in interpreting the results. However, of particular relevance to this special issue is the fact that Q research is now beginning to appear online, and has considerable potential

as a methodologically robust online research tool with both qualitative and quantitative dimensions. Below, we discuss our experience in conducting an online Q study.

In most Q studies, all respondents are asked to sort the Q-sample items according to the same condition of instruction. However, researchers may ask respondents to sort the same Q sample items several times according to different criteria or conditions of instruction, to represent several specific circumstances. Although this research strategy is infrequently found in Q Methodology applications in audience studies, it can yield very revealing results about dynamics of subjective response to richly symbolic cultural discourse.[8]

The *fifth step* in a Q study is data analysis and factor estimation. The procedure is to create a matrix of correlations among the set of Q sorts - by person, not by item - which is then factor analyzed to identify groups of respondents whose Q sorts are significantly similar to each other, and significantly different to those of other groups. Before computers became readily available this was an onerous and time-consuming procedure, but it is now very accessible even to researchers who are not mathematically inclined. The researcher can use any statistical software that performs factor analysis, but dedicated Q Methodology software programs are available that facilitate data manipulation and analysis immensely. PQMethod is available for free (readers are referred to the Q Method website at www.qmethod.org for hyperlinked resources). PCQ, a commercial software package, is also widely used. Figure 1 shows a screenshot from PCQ in which the distribution of individual responses on two factors is displayed. In this case, Factor A is represented by the vertical axis and Factor B by the horizontal axis. The dotted lines represent the 99% confidence level, so sorts that are not significant are closer to the zero point. It can be seen that Factor A is slightly bipolar.

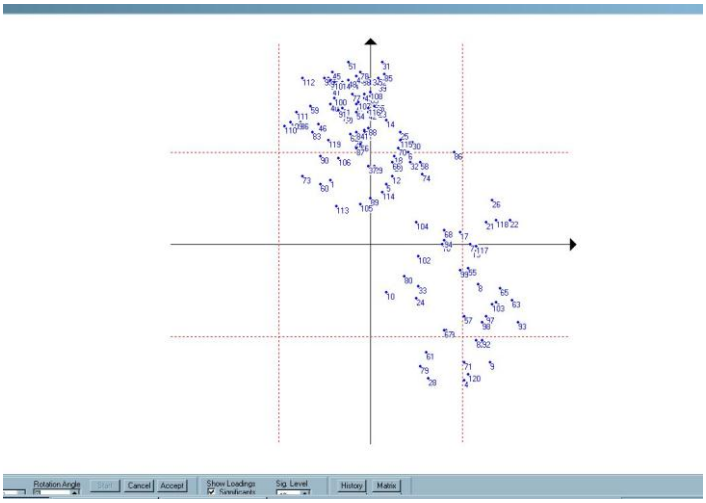

Figure 1: Screen shot from PCQ showing two factors, the number of each sort, the 95% level of confidence, and 'negative' sorts on Factor A, and the likely confounded sorts (lower right-hand quadrant).

In performing the analysis and selection of a factor solution, certain statistical and technical considerations must be taken into account. Ordinarily one seeks the most parsimonious factor solution, with the smallest number of factors defined uniquely by at least several sorts. The procedure and the technical considerations are described in detail in Brown (1980) and McKeown and Thomas (1988). Ongoing methodological discussions take place among Q researchers regarding the most suitable type of factor analysis and factor rotation method.[9] Researchers seeking technical or methodological guidance on these matters will readily find it in the literature cited above and on the Q Method listserv.

The *sixth step* in a Q study is interpretation of the results, the quality of which depends on the skills and insight of the researcher, who draws on his or her accumulated knowledge, expertise and intuition to interpret the viewpoints that emerge through factor analysis, closely guided by the particular configuration of items in each typal array, along with the qualitative explanations provided by respondents about their reasons for agreement or disagreement with the items they have chosen to rank most highly. Illustrative examples of their comments are usually incorporated into the written narrative and are very helpful in confirming the validity of the interpretation. The result is a more holistic representation of a complex, multifaceted yet coherent viewpoint that is commonly shared by a group of individuals.

Thomas and Baas' (1993, 1994) investigation of reader responses to the romance novel *The Bridges of Madison County* [BOMC] is exemplary, well illustrating how Q Methodology can yield new insights that challenge prevailing scholarly interpretations of responses to a media text. Thomas and Baas sought to determine how actual reader responses engage with existing theory about the appeal of romantic fiction. The novel tells the story of a devoted Iowa farm wife and mother who, while her husband and children are away, unexpectedly has an intense four-day love affair with a visiting photographer. In spite of everything she elects to remain with her family, for decades commemorating her brief period of romantic happiness with a ritual annual visit to a covered bridge. The novel was a best-seller for over a year, leading to a film that in turn induced film tourism to a small town in Iowa.

