Demonstrating the Value of Extending Qualitative Research Strategies into Q

Garrett Hutson
Brock University

Diane Montgomery
Oklahoma State University

Abstract. Q methodology has a long and rich history of illuminating human subjectivity involving a variety of topics within many contexts. Taking into account its philosophy and theoretical techniques, Q methodology resembles qualitative research traditions both directly and indirectly, in practice and in theory. Constructing a Q set of statements from the concourse, interpreting results, and generating theory are three areas of Q methodology that harmonize with qualitative research practice and design. The purpose of this discussion is to expand on research strategies that specifically demonstrate the value of combining Q methodology and qualitative inquiry. The two qualitative research strategies used with the results of two Q studies are: (1) qualitative coding used to deepen factor interpretation; and (2) qualitative analysis in case study descriptions based on factor interpretation. Implications for Q methodology theory and practice are discussed.

As a scientific approach for studying subjectivity, Q methodology is a systematic and rigorous approach for understanding the complexity of subjective opinions as they are communicated from personal points of view. The communication of these viewpoints through the sorting of stimulus items, followed by factor analysis, can show points of view that "are waiting and ready for explication" (Allgood, 1999, p. 210). Explicating points of view is a process of qualitative interpretation that involves or demands further inquiry into the subject positions that helped to define the viewpoints and/or additional research strategies that may expand the meaning of what was found (Brown, 1996). Further inquiry, as we will demonstrate in this discussion, may involve qualitative directionality of either moving "inward" toward a more precise understanding of the uncovered viewpoints or "outward" using Q methodology findings as a compass to help chart new research directions.

Interviews, written questionnaires, and other forms of qualitative data collection following Q-sorting procedures have been commonly used to assist or extend factor interpretation and meaning (Brown, 2008). While it is recommended practice for Q-methodology researchers to employ qualitative approaches with factor interpretation, the authors are not aware of illuminations of qualitative techniques or strategies used to extend inquiry through specific steps to show the value of additional inward or outward research directionality. Although the necessity to interpret beyond the literal meaning of individual statements is mandatory, the two strategies presented in this discussion will make direct connections to qualitative inquiry through a template coding system (Crabtree & Miller, 1999) and case study development (Stake, 2005).

By going beyond the abductive work in finding the factor structure, the researcher can reach deeper meaning with a deductive method of coding or induce greater meaning through more ethnographic strategies. As Watts (2009, p. 43) has emphasized, the "processes of interpretation also allow us to understand and explicate the viewpoints or perspectives they represent holistically and to a level of qualitative detail that simply cannot be matched by other methods." While the gestalt or holistic approach to factor interpretation has always been essential to standard Q-methodology practices (Stenner, Watts, & Worrell, 2008), the purpose of this discussion is to expand on research strategies that specifically demonstrate the value of combining Q methodology and qualitative inquiry by: (1) presenting a qualitative coding technique used in a Q-methodological study to deepen factor interpretation and (2) demonstrating how a Q study informed and grounded a qualitative case study design by using subject positions as starting points for further informed inquiry. It is the holistic gap that Q methodology fills as a valuable research strategy; by furthering the depth and inquiry into the interactions of viewpoints uncovered by Q with other qualitative details and approaches, researchers have the potential to widen the spectrum of ways of understanding and studying human subjectivity (Shinebourne, 2009). Finally, this discussion will conclude by further exploring and reiterating what qualitative and Q-methodology researchers can gain by combining research strategies.

Study 1: Text Analysis

The purpose of the study (Hutson, Montgomery, & Caneday, 2010) was to describe the perceptions of outdoor recreation professionals toward place meanings in natural environments. The study involved a P set of 30 outdoor recreation professionals from a variety of locations in the United States with varied professional backgrounds. The Q set consisted of 48 statements and was organized around themes of (1) affect, (2)

cognition, (3) practice, (4) scale, (5) social actors/relationships, (6) time, and (7) transpersonal elements according to environmental psychology theory proposed by Low and Altman (1992). The condition of instruction was: "How do you find meaning in a place in the out-of-doors?" All participants filled out a post-sort questionnaire, which asked participants to elaborate on the thoughts, feelings, and places that came to mind as they sorted and to describe the specifics of the environmental context, which they specifically had in mind as they sorted the statements (Hutson, Montgomery, & Caneday, 2010).

