Operant Subjectivity: The International Journal of Q Methodology
38/2 (2016) 15-32, DOI: 10.15133/j.os.2016.005

Operant Subjectivity
The International Journal of Q Methodology

Combining a Naturalistic and Theoretical Q Sample Approach: An Empirical Research Illustration[1]

Siv Elin Nord Sæbjørnsen
Molde University College
Ingunn T. Ellingsen
University of Stavanger
James M.M. Good
Durham University, UK
Atle Ødegård
Molde University College and University of Stavanger

Abstract: An important step in any Q-methodological study is the identification of the concourse and the development of the Q set. Inspired by the writings of William Stephenson (1953) and Steven Brown (1980) about the development of the Q set, we illustrate how two different approaches to Q sampling, naturalistic and theoretical, may be combined. We draw on examples from a Q study scrutinizing adolescents' subjective viewpoints about collaboration and participation in interprofessional teams. The example is used to illustrate how naturalistic and theoretical approaches to Q sampling may be combined in the same research design. The Concourse Box is introduced as a new tool to help visualize these joint contributions.

Keywords: adolescents, concourse, Concourse Box, Q sampling, theoretical and naturalistic sampling

Introduction

Q-methodological studies aim at exploring patterns of shared subjectivity. Based on the concourse theory of communication (Stephenson, 1978), the participants are asked to relate themselves to a set of statements concerning the research topic by sorting them into a matrix of columns (Q-sort grid) ranging from most like to most unlike their situation or some other condition of instruction. By completing a Q sort, the participants reveal their subjective points of view (McKeown & Thomas, 2013). Therefore, it is essential that the set of statements is well-suited to the Q-sorting task and the research objective. Yet, the identification of the concourse, and the process of Q sampling from it, is seen by some researchers as one of the most demanding parts of the Q methodological research process (Brown, 1991/1992; Ellingsen, 2011).

[1] I would like to acknowledge my indebtedness to Dr. Amanda Wolf for overseeing all aspects of the review process for this article. [*Ed.*]
Contact author: Siv.E.N.Sabjornsen@himolde.no

Researchers have found that Q methodology is particularly suitable for research with children and others who tend to be excluded from participation in research (Ellingsen, Thorsen & Størksen, 2014; Størksen, Thorsen, Øverland & Brown, 2011; Brown, 2006). An important reason for this is that Q methodology facilitates the detection of "weak voices"; hence, researchers that have a special interest in empowerment have adopted the method (Brown, 2006). The main contribution of this paper is to consider the methodological challenge concerning the relationship between the concourse and Q sampling that arises in such contexts of "weak voices" and to present an approach that has been shown to help address this challenge. We illustrate how naturalistic and theoretical approaches to Q sampling may be combined in a way that helps participants to express themselves about complicated topics. Briefly, *naturalistic Q sampling* refers to processes of finding and gathering potential Q-set items, such as statements, from naturally occurring subjective viewpoints about the topic of interest expressed in newspapers, everyday conversations, interviews, or the like. From a sample of such statements, a representative Q set may be derived using either a theoretically structured frame or the researchers' own judgements of representativeness. *Theoretical Q sampling* refers to processes that seek to find, build or construct statements based on some theory. The Q sampling in our illustration combines these two sampling strategies. Items were predominantly drawn from natural expressions, but some theoretically constructed items were added to enrich the Q-set.

In the remainder of this paper, we (a) describe and illustrate naturalistic and theoretical sampling, (b) introduce the concourse box, which is a visualisation of a combined Q-sample approach and (c) discuss advantages and disadvantages of combining a naturalistic and a theoretical Q-sample approach, focusing on how the rationale behind the concourse box may facilitate a well-balanced Q set when seeking deeper and systematic insight into viewpoints of vulnerable groups of participants.

Q methodology and subjectivity

When William Stephenson developed Q methodology, he aimed at a procedure tailored to the scientific investigation of subjectivity (Stephenson, 1953). The emergent subjectivity, "unsullied" by any expert interpretation, constitutes the data that is made available for investigation. Stephenson (1953) saw subjectivity as behaviour, behaviour that spontaneously exists and is not just a response to a "test" (Brown 1980). This behaviour is subjective in terms of being experienced by "me", and of psychological significance to "me". Subjectivity manifests itself in notions and dialogues, in which it can be scientifically studied by others (Wolf, 2010).