Thomas and Baas locate their research within the then-existing body of literary criticism of the popular romance genre, including influential contributions by Tania Modleski (1981) and Janice Radway (1984). Critics of popular romance were encountering a major problem: how to explain the enormous popularity of the genre among women, particularly in light of claims that romance fiction's mass-produced fantasies reinforce patriarchal constructions of 'passive' feminine sexuality and help reconcile women to their subordinate social role. Critics turned to textual analysis, feminist theories of patriarchal recuperation, psychological theory imputing issues of ego-boundary modification or rage, covert psychobiological complicity in the seduction, and Proppian analysis of informants' accounts to explain the genre's appeal. However, as Thomas and Baas (1993: 17) observe:

> … literary criticism of the popular romance genre has, heretofore at least, foundered in its quest to develop a cumulative body of scholarship on such matters. Indeed, scholarly assessments have failed to this point in even reaching consensus on what it is that romance readers are experiencing when they partake of the 'complex social act' of reading a love story.

Thomas and Baas identified a broad concourse of statements about the novel and from it selected a Q sample with a 3x3 balanced factorial design. The first dimension is evaluative, with three categories denoting positive, negative, and intermediate or mixed appraisal. The second dimension is topical and contains three types of references:

> The first … is for comments centered on the characters of Robert and Francesca, the lovers whose story Waller recounts in the pages of BOMC. The second … category incorporates references to non-characterological aspects of the narrative such as plot and setting as well as possible literary intent by the author. Finally, [the third] level … is reserved for commentary that speaks to the novel's overall appeal and/or effect on the reader without specific mention of particular plot or character ingredients included. Contained in this last category, therefore, are a number of statements that address … the "story-of-the story" of BOMC. Cross-classifying these two three-levelled dimensions produces a nine-celled framework for ordering, on a strictly, pro tem basis, the vast welter of commentary spawned by the Waller romance. (1993: 7)[10]

The P set of 58 persons was mainly recruited by word of mouth and consisted predominantly of well-educated women who read for enjoyment.

In their results, Thomas and Baas identified four readings of *The Bridges of Madison County*, which can be summarized only in very (over)generalized terms here. In the dominant version, readers felt 'swept away' and were fully engaged with the narrative, experiencing the story and characters as though real. In the second version, readers expressed mild enjoyment in what was seen as a pleasant, quick read, but were not deeply engaged in the narrative and did not believe it merited deeper reflection. The third version was highly critical of the novel's literary quality and questioned the reasons for its commercial success. The fourth version found the wife's behavior implausible as well as morally questionable. Significantly, female readers in the first group did not identify solely or primarily with the female protagonist, as previous theory had assumed. Instead, the story worked best for readers who identified with the hero *and* the heroine, giving credence to 'placeholder' theories of reader response. This insight is of considerable significance in light of ongoing

debates over the nature and role of identification within reader response theory, as Thomas and Bass (1993) discuss in some detail.

This study thus illustrates that some readers adopt more distant and critical perspectives on romance novels, highlighting quite different features such as textual realism, literary quality, and questions of morality in ways that not only disrupt pleasurable engagement but suggest these readers are effectively constructing a radically *different* reading of the same text. This preservation and elaboration of interpretive diversity is what differentiates Q methodology from other audience research on romance readers, the most influential of which has been the intensive qualitative analysis offered by Janice Radway (1984). While Radway explicitly acknowledges - at a theoretical level - that different readers may interpret romance fiction in diverse ways, her chosen methodology contravenes this understanding, since as Thomas and Bass note, she sought to reconstruct from her qualitative data a "composite Smithton Reader" and further, applied "'Propperian' techniques in an effort to discern the common elements of plot structure that distinguish good from bad romances as judged by her readers" (Thomas & Bass 1993: 22). In effect, and not discounting the very significant contribution of Radway's work, the true extent of textual and interpretive complexity encountered in this research was progressively downplayed through processes of methodological reductionism designed to identify an 'ideal' reader and typical reading experience of an 'ideal' text. The analysis generated in the process, some suggest, does not necessarily represent the experience of romance reading by actual readers (see Krentz 1992, cited in Thomas & Bass 1993).

Since Q is explicitly designed to preserve the integrity and richness of individual participants' subjective viewpoints, it is less likely to produce findings that discount or minimise difference and diversity; rather, the method renders such diversity visible and comprehensible in its full complexity. Furthermore, the purpose of interpretation in Q is not to arrive at a single authoritative 'truth' of a social phenomenon from the perspective of the theorist or scholar. Rather, interpretation aims to illuminate the inherent relativity of *all* perspectives on a given topic while privileging none, each perspective being collectively defined by those who shared the same general subjective viewpoint, rather than through the eyes of another.