Data from the sorts were correlated and factor analyzed, followed by varimax rotation using PQMethod software. Twenty out of the 30 sorts defined a three-factor solution and were named: Factor 1: *Relational* (4 sorts), Factor 2: *Natural* (9 sorts), Factor 3: *Spiritual* (7 sorts). It was determined that individual loadings at 0.40 and above would be used to determine the sorts that defined each of the three factors. This solution accounted for 46% of the total variance (Factor 1, 12%, Factor 2, 18%, and Factor 3, 16%).

In comparing qualitative data from the follow-up questionnaire to Factors 2 and 3, the comments seemed consistent and "breathe[d] subjective life" (Stenner et al., 2008, p. 227) into the points of view uncovered. In other words, the qualitative data supported the researchers' initial interpretation and strengthened the perceived boundaries of the respective subject positions.

Participants who subscribed to the *Natural* view (Factor 2) described place meaning through sensory experiences closely connected to the physical elements of natural environments, preferably experienced in solitude. The *Natural* highest-ranked "most like" statements (scored +5 and +4) were as follows:

  (20)   Practicing activities that allow me to see the sights, hear the sounds, experience the smells and touch my surroundings. *
  (30)   Experiencing solitude. *
  (28)   Feeling attached to nature.
   (4)   Feeling psychologically rejuvenated.
   (7)   Feeling independent. *

Note: here and subsequently, (*) indicates a distinguishing statement with significance at p < .01

Generally, the qualitative data from the questionnaire further supported the high rankings of the statements. One participant commented, "I find meaning in a place when I can be alone—to hear nature, to feel the seasons, to live in the harshness of winter or softness of spring."

Participants who subscribed to the *Spiritual* point of view (Factor 3) found a sense of a perceived spirit in nature and encountered rejuvenation in the outdoors in a more universal context; feeling connected to the earth instead of particular aspects of nature settings like those who subscribe to the *Natural* point of view. They especially felt a strong affinity toward notions of God and oneness. The *Spiritual* highest-ranked "most like" statements (scored +5 and +4) were as follows:

(46) Encountering my spirituality. *
(28) Feeling attached to nature.
(47) Encountering God. *
(44) Encountering oneness in a place.
(26) Feeling attached to the land.

Similar to the *Natural* point of view, the qualitative data illuminated the significance of the arrangement of the highest-ranked statements. One participant who subscribed to the *Spiritual* view commented on his setting of choice and said, "It's a great place to go into to be one with the earth. I also take groups back there on occasion to help them find a connection with all [that is] around them. Being Native American, I feel a great connection to the Earth. I know that it is sacred and that it contains great spiritual medicine."

Overall, the participants who subscribed to the *Natural* and *Spiritual* viewpoints used words that resonated within their respective factor structure. However, Factor 1 (*Relational*) was not as straightforward regarding the interpretive process, which led to questions about the factor's coherence and our initial interpretation. We returned to the factor structure and the qualitative data to explore other ways of understanding this particular perspective.

Generally, those who subscribed to the *Relational* view placed importance on relationships that unfold with family, friends, and environments over time. The *Relational* highest-ranked "most like" statements (scored +4 and +5) were as follows:

(35) Experiencing time with my family. *
(1)   Feeling positive memories come forth. *
(39) Being in a place I have history with. *
(45) Encountering the personality and/or spirit of a place.
(42) Being part of rituals and celebrations of a place. *

When exploring the qualitative data, we noticed inconsistencies between what people were saying. Their words still appeared to resonate with the arrangement of statements, but they appeared to be expressing themselves in different ways. At first, we viewed this as a potential problem with the coherence or viability of the factor. However,

a modified template approach to text analysis (see Crabtree & Miller, 1999) helped us to better understand that what we were interpreting was less about coherence and more about the factor's complexity. What follows is a step-by-step process that we used to combine Q methodology and qualitative research analysis and interpretation for the *Relational* view.