Concourse

In Q methodology, the concourse theory of communication (Stephenson, 1978) is central. Stephenson's concourse theory generalizes what he had previously referred to as "universes or populations of statements" (Stephenson, 1953). As he puts it, 'subjective communication is grounded, theoretically, in statistical quantities of statements about a situation" (Stephenson, 1980, p. 23). Brown (1991/1992, p. 3) later described *concourse* as the flow of communicability surrounding any topic, and McKeown and Thomas (2013) have referred to it as the "communication of subjectivity". A concourse contains communication about all possible aspects that might surround a topic (Ellingsen, Størksen & Stephens, 2010). These elaborations of the notion of concourse indicate that the borders of a concourse are not absolute or

distinctly defined. That said, being clear about the research topic and to whom it relates helps the researcher to sketch in the boundary of the concourse.

According to Stephenson (1980), the concept of concourse stems from the Latin *concursus* and is rooted in the original meaning of the word "conscious", a word whose meaning has changed over the centuries. The term "conscious of" expresses a modern concept and has a meaning different from the original *conscius*, which meant to "know (something) together with (someone)". Stephenson also introduced the notion of *consciring*, as a general theory for subjective communicability (Stephenson, 1980). The word "consciring" stems from *scio* and *con*, meaning "know" and "with". The notion of consciring relates to the sharing of knowledge. For Stephenson, then, communication is rooted in self-reference, is communicable, and can be expressed orally or through visual images or other possible manifestations of meaning (Brown, 1991/1992; Stephenson, 1978; Thorsen, 2006). Furthermore, all subjectivity is rooted in common knowledge and is sharable:

> …all subjectivity is rooted in conscire, in the common knowledge, the shareable knowledge known to everyone in a culture. The sharing is what should have been called consciousness, and it meant merely being communicable in common. (Stephenson, 1980, p. 15)

However, common knowledge, as quoted above, does not mean that everyone has to share the same view in order to be able to understand (Brown, 1991/1992). According to Brown (1991/1992), when relating to an issue, we may very well have a broader understanding of the theme, regardless of our views or opinions about the topic. However, if common knowledge is lacking, reflecting upon and sharing opinions about a topic will also be limited. The notion of concourse as embracing all possible aspects surrounding a topic means that it is impossible to grasp a concourse in its entirety (Stephenson, 1978). Therefore, it is important to balance the need to identify a concourse that delimits the "common knowledge" of interest, at the same time recognising that such bounding can only be approximate.

Q sampling

In the literature there is a confusing variety of terms and discussion relating to approaches to making a set of items for Q sorting; thus we begin with clarifying our terms. We find it fruitful to make a distinction between identifying a concourse and developing a Q set[2]. Identifying a concourse may be understood as delimiting the research topic, often by elaborating its main themes or components. Developing a Q set refers to practices that establish a large number of statements from which the Q set subsequently will be drawn and the steps entailed in creating that Q set. Thus, in our usage, Q sampling refers to the combined activities entailed involved in developing a Q set, including the important step of reducing a large number of statements to a manageable number. In the Q-sampling process, the researcher will often face a relatively large number of statements, as many as 200 or more, which need to be reduced to between 40 and 80 (Ellingsen, 2011; Watts & Stenner, 2012). The number of statements included in the Q set will depend on the research topic as well as the participant group. It is important that the final Q set comprises statements that may

[2] From here on we will use "statements" as a description of items in a Q set, while bearing in mind that items may be images or other items.

reflect the participants' subjective views and that it adequately represents the identified concourse of the research topic.

When identifying the concourse, a common approach is to interview people who have knowledge of or experience with the research topic, as this can help to set the fuzzy borders described above. Every statement included in the Q set must be formulated in a way that the participants subjectively can relate to; in other words, it must stimulate self-reference. When generating the statements for the Q set, it is advisable to retain the everyday language that is familiar to the participants doing the Q sorting. This makes it easier for the participants to make an immediate response to the statements when sorting them. Thus, when developing the concourse as part of Q sampling, other sources may also be used, such as newspapers, literature and everyday talk.