To reiterate, then, interpretation in Q requires drawing connections and linkages between sets of statements that, read collectively and holistically, offer insight into the underlying shared subjective orientation that necessarily governs the independent construction of significantly similar Q-sorts by different individuals. This step involves considering the ranking of different statements *in relation to* each other, acknowledging that these statements can themselves be subjectively interpreted and deployed in subtly different ways, depending on the perspective of the respondent. It is thus the specific configuration of items that needs to be considered. For example, two groups in our *Avatar* study strongly

agreed with the statement *"Avatar* expresses the White Messiah myth where some White guy becomes the 'most awesome' member of a non-White culture, and was quite patronizing," but for very different reasons. For one group, the statement was read *discursively* as having overtly racist implications, and this was evident from comments such as: "That was the point of the movie. Athletic spectacular White man outshines the indigenous", and

> This happens in Hollywood movies all the time…some White man comes in and saves the poor helpless (almost stupid) savages and teaches them a thing or two…the film, I assume, is supposed to be anti-colonialist and anti-racist but it subtly implies that, in the end it takes a White man to get the job done.

This group expressed the highest level of critical engagement with the message content of *Avatar*. For the second group however, criticisms of the White Messiah myth were expressed in the context of an assessment of the film's *aesthetic and narrative quality.* Rather than expressing concern about the film's meaning and possibly racist connotations, these respondents regarded the White Messiah myth as an over-used narrative trope: "*Avatar* is a rehash of *Pocahontas* and *Dances with Wolves*, with an added sci-fi element that doesn't alter the old "White Messiah" story significantly". Indeed, for this particular group, serious engagement with the message content of *Avatar* was clearly subordinated to evaluations of *Avatar*'s form and aesthetic quality (see Michelle, Davis and Vladica, forthcoming).

Traditional qualitative surveys are unable to capture such subtle distinctions; it is often very difficult to discern whether those who registered similar levels of agreement or disagreement with a particular item did so for the same reasons. With Q, it is possible to assess specific responses within the context of participants' broader subjective perspective, and to consider their response to one item in light of their responses to all others as well as their qualitative responses, resulting in a more holistic interpretation. And while traditional qualitative methods such as focus groups potentially allow for fulsome expressions of agreement and disagreement, practical difficulties arise when attempting to extensively probe all individuals to solicit more detailed and nuanced explanations for their own beliefs and opinions. Nor it is easy to gauge and record individual responses to a constellation of related issues or questions *simultaneously*. On both counts, Q offers significant advantages to traditional methodological approaches.

In summary, in interpreting and presenting the results, the researcher synthesizes all of the data to 'tell the story' of how individuals who loaded significantly on each factor 'typically' responded to the condition of instruction, addressing areas of strong agreement, disagreement, and neutrality and noting points of similarity and difference between the factors. In Q terms, these viewpoints usually do not represent the views of a particular

individual. Rather, they are a constructed aggregate that represents the *shared subjectivity* of those who loaded significantly on that factor.

Online Audiences and Online Research Using Q Methodology

As noted above, advances in software and connectivity now make it possible to administer Q Methodology surveys online. This substantially increases the reach and reduces the cost of Q research, although it raises two key questions. The first is whether sorting items on a computer screen reproduces the Q sort procedure sufficiently well in terms of visibility of items, tactility, and the researcher's administration of the Q sort process. The second question is how delivery of online Q studies effects the composition of the P set.

Software for online Q sorting has been available for about a decade. Presently websites specializing in Q Methodology provide links to a half dozen software programs for performing Q sorts online.[11] These programs include Q-Assessor, WebQSort, Web-Q, QSorter, FlashQ, and Hotspot.[12] The earliest offerings in Java do not offer a close analogy to the physical Q card sorting procedure on screen, but instead use radio buttons which the respondent clicks to select items and rank them by moving them from one pile to another. Examples are Q-Assessor[13] and WebQ[14]. A more recent offering, FlashQ, reproduces the card sorting procedure on screen, allowing for dragging, dropping, and placing the cards on the item distribution grid typically used in offline Q studies.

Although use of online Q sorting tools is no longer a novelty, it is not yet a widespread practice. A search on Google Scholar identified only 54 papers that report using one of the half-dozen online Q sorting programs mentioned above. Apart from our own paper (Michelle, Davis & Vladica, forthcoming), only four papers among the one hundred or so Q studies on audiences and media in the bibliography report administration of online Q sorts (Anandarajan, Paravastu, & Summers 2006; Hazari & Johnson 2007; Hogan 2005; and Westwood & Griffiths 2010). None mentions any particular problems or challenges encountered with online Q surveys.

Further, the scholarly literature contains very little discussion of online Q sorting. We found only two papers on this subject: Jurczyk (2003) and Reber, Kaufman, and Cropp (2000). Jurczyk sees three possible difficulties with web-based Q sorts: 'the lack of direct communication during the sort between the administrator and subject and the technical skills required by a subject to complete a sort' and the 'amount of visual space required for sorts with significantly large numbers of items' (Jurczyk 2003: 5). Reber, Kaufman, and Cropp report the results of two validation studies of Q-Assessor in which respondents completed computer-based and paper-based sorting. The researchers found 'no apparent difference in the reliability or validity between the methods' (192).