Traditionally, Crabtree and Miller's (1999) template approach to text analysis is used by qualitative researchers to define codes *before* in-depth analysis of the data begin. Crabtree and Miller suggested reasons for such an approach to qualitative research may include a priori theoretical considerations that can be expanded upon by multiple readings of qualitative data. While philosophically, this goes against Q methodology's ability to highlight new and unknown discoveries, our "codebook" was the *Relational* point of view that was discovered using Q technique. Our modified template approach helped us to go back through the process that led to our discovery (the *Relational* view) to understand it in more depth.

We utilized each of the five highest-ranked statements from the *Relational* view as a code to understand the follow-up narratives. We assigned a color to each of the highest-ranked statements to help us with text analysis. Red represented *family*, green *positive memories*, brown *history with the setting*, light red *personality and spirit of the place*, and purple *ritual, celebrations, and continued involvement with a place*, as the following illustrates:

RED	(35)	Experiencing time with my family. *
GREEN	(1)	Feeling positive memories come forth. *
BROWN	(39)	Being in a place I have history with. *
LIGHT RED	(45)	Encountering the personality and/or spirit of a place.
PURPLE	(42)	Being part of rituals and celebrations of a place. *

We then organized data chunks within these codes to better understand the structure of the point of view from each participant's perspective. Consider the following narrative from participant 1 with code labels:

> I have been at this for nine years (BROWN). During my trips I have had one or both boys with me (RED). The experiences with them have been great (GREEN). At the same time, we have met many new friends on the AT [Appalachian Trail] and we value that relationship (PURPLE). Returning each year has been something to look forward to (PURPLE). . . . It is hard not to think of God, Mother Nature, or whatever you call the force that created where we hike . . . there are so many places to visit and

hike (LIGHT RED) . . . . The Appalachian Trail keeps calling me back and once done in 2008 I would like to try it again upon retirement (PURPLE).

It's easy to see how this participant's words resonate within the arrangement of the statements or seem consistent with the codes that Q developed. It's clear that his notion of the personality or spirit of the place is the sentiment that is "calling him back," but the spirit of the place seems also to be defined through his relationship with family, friends, and ritual all connected to the physical setting.

Participant 2 helped us to understand the notion of spirit within this viewpoint even further. Like participant 1, this participant emphasized the importance of being in outdoor settings with friends and family. However, his notion of the personality of a setting seemed more connected to the specific characteristics of the setting similar to the *Natural* view. This was very different than the apparent force that is calling back participant 1, and instead appeared to involve specific characteristics of the setting.

The first thing that comes to my mind when I answer the exercise (GREEN) is the collective outdoor encounters I had in the Philippines (PURPLE) either being part of my work or outdoor recreation activities with my friends and family (RED). This includes our group gatherings in clean and serene beaches as well as in the mountain resort with flowing rivers and waterfalls (LIGHT RED).

Additionally, participant 2 offers an important explanation of why he puts the spirituality-related statements in the neutral column. He said,

I place the contribution to spirituality and encounter with God on the neutral column since there are other ways/places I could encounter the Supreme Being aside from the outdoor place. . . . like church.

Participant 2 suggests spirituality is something that he can experience in other settings, and he makes it clear that he does not depend on outdoor settings for his spiritual beliefs like those who subscribe to the spiritual perspective, nor is he being "called back" to a place like participant 1. However, he makes it clear that it is in fact relationships with others that help him to find meaning in significant places in the out-of-doors.

Participant 3 only made brief comments on the questionnaire. She noted, "The experience I have generally dictates the meaning as opposed to the specific place." After conducting a follow-up interview with her, she elaborated on some of the specifics involved for her to attach meaning to outdoor places. She said,

I don't have much to say because it's so much a part of me

(BROWN). . . . This is how I interact. I lived in the same house
since I was six years old up until I went to graduate school
(BROWN). I recently went back and remembered how much I love
that house (GREEN). . . . They painted the walls bright colors.
When I close my eyes in that setting, I could feel home (GREEN),
but when I open them it was gone (LIGHT RED).