It should be possible for each participant to relate differently to each statement based on the psychological significance it may have for him or her, often referred to as the scalability of the statements (Watts & Stenner, 2012). For example, a statement such as "I like to attend case conferences", which is used in a study about how adolescents with complex social needs experience interprofessional collaboration, may be rated anywhere from strongly positive to strongly negative by different participants, since taking part in such conferences has a different psychological significance for each participant. In addition to variations in the ranking, the reasons for high (or low) psychological significance may also vary. A factual statement, on the contrary, will usually lack the scalability needed. For example, a statement such as, "A case conference is a meeting" or "I attend case conference meetings" will be difficult to rate in accordance with the participants' subjective views because of its factual, either/or character.

The Q set is extracted from the concourse and should constitute the essence of the concourse. However, in order to represent the concourse adequately, the Q set needs to be heterogeneous, while at the same time retaining some degree of homogeneity (Stephenson, 1953; Brown, 1980). A careful delimitation of the identified concourse aims at a Q set that covers the concourse in a balanced way (Watts & Stenner, 2012), with all statements retaining a common currency. This means that the Q set should grasp the width as well as the depth of the subject delimitation matter under exploration. It needs to be homogeneous in the way that it relates to the topic or subject at hand. At the same time, heterogeneity is required in order to grasp as many different aspects as possible within the concourse in order to make it possible for participants to elicit their perspectives through the Q sorting procedure.

Fisher's balanced block design

Stephenson (1953) introduced Fisher's balanced block design (FBD) as a helpful tool for Q set selection, a tool which has been used in many Q studies since then. For example, Brown (1980) referred to a study by Reich (1971) when he explained the application of FBD as a means to facilitate Q set selection. In Table 1, two main effects in Reich's design, A (consciousness) and B (values), are used to ensure full coverage in the selection of statements. Main effects A and B have, respectively, three levels: a, b, c and d, e, f. The total number of possible combinations is nine. In Table 1 we illustrate the nine combinations as nine cells, based on the main effects A and B and levels a to f.

According to Stephenson (1952, p. 223), a Q sample "may be designed purely on theoretical grounds, or from naturally-occurring (ecological) conditions, or as required for experimental purposes, to suit the particular requirements for an investigation". In

itself, applying FBD may be seen as using theory in order to structure the Q sampling process. Kvalsund and Allgood (2010) applied FBD in a pure theoretical Q sampling approach in a study about teachers' experiences with communication. They developed the effects and levels on the basis of the theories of authors such as Mead (1934), Buber

Table 1: Effects and Levels – 9 Combinations

		Main Effect A		
		Levels		
		a)	***b)***	***c)***
Main Effect B ***Levels***	***f)***	*af*	*bf*	*cf*
	e)	*ae*	*be*	*ce*
	d)	*ad*	*bd*	*cd*

(1965/1988, 1965/2002) and Giddens (1991). Their design resulted in 12 possible combinations and constituted a theoretical starting point for Q sampling and also a structure to balance the sample, from which the researchers constructed three statements in each of the 12 cells, giving a total of 36 statements in the final Q set. These 36 statements were *built* by the researchers, and solely based on the theory they had used for the development of the effects and levels.

Another example is provided by Ellingsen, Shemmings and Størksen (2011), who conducted a study on family perception among children in foster care. The researchers collected naturalistic statements from interviews with foster children and their carers. Hence, the statements included in the Q set were *found* in the interview texts. Moreover, inspired by the FBD, the authors prepared a scheme based on a horizontal and vertical categorisation of central themes that appeared to them in the interviews in order to facilitate a representative Q set selection (Ellingsen, 2011). When all the possible statements from the interviews were sorted into crossing categories, the statements for the Q set were selected. This procedure resulted in a reduction of 246 statements to a set of 39 statements to represent the concourse.

Both of the empirical examples presented above aimed at using FBD-inspired sampling designs to capture the full diversity of the Q sample that at the same time ensured that all statements retained common "membership" in the concourse. There are clear merits in both approaches. On one hand, a theoretical approach may be beneficial when the researcher aims at exploring how theoretical perspectives bear resemblance to the "lived" world of Q sorters, or when theory may help the participants to express themselves about complex themes. A naturalistic approach using found statements, on

the other hand, has the advantage of using language that is familiar to the Q sorters and may capture important themes in the concourse that theories do not. Such statements pick up aspects of the subject that may not "fit" theories, but are relevant to the interviewees. However, we suggest that when applying a combined approach, the study may benefit from advantages associated with both the approaches described.