Recent discussions on the Q-method listserv indicate that the Q Methodology research

community is not entirely at ease with online administration of Q sorts. It is felt by some Q researchers, and not the least accomplished, that there is substantial risk that overreliance on technology will negatively affect research design and implementation, and that the removal of the researcher from the sorting exercise has deleterious consequences on observation and interpretation. One proposed solution to the latter problem is to retain live administration of Q sorts with the researcher present via a video link. We note that migration of Q sorting from paper to digital platforms does not necessarily imply remote administration of Q sorts, and in fact much interest is being expressed on the Q Method listserv in use of face-to-face computer-based Q sorting in classroom and field research settings.

Because of the dearth of readily available information about experiences in conducing online Q studies, our experience using FlashQ to conduct an online cross-cultural survey of audience receptions of *Avatar* may be of interest to audience researchers. FlashQ is a free application created by Christian Hackert and Gernot Braehler. Because the software requires slight modification to accommodate Flash updates, we recommend use of Rick Hoodenpyle's version, which is available on the Q Method website (http://qmethod.org/links). The source code and a PHP back end are available at http://www.hackert.biz/flashq/downloads/. Interested readers may also wish to view our *Avatar* Q sort survey and demographic questionnaire, hosted at http://flashq.rcc.ryerson.ca/flashq5/Avatar.html. While this survey is no longer live, the reader can still experience the process of undertaking an online Q sort.

FlashQ runs on a HTTP server, and PHP must be enabled. A permanent IP address or domain name is required. Despite our very modest technical capabilities, we experienced no difficulty installing FlashQ on a PC running a Sambar or Apache server, and modifying FlashQ's XML code to accommodate our research design (regarding number of cards, statements, required distribution of sorts, and qualitative or open-ended comments). We did, however, experience difficulty installing the software on a second PC. This difficulty was apparently due to the versioning problem mentioned earlier. For reasons of security and maintenance we decided that subsequent implementations should be on the institutional server, not on PCs in the lab. Our resident computer jedi had no difficulty implementing FlashQ on our heavy-duty institutional server and arranging FTP access so that we can manage and modify the program as needed. Any number of projects can run concurrently by creating different directories and putting suitably modified FlashQ XML files in each.

FlashQ can be configured so that it writes the results of each individual sort to a document, e-mails each individual sort to the researcher, or writes the results in a comma-separated values (csv) file that is easily imported into Excel. In the latter case FlashQ writes the results to one file as they are submitted by respondents, which is very convenient. With some care, data from a FlashQ data file can be copied and pasted directly into a PCQ data file,

eliminating the need for tedious transcription. It is also very useful to have the FlashQ data in an Excel file for cleaning and analysis.

Figures 2 through 6 are screenshots of the sorting process with FlashQ in our *Avatar* project. Figure 2 shows the online informed consent agreement. Figure 3 shows the procedure of placing all statements into one of three categories: agree, disagree, or neutral. Figure 4 shows how the statements are then rank ordered according to the forced distribution. Figure 5 shows the text boxes in which open-ended qualitative responses are collected after the statements are sorted. Figure 6 shows the accompanying online questionnaire for collection of personal details.