She went on to explain her feelings about a restaurant close to the hill
country she was reflecting on in the U.S. state of Texas as she sorted the
statements. She said,

The restaurant doesn't matter, but my memories and my
relationship to my sister in that restaurant do matter (RED).

For this participant, the physical setting seemed to take on much less
significance when compared to participants 1 and 2. She explained that
she interprets the world through relationships. In a literal and figurative
sense, relationships for her are the places that she loves to return to.
This provided another way to understand the way person-place
relations operate for those who helped to define the *Relational* view.

Finally, participant 4 offered another way to understand his point of
view and suggested that, "Many places have special meaning. I read
about places before visiting them and love to return to certain places"
(BROWN). Again, there seems to be a commitment to returning to
special places experienced in one's past among those who subscribed to
this view. However, participant 4 goes on to say, "These visits are with
family (RED), but it is the place that I remember" (LIGHT RED). So for
him, it seems the personality of the setting, the landscape itself, was
etched in his memory more than other elements. Over the course of his
life (it is noteworthy that he was the oldest participant) his experiences
in personally meaningful settings were almost always with his family,
which certainly colored the way he defined person-to-place
relationships.

In summary, we found that the *Relational* view can and should be
understood in multiple ways. Using a modified template approach to text
analysis we came up with four conclusions about this viewpoint. First, it
seems that family had both literal and symbolic meaning within this
view. In some cases, it was described as experiences with children and
loved ones, and in others it seems that family was more a feeling of being
connected to certain places and memories of those people who were
significant in the participants' lives in those settings. Second,
participants were given freedom to choose both a particular place
and/or multiple places depending on how they interpreted the condition
of instruction. For some within this perspective, the particular place
(such as the Appalachian Mountains) facilitated deeply felt relational
meaning. For others, collections of places facilitated positive memories

of important relationships connected to the physical settings and the people in those settings. Third, there were also distinctions, especially with participant 4, as to whether or not it was truly the physical setting which triggered memories, or if it was people that triggered memories that were setting-specific. Again, this leads us to believe that relationships were interpreted in multiple ways for the four people who helped to define this point of view. Fourth, the perceived spirit and personality of a place was important to those who subscribe to this view and was interpreted in different ways within this perspective for each participant. This not only helped to clarify some of the different reasons as to why these four participants gravitated toward the *Relational* view, but it also helped us to understand how this viewpoint operates differently in comparison to the *Spiritual* view, which also emphasized the importance of feeling close to notions of spirit within particular places.

Returning to the idea of factor coherence, it could be argued that the *Relational* view is not as theoretically coherent as the other perspectives. However, the power of a relationship still seems to be the underlying thematic content that holds this point of view together, but the stories within this viewpoint certainly unfolded in different ways for different people and perhaps further research can continue to tease out the ways places become meaningful through a relational perspective. To come to this conclusion, we utilized a modified template approach to text analysis to better understand and compare ideas within this point of view to find out the ways participants attached individual meaning to each of the five highest-ranked statements.

Study 2: Case Study

In the second Q study (Long, Van Eman, Thorman, Shaw, & Montgomery, 2005), the participants were teachers who were taking part in a school reform project using arts integration to motivate and engage students in learning and achievement. The Q set included the items from four scales taken from an instrument (referred to as the TOS) developed through R-factor analysis (Montgomery, Gunzenhauser, & Miller, 2005). As expected, the Q study yielded radically different results from the TOS, because the purpose and the research question differed substantially. When using the TOS, results indicated four scores for each teacher, one on each reliable scale. When teachers sorted the same 38 items of the TOS, the results indicated a typology of how teachers used the arts, based on their opinions about the arts.