A combined Q sample approach: An empirical research illustration

In a project focusing on subjective viewpoints of adolescents who were in need of complex health and social services about their participation in inter-professional teams, naturalistic and theoretical sampling were combined (Sæbjørnsen & Ødegård, in progress). In this article, we describe the methodological approach used in the study and introduce the Concourse Box to illustrate the development of the Q set (see Figure 1).

In Norway, collaboration teams are often established to coordinate and support the provision of services to users with complex needs (Sæbjørnsen & Willumsen, 2015). The team members meet together regularly in conferences addressing issues in order to improve the person's situation (Kinge, 2012), but communication between team members also occurs between conferences when appropriate. In the example study, the collaboration team that formed around each individual adolescent consisted of a group of different professionals, non-professionals and the adolescent. Examples of non-professional members of the team are parents, foster parents and significant others in the adolescent's life.

The empirical research illustration is based on a study with adolescents, aged 13 to 18 years, who had experienced participation as service users in collaboration teams. When adolescents participate in collaboration teams, they acquire experience of what it is to be service users, and they also engage in collaboration processes with the other actors present. In this regard, adolescents' subjective viewpoints about what is going on in these meetings are important, since collaboration in interprofessional teams often is encumbered with high complexity and members of the team may emphasize different aspects of collaboration while interacting (Ødegård, 2006; Strype, Gundhus, Egge & Ødegård, 2014). It is particularly important to grasp the adolescents' perspectives, as they may find it more challenging to express their views in such constellations of professionals and other actors.

The naturalistic contribution to the concourse

In preparation for the generation of the Q set for the study of adolescents' subjective viewpoints about their participation in the collaborative team, five adolescents with such experiences were interviewed. The interviews were semi-structured and explored their experiences with and participation in the collaboration team, as well as the team process. The transcribed interview texts showed the rough boundaries of the concourse, while also providing a total of 258 statements from that concourse.

Many of the statements were about the adolescents themselves, but also about other participants in their collaboration team, such as their parents or professionals representing different services, and also about the collaboration team as a whole. The adolescents expressed views about their experiences, feelings, beliefs, expectations and their concerns. These expressions formed the basis for the development of an FBD-inspired scheme, which aimed at facilitating the selection of the final Q set. In the two-dimensional scheme, the horizontal dimension of the scheme was divided into three categories concerning *whom* the statement was about or was relating to: (A) *me* (the

adolescent), (B) *others* (one or several of the other team members) or (C) *the collaboration team* (the team as a whole).

The vertical dimension comprised four categories: (D) *structure*, (E) *process* and (F) *result* and (G) *miscellaneous.* The categories stem from Avedis Donabedian's classical model for the evaluation of the quality of medical care from 1966 (Donabedian, 2005). The quality dimensions in this model – structure, process and outcome – may, according to Ahgren (2007) and Øvretveit (1998), be illuminated through the perspectives of leadership, profession and service users. Because these quality dimensions are relevant to interprofessional collaboration (IPC) as well as to service-user participation, they were used in order to define the categories for the vertical dimension in the concourse. The only alteration was that "outcome" was replaced with "result", which is in line with Ahgren's (2007) use of Donabedian's model. Drawing on Donabedian's (2005) model in the selection of the Q set is also a use of theory. However, it was at this point only used to categorise naturalistic statements found in the interviews and not for constructing or building statements. A fourth miscellaneous category (G) was added, as some statements fell outside the other categories but were still relevant to the topic and merited inclusion as part of the concourse. These statements were more multifaceted and touched on several additional themes, each of which contained very few statements. It was considered appropriate to gather these statements in one category rather than develop several new categories containing fewer statements.

The 258 statements were subsequently categorised into the scheme as illustrated in Table 2. None of the statements that emerged in the interviews was excluded at this point.

Table 2: FBD-Inspired Categorization Scheme

	A **Me**	**B** **Others**	**C** **Collab. team**
D **Structure**	30	38	17
E **Process**	43	43	37
F **Result**	5	6	15
G **Misc.**	24		

Table 2 illustrates how the intersecting of themes that emerged in the interviews constituted the primary step in identifying and ensuring representation in the Q set of the naturalistic elements of the concourse. A naturalistic approach was important because the aim for the study was to explore the adolescents' experiences, and therefore it was crucial to let their voices be the primary source for the Q set. Their statements capture perspectives available in the concourse that are important and which may not be reflected in theories. Furthermore, statements in a natural voice can help the researcher to adapt language and the use of concepts in the final Q set to make it easier for participants to associate with.