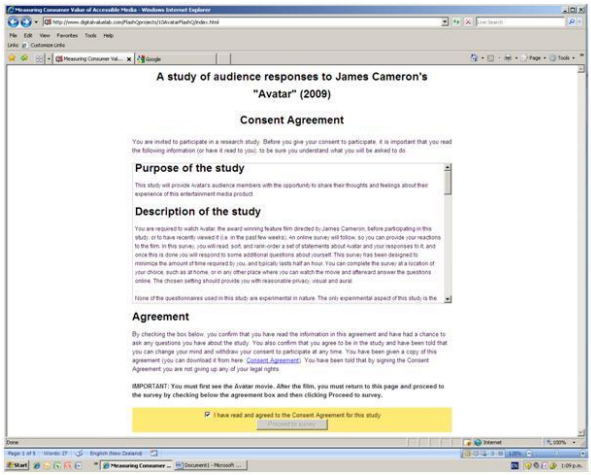

Figure 2: Consent Agreement

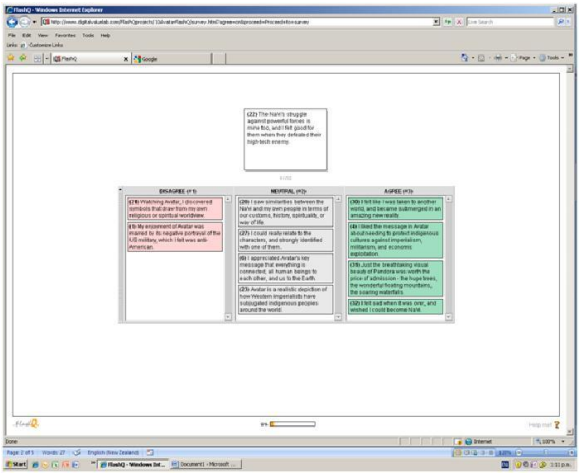

Figure 3: Card sorting with FlashQ

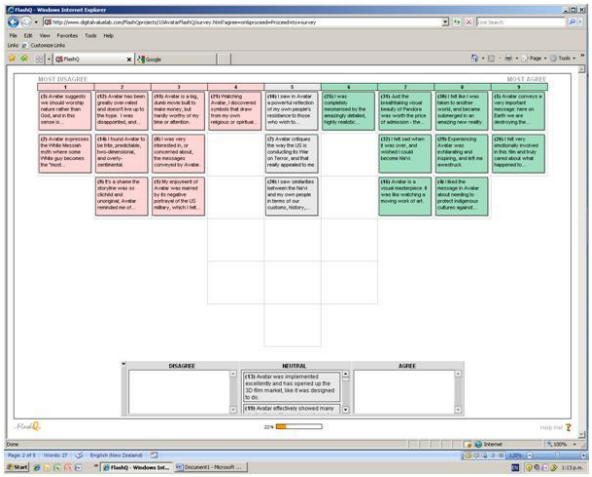

Figure 4: Placing items in the forced distribution in FlashQ

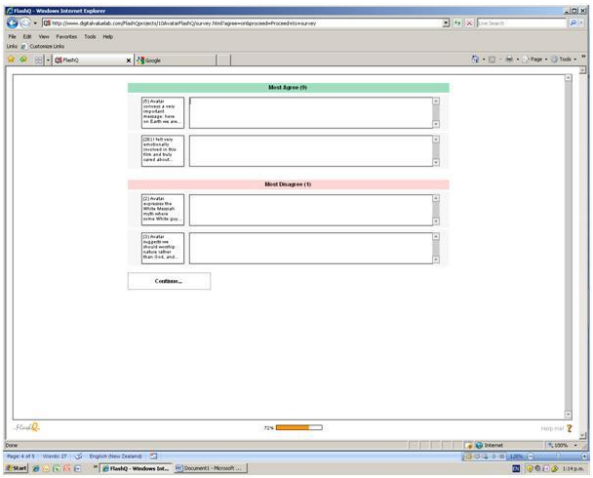

Figure 5: Open-ended qualitative responses

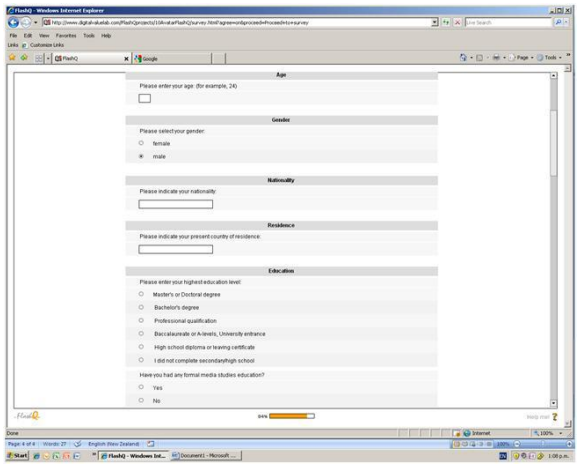

Figure 6: Accompanying personal details questionnaire

In our online survey of responses to *Avatar*, FlashQ performed admirably. Some of the challenges we encountered were as follows:

- Lengthy statements are not entirely legible on the 'cards' in FlashQ, which places constraints on the selection of items as they need to be more concise than in naturally occurring discourse to ensure easy readability on screen.
- Due to lack of familiarity with the encoding used in FlashQ, we initially did not realize we could very easily alter the number of items in the Q set. This placed some constraints on our research design, and meant difficult decisions needed to be made about which items to exclude. However, this aided the process of reducing redundancy in the items, while also helping to offset the counterbalancing problem that having large numbers of items makes participation more onerous for respondents, potentially increasing the dropout rate.
- To conform to our university Research Ethics Board requirements regarding informed consent, we had to place a comprehensive explanation of respondent rights and risks at the beginning of the survey (see Figure 2) - even though respondents are anonymous. While such processes are obviously important, the formality of an official consent process in the generally more informal online context may have frightened away some potential respondents, as our server logs seem to suggest.
- Online surveys naturally attract more highly motivated respondents and are likely to over-represent the views of those who have a particular interest in the subject matter. This may amplify the number of respondents who express one point of view. As we found with the *Avatar* survey, fans rather than critics were more motivated to participate: over half of the significant sorts reflected the same very positive viewpoint, with many of these participants being self-declared fans of the film. Obtaining a sufficiently diverse P set requires issuing numerous invitations in a variety of fora. In our case, to counter this potential bias in favour of *Avatar's* fans, we actively encouraged participation from a wide range of viewers, including *Avatar's* critics, posting invitations

on the highly active '*Avatar* Sucks!' Facebook group message board and on general film discussion boards such as Rotten Tomatoes.com. Special interest groups were targeted via Facebook groups such as Survival International, Military.com, the Indigenous Environmental Network, Positively Republican, Rainforest Action Network, and Conservative Americans United. Server logs suggest this strategy was successful in recruiting a more diverse range of respondents.