The 20 teachers (18 female and two males, representative of the gender of the teachers in the project) participating in the Q study responded to the condition of instruction, "What is the experience of integrating the arts into your classroom like for you?" The three

resulting factors or types of teachers were interpreted to be *Limited Arts Usage, Fundamental Arts,* and *Arts Alive.* Although all of the sorts of the teachers indicated a support of the arts in classrooms, the ways they were used or integrated differed. Those who subscribed to *Limited Arts Usage* felt pressure from testing requirements and maintaining achievement levels of students; using the arts was a fun activity or something extra to the planned curriculum for learning. *Fundamental Arts* described the arts as breaking boundaries among curricular areas and having the capacity to engage students in complex content learning. Using the arts was viewed as a vehicle to accomplish outcome goals and curricular benchmarks. The *Arts Alive* view described the teachers who had few limits on using the arts and those who valued the unique outcomes available through the arts. Art was evident in all projects, activities, and incidental moments in the classroom and school.

It is evident that these three factors differ radically from the means and standard deviations derived for the teachers from the four scales, which were: Student Outcomes, Collaboration, Teacher as Artist, and Arts for Arts Sake. There were no significant differences among the Q types for any of the scaled scores. We learned more about the ways that the arts are valued through understanding and interpreting the types/factors than from the descriptive statistics of the TOS. Clearly, the variability in the scaled scores was restricted because the teachers were receiving stipends and support for using the arts through a grant that was funding the research.

Of greater importance to this discussion is how the three Q-derived types of teachers led to an intensive qualitative case study of the teachers whose sorts achieved the highest and "purest" significant loads on the factors. Pure in this sense means that factor scores on the other two factors were very low in comparison to the very high significant score, representing an exemplar sort to define that factor. When initial interviews were conducted to learn more about factor interpretation, more qualitative information emerged beyond what was used to assist in interpreting the factors. The context of high-stakes testing was paramount to all three types of teachers, yet the Q statements did not have the capacity to reveal this, leading to further study.

Keeping in mind a context that balances the requirements of the testing environment, state mandates, and district expectations, the three women representing the Q factors became the subjects of another study. Using several in-depth interviews beyond those conducted to interpret factors and multiple classroom observations, three case studies were developed to describe the teachers' response to integrating the arts (Van Eman, Thorman, Montgomery, & Otto, 2009). Obviously, the cases related to the former results, but each case study added a contextual

depth not available to the factor interpretations. Suzie was characterized as *Cracking the Whip* in how she responded to the external pressure, logically emerging from *Limited Arts Usage* from the Q study. Mary felt she was *Walking the Tightrope* as she balanced the arts across her curriculum (*Fundamental Arts*). Finally, Fiona was *Flying the Trapeze* as she soared across the external barriers and pressures and implemented the arts for the sake of joy, enjoyment, and creativity. Yet, without the Q study to identify the distinctly different responses to the project of arts infused across the curriculum, we would have had very high R scores for all teachers and been unable to discern the differences. Initial interviews with teachers also pointed out the positive nature of the program without getting to the tacit level of the problems revealed by the Q factor interpretation.

This study clearly demonstrated the value of combining qualitative research and Q-methodology strategies, each contributing an important aspect that provided direction for developing professional development experiences to support the teachers. All were supportive of the arts, all were feeling mandated curriculum and testing pressures, and all would provide positive comments about the project. The differences uncovered initially by Q revealed different support systems needed by each type of teacher.

Discussion

The purpose of this article was to demonstrate how Q methodology and qualitative research strategies can complement one another. In discussing the capabilities of Q technique and concourse theory, Brown (2008) suggested "What began as undifferentiated concourse, therefore ends with a set of factors or patterns of meaning, that explain why the volume of subjective communicability displays this particular form and content" (Brown, 2008, p. 701). A general conclusion of this article is that refining and further understanding patterns of meaning can be accomplished through additional scrutiny of a factor's structure (as demonstrated in study 1) and through using subject positions as starting points for further inquiry (as demonstrated in study 2). The authors hope that the two examples provided may serve as frameworks for other researchers to use in their research endeavors in combining Q and qualitative research strategies. Additionally, through writing this article, the authors were inspired to further explore and reiterate what qualitative and Q-methodology researchers can gain by combining research strategies.