The number of selected naturalistic statements by category is illustrated in Table 3.

Table 3: Selection of Empirical (Natural) Statements

	A **Me**	**B** **Others**	**C** **Collab. team**
D **Structure**	3/30	4/38	3/17
E **Process**	4/43	4/43	4/37
F **Result**	4/5	3/6	2/15
G **Miscellaneous**	6/24		

As illustrated in Table 3, the numbers of the selected statements vary in the different categories. Furthermore, the 258 statements were reduced in the usual way – avoiding overlaps and opposites, and aiming for similar numbers in each cell, which resulted in a set of 37 statements.

The theoretical contribution to the concourse

Theory may have the potential to complement a naturalistic sampling. We do not intend to suggest that theory should overrule the adolescents' reflections upon the topic, but complex issues may be difficult to articulate. Theory can point to matters of complexity that are missing from the naturally voiced statements. Hence, employing a theoretical approach as a second step has the potential to fill in nuances in the concourse, and thus better enable the adolescent Q sorters to provide their views.

In an attempt to supplement and enrich other aspects of interprofessional collaboration (IPC) in the concourse, we searched for relevant theoretical input from the IPC literature. There are several IPC models in the literature (Leathard, 2003); however, the perception of interprofessional collaboration model (PINCOM) was chosen because of its conceptual character offering an overview of different aspects considered important to professionals' perception of IPC. Originally, PINCOM was developed to include aspects of collaboration on individual, group and organizational levels (Ødegård, 2006). As our study seeks knowledge about participation in collaboration teams, we preferred a modified version of PINCOM where the organizational level is left out (cf. Strype, Gundhus, Egge & Ødegård, 2014). The modified version includes 12 collaboration aspects, four individual aspects and eight group aspects (see Table 4). These were used to supplement the concourse identified through a naturalistic approach (see Table 3).

In order to achieve a balanced Q set (Brown, 1980; Kvalsund & Allgood, 2010), a relatively equal representation of the 12 collaboration aspects was aimed for. This procedure involved using the list of the 12 collaboration aspects in order to examine if these aspects could be associated with or were mirrored in the 37 selected statements.

A naturalistic statement such as "I believe that all persons present in the RT conferences [collaboration team conferences] are genuinely interested in my opinions" from category A/E (me/process) was associated with the IPC aspect called 'social support". However, the naturalistic statement "I know that I may participate a lot in the decision making if I want to", also from category A/E (me/process), was associated with both "power" and 'social support". Some of the selected statements were associated with several of the listed collaboration aspects. This explains why the total number of times IPC aspects are represented in naturalistic statements, as shown in Table 4, is higher than total number of selected statements presented in Table 3. As shown in Table 4, the "Personality Style" and "Group Leadership" aspects seemed to be underrepresented among the selected statements.

Table 4: List of the 12 Collaboration Aspects – Representativeness in Selected Naturalistic Statements

	12 collaboration aspects	**Representation in selected naturalistic statements**
1	Motivation	5
2	Role expectancy	4
3	Personality style	0
4	Power	16
5	Group leadership	1
6	Coping	8
7	Communication	11
8	Social support	14

	12 Collaborative aspects	**Representation in selected naturalistic statements**
9	Group culture	11
10	Group aims	9
11	Group domain	5
12	Group environment	6

The underrepresentation of the PINCOM aspects "Personality Style" and "Group Leadership" may be seen as constituting a theoretical gap in the selected naturalistic statements. Attempting to fill this gap in the Q set, we constructed five new statements that included these two IPC aspects for the categories that consisted of less than four selected statements (A/D, B/F, C/D and C/F; see Table 3). We aimed at phrasing the constructed statements as naturally as possible in order to harmonize with statements articulated by the participants. For example, in order to include the IPC aspect "personality style", the following statement was constructed: "To achieve good results, I think it is more important that I like their personality than that they are skilled professionals". This statement was categorised as a B/F (others/result) statement. Only one statement was associated with "group leadership", hence the statement, "I think the meetings would have been better if I was the chairperson", was constructed. This statement was categorised as an A/D (me/structure) statement.