- Because an online survey solicits participants who are self-selecting, online P sets may need to be larger than offline P sets, and the researcher may choose to select representative sorts from among a larger number that are submitted. Doing so requires some knowledge of the socio-demographic characteristics and discursive affiliations of respondents; this information can be easily obtained through the personal details questionnaire that accompanies the Q sort in FlashQ.
- While open to respondents of any nationality anywhere in the world, our Q sample and accompanying documentation were available online in English only. Obviously, a cross-cultural study would ideally include other languages, but the complexities of creating a suitably comparable Q sample in multiple languages exceeded our resources. Potentially, however, parallel multi-lingual Q samples could be constructed and administered relatively easily in FlashQ. One of our graduate students recently completed a trilingual Q study in such a way.
- Since respondents were primarily recruited through fan networks and online communities, our sample consisted of people who are active on the Internet. Recent estimates suggest that this now accounts for 75-90% of people in most Western developed nations (internetworldstats.com, 2009). Nonetheless, online research of this nature is likely to over-represent the views of what Hannerz (1990) called internet savvy '"cosmopolitans": people whose life orientation revolves around global interconnectedness rather than their local communities' (Kuipers & Kloet 2009: 104) – and these are likely to also be relatively economically empowered individuals, especially in developing nations. This bias appears to be a significant limitation of online research generally, and was evident in our *Avatar* sample. Aside from a large number of university students, relatively few respondents reported earning low incomes or having non-white collar occupations.
- Subsequently, one of the authors supervised a graduate student who used FlashQ for administration of online Q sorts for purposes of thesis research on communication policy. Because this research involved issuing invitations to specific individuals, we received feedback from many respondents about the sorting experience. Younger respondents are more enthusiastic about online Q sorting than older respondents. Some respondents, after spending considerable time completing the sorting task, mistakenly hit the 'Back' button on their browser and lost their data. FlashQ does not permit respondents to save an incomplete survey and return to it later. Other respondents reported mysterious and still-unexplained screen freezes and an inability to send the completed sorting data to the server. As a result of these difficulties, the

attrition rate among respondents was somewhat higher than expected.
- A looming challenge is administration of Q sorts on mobile devices. Flash and Apple products are notoriously incompatible.

Counterbalancing the challenges of administering Q sorts online are some major advantages for audience researchers, including the ability to access geographically dispersed and fragmented niche audiences for media texts, and the potential to explore cross-cultural and cross-national differences in audience response in a highly structured, robust manner. One particularly promising area relates to the ability to incorporate hyperlinks to online images or video clips in FlashQ. It is very easy to refer respondents to an online video clip to view before commencing their Q sort (see Davis & Vladica 2010). And, in a major departure from online survey research, images or multiple video clips could eventually *themselves* be sorted in FlashQ by including a thumbnail image and hyperlink in each 'card'. FlashQ may thus have numerous applications for use in reception research with other forms of visual media that are readily available online – such as images, advertisements, music videos, and YouTube videos – offering greater avenues for creative research practice than traditional methods might permit. We hope to explore options in this direction in future.

Finally, one other advantage of undertaking Q studies on or off line is the potential capacity to link shared subjectivity to aspects of social location in a more methodologically rigorous and structured way than normally occurs in the case of qualitative audience research. Linking divergent receptions to aspects of social location is an ongoing area of interest for audience researchers. Q Methodology has particular potential to identify whether certain 'types' of viewers share similar orientations or attitudes toward media products based on *actual* similarities in their responses, rather than any *pre-assigned* categorization of individuals determined by what the researcher assumes are the most salient aspects of shared identity or group membership – as typically occurs in focus group research, for example. Based on responses to a separate questionnaire attached to the FlashQ sort seeking information about aspects of respondents' social location, sharing a generalized viewpoint can, at least theoretically, be linked to other commonalities in terms of socio-demographic characteristics, cultural competencies, shared experiences, and discursive affiliations. Furthermore, since identification of relevant aspects of identity takes place 'after the fact', working backwards from factors to identify attributes that are shared by those who rated highly for that factor, it is possible to explore the particular aspects of identity, or combinations of social group membership, that are linked to a given viewpoint. This is a rather more promising means of establishing the relationship between social location and audience interpretation than has typically occurred in the audience research field to date.

That said, there are some limitations in this regard, as the number of participants in a Q study is usually too small to permit identification of statistically significant associations

between viewing position and social location.[15] Indeed, depending on the size of the P sample, the number of participants linked to each factor may be relatively small. Nonetheless, highly suggestive associations were observed in our *Avatar* research between particular modes of reception and shared socio-demographic characteristics such as gender, age, and ethnicity, and other factors relating to relevant life experiences and discursive affiliations, including level of education, religious belief, political activism, and military service (see Michelle, Davis & Vladica, forthcoming).