First, Q methodology has the potential to offer qualitative researchers more concrete answers to their questions. Commenting on qualitative research analysis and interpretation, Patton (2002, p. 433) points out that "the human factor is the great strength and fundamental

weakness of qualitative inquiry and analysis—a scientific two-edged sword." Q methodology offers a way to address this weakness by removing part of the researcher's gaze from analysis and interpretation through Q procedures. Q methodology certainly embraces and honors the researcher's gaze as part of the interpretive process, yet the form and content within a factor exists beyond and apart from the mind of any researcher (Cordingley, Webb, & Hillier, 1997). Q-methodology researchers should continue to celebrate and communicate to others that the patterns of meaning discovered during a Q study exist before the researcher attempts to interpret the meaning of a factor's structure. In other words, the subjective dimension is already present. The job of the Q researcher is then to elaborate on what has been found, not on what might have been found through the eyes of a researcher or researchers alone.

Second, and as demonstrated in this discussion in the first example, further qualitative analysis that is attached to factor interpretation has potential to illuminate a factor's meaning more precisely and maximizes the possibilities of understanding the different ways people help to define a particular point of view and further honors particular subject positions. Qualitative research approaches to Q methodology data analysis give Q-methodology researchers a way toward "thick, rich description" (Patton, 2002, p. 437) of the meaning and at times "meanings" present within a factor. In a way, this approach to Q-methodology factor interpretation more deeply "takes the reader into the setting being described" (Patton, 2002, p. 437) or for the purposes of Q, takes the reader more deeply into understanding the shared perceptions of others, which were brought together during the study while intentionally and scientifically locating differences in the meaning-making process.

Third, and as demonstrated in the second example, Q-methodology factors can act as roadmaps for additional projects that extend from the interpreted factors. As different meanings and relationships emerge from a Q study, these can become points of reference for further inquiry exemplifying qualitative research grounded theory combining inductive and deductive reasoning (Strauss & Corbin, 1998). In the case study example provided, the initial Q study that produced distinct viewpoints is an example of inductive reasoning. It can be understood as a tool that acts as a catalyst for subjective dimensions to take form, which can then be interpreted by outside observers. Extending this Q study into a qualitative case study is an example of deductive reasoning and a way of further exploring the potential ramifications or power of a particular point of view.

Overall, both of the examples provided are meant to give other researchers ideas and examples of how to deepen or extend their

approaches to Q-methodology inquiry through two different ways that Q and qualitative research can meaningfully interact. These strategies are not meant to suggest the limit of various approaches to combining various research strategies. Instead, they are meant to inspire continued practice and dialogue around ways of doing and approaching the scientific study of subjectivity. We believe the approaches presented not only extend beyond factor interpretation, but have potential to give Q-methodology researchers a more holistic and complete understanding of the subjective points of view discovered from Q as well as of their potential uses for additional research.

Preserving the standpoint of the individual on any given topic has long been a tenant of Q-methodological inquiry. Highlighting patterns of meaning co-constructed from individual points of view is the strength of doing Q methodology. Rather than giving individual, trait-based scores on reliable scales that measure the same concept, the goal of Q is to locate, describe, and give form to the subjective dimensions present in the ways one or more individuals think about an issue or issues, including those areas in which the same individual(s) may overlap with or diverge from others who comprise the P set. Some might argue that the strategies presented here were simply part of the Q studies we conducted, to which we would agree. Part of the reason we make these qualitative strategies explicit is to divert the recent attention that Q has received as yet another standardized method resulting in rank-ordered statements. Furthermore, referring to Q methodology as a mixed method may be confusing to researchers who use both quantitative statistics and qualitative strategies in one research agenda. In a Q-methodology study, reference to mixed methods may divert attention from the discovery of subjective viewpoints to the quantitative analysis of factor scores or the analysis of variance between groups. In closing, we hope the discussion presented here echoes the call of other Q researchers to utilize Q for the purposes of deep interpretation of the meaning of factors (Shinebourne & Adams, 2007).

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