Altogether, five statements were theoretically constructed for the Q set, and the total number of both the naturalistic and theoretical statements for the Q set was 42. However, as shown in the 12 collaboration aspects list, naturalistic statements may also correspond with theory or theoretical concepts; nevertheless, they are found in the ways in which adolescents reflect upon the research topic – and therefore are to be considered as naturalistically rendered statements.

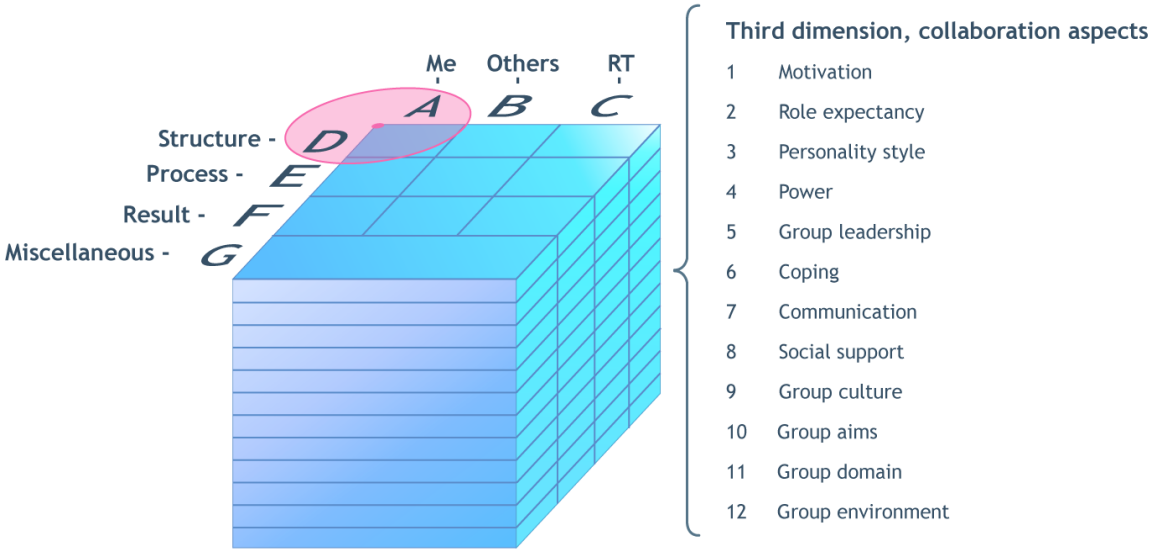
Visualization of a combined sampling approach: The Concourse Box

As already argued, when combining the naturalistic and the theoretical Q sample approach, advantages from both approaches may be gained. It is suggested, therefore, that this combined approach to the development of a Q set may also be useful for other studies. The springboard for this article is our experience of using such a hybrid approach in a study on adolescents' experiences of IPC. Although our Q-sampling approach may be described as a three-dimensional design, the focus here is not so much to highlight three-dimensionality, but rather to describe one way in which different Q sample approaches may be combined.

The Concourse Box, presented in Figure 1, may in itself be an illustrative way to elicit the heterogeneity, depth and richness of a concourse, independently of whether or not the Q set is a combination of naturalistic and theoretical statements. However, in our study, the first and second dimension refers to the crossed categorisation of the found statements – rendered from the naturalistic approach. The third dimension arises from an explicit aim to add theory to complement the concourse, from which the researchers also build additional statements. The horizontal level (categories A, B and C) represents the first dimension, the vertical level (categories D, E, F and G) represents the second

dimension and the theory (the 12 collaboration aspects) represents the third dimension.

Figure 1: The Concourse Box*



* The content of the Concourse Box, the categorised statements, is associated with the 12 collaboration aspects.