Conclusions

In this paper we have sought to (re)acquaint audience researchers with Q Methodology. We reviewed Q's methodological principles and operations, illustrated with references to audience and media research that has used Q, and provided a bibliography which we believe is comprehensive at the time of writing. Finally, we briefly described the state of online administration of Q sorts and we shared our experience of using FlashQ to conduct an online survey of cross-cultural responses to *Avatar*.

Given the inherent suitability of Q methodology for research aimed at understanding the subjective responses of diverse audiences, it is somewhat surprising that Q has been largely forgotten by audience researchers, particularly since media and communication studies were William Stephenson's adopted home after his departure from academic psychology. One possible reason for this lack of profile may be that the field of media studies has historically been somewhat fragmented into highly quantitative and highly qualitative wings, with relatively little overlap between approaches informed by the media effects tradition on the one hand, favoring quantitative and experimental approaches, and British Cultural Studies on the other, with its more qualitative, ethnographic, and critical bent. Thus, Q Methodology's relative invisibility is at least partly due to the fact that, from the perspective of these still quite divided qualitative and quantitative research traditions, Q is neither fish nor fowl.

Yet scholars from both traditions could clearly benefit from adding Q methodology to their suite of research tools. We have argued that Q excels at the task for which it was designed -- investigation and description of human subjective viewpoints -- and that with some care it is accessible to researchers who otherwise would not consider using an approach 'fortified' by statistical analysis. We have further suggested that Q can help to resolve an ongoing problem in audience studies, regarding the need to find a way to make more comparable observations that support stronger, testable generalizations (Barker 2006). Without disparaging either the quantitative or qualitative epistemologies that have brought audience research to where it is today, we suggest (in the spirit of methodological pluralism advocated by many colleagues) that Q can be a very useful addition to the audience researcher's repertoire, since it offers a vital bridge across the qualitative-quantitative divide. As researchers increasingly seek new practices for investigating the activities,

preferences, interactive engagements and subjective responses of online audiences, they are forced to confront new problems of scale, volume, audience fragmentation and dispersal. In this new and increasingly complex digital media age, methods such as Q that draw on the strengths of both qualitative and quantitative traditions become increasingly attractive, and indeed necessary.

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Acknowledgements

We are grateful to Steven R. Brown, Thomas R. Lindlof, and Kim Christian Schrøder for their very helpful comments on earlier drafts of this paper. We also thank the numerous participants on the Q Method listserv who provided references to Q literature in response to our query. Any errors of interpretation or omission are attributable to the authors.

Table 1: Selected Q Methodology studies on audiences and media users[16]

Media audiences	
Audience responses to live performance	Barchak et al. (2003); Maxwell (1999a); Parker (1994-95); Sherman, Blanchard, & Kagel (1995)
Reader responses to literature	Bormann, Knutson, & Musolf (1997); Brown (1977); Brown & Mathieson (1990); Lindlof, Coyle & Grodin (1998); Stephenson (1985); Thomas & Baas (1994)
Viewer responses to screen entertainment	Carlson & Trichtinger (2001), Carolyn Davis (2008); Davis & Vladica (2010); Khoshgooyanfard (2011); Michelle, Davis, & Vladica (forthcoming); Rhoads (2008, 2009); Stephenson (1978)
Listener responses to song lyrics	Maxwell (1999b; 2001)
Mediated political communication	Cragan & Shields (1977); Mansfield et al. (1986); Thomas, McCoy, & McBride (1993); Wattier (1982)
Viewer or reader media preferences or typologies of	Atwood (1968); Boyd (1978); Cathcart (1969); Cheng (1979); Flynn (1971-2); Gutman (1978); Hashim &

media consumption	Meloche (2007); Hindman & Coyle (1999); Lehnert (1982; 1981); Lehnert & Perpich (1982); Lynch & Sassenrath (1965): Morris (2003); Robinson (1975); Ruffner (1975); Schrøder & Kobbernagel (2010); Wenner (1976); Williams & Koepke (2006)
Meanings of cartoons	Bormann, Koester, & Bennett (1978); Kinsey (1993); Kinsey & Taylor (1982); Root (1995); Trahair (2003)
Responses to still visual symbols, images, brands, or landscapes (non advertising)	Allessandri, Yang, & Kinsey (2006); Burt et al. (2007); Davis (2003); Davis & Khare (2002); Dewar, Li, & Davis (2007); Fairwether & Swaffield (2001, 2002); Kwon & Kim (2005); Middleton (2007); Nestorenko & Smith (1984); O'Neill & Nicholson (2009); Schabel et al. (2009); Smith (1985); ten Klooster, Visser, & de Jong (2008).
Responses to advertising	Brouwer (1999); Gustafson, Thomsen, & Popovitch (1999); Lynch & Hartman (1968); Oh & Kim (2005a, b); Popovitch, Gustofson, & Thomsen (1999); Robinson, Gustafson, & Popovitch (2008); Robinson, Popovitch, Gustafson, & Fraser (2003); Gauzente (2010); Sawang (2010); Williams (1975).
Users of media	
Web and Internet use	Anandarajan, Paravastu, & Simmers (2006); Freberg et al. (2010); Hazari & Johnson (2007); Hasan, Meloche, Pfaff, & Willis (2007); Hogan (2005); Kim, Kim, & Kim (2004); Vailaits et al. (2007)
Mobile phone use	Andrews, Drennan, & Russell-Bennett (2005); Best, Wornyo, Smyth, & Etherton (2010); Donner (2004; 2007); Fitzgerald & Drennan (2003); Liu (2008a)
Computer games	Chen, Chen, & Liu (2010); Farquhar & Meeds (2007); Myers (1990); Westwood (2010)
Entertainment media in the home	Kim (2003); Lindlof & Shatzer (1989)
E-books	Hurst et al. (2009)
E-learning	Liu (2008b)
Telecommunications and information systems	Rowe & Struck (1999), Kendall & Kendall (1993)

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Notes

[1] Stephenson's main methodological statement, *The Study of Behavior: Q-technique and its Methodology*, was published in 1953.

[2] Stephenson used Q during his years with market research firms. Brouwer (1999) recounts how Stephenson was the only advertising consultant to speak up in the Ford Boardroom against the design of the Edsel, which customers found disturbing. The Edsel was one of the greatest new product flops in automotive history.

[3] The bibliography may be consulted at http://ryerson.ca/~c5davis/Q-studies-of-audiences.pdf. Please send corrections or additions to Charles Davis at c5davis@ryerson.ca.

[4] For example, Q Methodology in not mentioned in Nabi and Oliver's SAGE *Handbook of Media Processes and Effects* (2009), which contains chapters on qualitative methods and quantitative methods, nor in Jensen's *A Handbook of Media and Communication Research* (2002), Downing et al.'s *SAGE Handbook of Media Studies* (2004), or Wimmer and Dominick's *Mass Media Research: an Introduction* (2011).

[5] Brown and Mathieson (1990) have shown how Q provides a methodological solution to measuring critical reading experiences.

[6] Stenner, Watts, and Worrel (2008) usefully illustrate the steps of a Q study with actual data from a Q analysis of psychologists' viewpoints about the qualitative-quantitative issue. For complete treatment of Q Methodological procedures see McKeown and Thomas (1988), Brown (1980), who provides in-depth discussion of Q's mathematical operations and philosophical foundations, or Stephenson (1953).

[7] Design principles for Q samples are discussed in McKeown and Thomas (1988: 28) and Brown (1980).

[8] For example, see Brown's (1980) intensive analysis of readers' response to the novel *Steppenwolf*. Those interested in applications of Q Methodology to intensive analysis of sources of meaning of symbolic objects should also consult Baas' study of the symbolic meanings of the Constitution for 'Mrs Murphy' (1984).

[9] In Figure 1, the factors were rotated using a built-in routine (Varimax) that maximizes the sum of the variances of the squared loadings, but PCQ and PQMethod also permit so-called *judgmental* or theoretical rotation, in which the researcher discretionally rotates the factor to maximize loading on a Q sort of theoretical significance. For example, one might wish to compare an author's viewpoint to those of readers. On judgmental rotation see Brown (1980) and Brown and Robyn (2004).

[10] The version we cite of the paper is available at http://facstaff.uww.edu/cottlec/QArchive/bomc.htm. A slightly abridged version was published in *Operant Subjectivity* as Thomas & Baas (1994).

[11] See http://qmethod.org/links and http://www.lrz.de/~schmolck/qmethod/webq/otherimpl.htm.

[12] It should be noted that these are data collection tools, not data analysis tools like the previously mentioned PCQ and PQMethod.

[13] A demo may be viewed at http://q-assessor.com.

[14] A demo is available at http://www.lrz.de/~schmolck/qmethod/webq/index.html.

[15] Generalization of Q research only infrequently takes the form of standardized Q sorts of the type used by clinical psychologists for personality assessment, relationship assessment, and other purposes (e.g. Block 1961, 2008). Claims that particular Q sort instruments are universal or 'pantheoretic' are greeted skeptically by Q methodologists in the Stephensonian tradition, who would emphasize indeterminacy in audience response over nomothetic knowledge claims such as those as advanced in mainstream psychology, while affirming the reliability and relative generalizability of Q's results (Thomas & Baas 1992). A more likely strategy would be to employ Q Methodology with an inductive or deductive Q sample first, followed by a survey questionnaire (as in Sawang's [2010] research on perceptions of marketing effectiveness and acceptability of sexually suggestive advertising in relation to cultural affiliation), or investigate other approaches to linking ipsative and normative methodologies such as Q-Block. On the methodological point of joining Q Methodology with subsequent variables-based survey research, see Newman and Ramlo (2010) and the exchange between Danielson (2009) and Brown (2009). For a very useful systematic comparison of the strengths and limitations of two image measurement instruments, Q sort and Likert scales, see ten Klooster, Visser, and de Jong (2008). On Q-Block see the October, 2010 issue of *Operant Subjectivity*.

[16] References to Q research on media *producers* (such as journalists) are omitted.