The circle inside the Concourse Box points at category A/D (me/structure). This category includes statements articulated by adolescents concerning themselves as service users (me) and in relation to the structure of IPC. Additionally, the statements in category A/D are relevant to some theoretical aspects of collaboration (PINCOM aspects). One tenet of the FBD is to have mutually exclusive categories, and this was achieved among the naturally selected statements. However, for the theoretically constructed statements, this was not the case. IPC participation for adolescents in a vulnerable position is a complex theme, and some can find it difficult to elaborate on the topic. Therefore the PINCOM aspects were found useful to complement the natural sampling. We allowed for multi-placing the 12 PINCOM aspects, as the aim was first and foremost to identify possibly missing aspects. In order to explain how the three dimensions are represented in every statement, some examples may be helpful. One of the statements in category A/D is, "The fact that I participate with my opinion is more important than other group members' participating with their opinions". This statement may also be associated with some theoretical collaboration aspects: (1) motivation - because it may say something about why adolescents participate and how important they think their participation is, (4) power – because it may reveal whose voice they experience as most important among the participants in the collaboration team and (7) communication – because it may say something about communicating "opinions" in the collaboration team. Another example is a statement in category A/E (me/process): "Before the meetings I always talk to a professional who I trust, about how I am doing and things like that". This statement may also be associated with theoretical collaboration aspects: (7) communication – because it relates to the adolescent's communication with the professional, (8) social support – because it has to do with the adolescent's trusting at least one of the professionals in the collaboration team, which

may be an important part of feeling socially supported and (9) group culture – because it may say something about the culture of the collaboration in the sense that they may have an attitude that also allows the adolescent's participation in the preparations for a conference and thus lets the adolescent's voice be heard. A third example, from category B/E (others/process), is, "I feel sure that all the persons involved in my collaboration team intend to work for my best possible outcome". This statement may be associated with the following theoretical collaboration aspects: (1) motivation – to which degree the adolescent perceives that his or her best interests constitute a motivating factor for the members' engagement in the collaboration team, (8) social support – because it may reveal how the adolescent feels as part of the team, and feels socially supported by the members' focus, (10) group aims – because the adolescent perceives that working for his best interests is a shared aim of the whole team and (11) group domain – because the adolescent's best interests constitute the domain of the collaboration team.

The Concourse Box visualizes the three dimensions used in Q sampling, and it may serve as a figurative synopsis of the applied Q set design and process in the example study. Along with the written explanation, it may facilitate an understanding of the primary step of the categorisation of the found statements and show how a consideration of the IPC aspects constituted a second step in the Q set selection.

The 42-statement Q set and the sorting grid were pilot-tested on five young adults, who a few years previously had been in a situation similar to the adolescent service users in our study. These five young adults sorted the cards and reported that the Q set and grid were adequate for expressing their subjective views on the topic. However, some minor changes in wording were suggested and implemented for the final study.

Discussion

In this article we have focused on a combination of a naturalistic and theoretical approach to Q sampling and illustrated how it might be done. However, is anything to be gained from such an approach or is it just more complicated and time-consuming? What could be the possible merits of augmenting the interview-derived statements with theoretically constructed statements? And does a combined approach have the potential to strengthen the validity of a Q study? These are questions that will be discussed in the following section. We conclude with some observations about the implications of our findings for researching vulnerable groups.

What is to be gained by combining natural and theoretical sampling?

With respect to collaboration teams as referred to in our example, the PINCOM aspects relate to IPC, which theoretically denotes something different than service-user participation. One could argue that IPC and service-user participation may be seen as two sides of the same coin, or perhaps also as a compound phenomenon, although, theoretically speaking, they constitute two individual phenomena. However, for the adolescents, the collaboration team is not about theory. They will naturally associate it with experiences and practical matters, such as the help and support that they receive. That said, their perception of IPC will probably also impact on their perception of service-user participation and vice versa.

In the Q study focusing on adolescent service users' views, the starting point was naturalistic statements, gathered from interviews with adolescents who have experience with IPC. "It is with such statements, gathered in natural settings as far as possible (or in careful retrospection or the like), that Q technique begins its study of the

self" (Stephenson, 1953, p. 147). The naturalistic approach aimed at grasping aspects of the concourse derived from hands-on experiences and in a wording that the participants easily could relate to. According to Ellingsen (2011), a Q set consisting of statements that the participants can easily understand may increase the feasibility of the participants expressing their own views by Q sorting.

One could argue that the naturalistic sampling approach could be sufficient for developing the Q set representing the concourse. However, we chose to also put on some theoretical lenses when searching for a balanced Q set. This procedure led to the construction of five additional statements to cover specific themes emphasised in theory on IPC, with the purpose of strengthening the heterogeneity in the Q set. That said, the overall aim was to access the participants' views about taking part in collaboration teams, and not to restrict their possibility of revealing their perspectives. The inclusion of the theoretical aspect did not mean leaving out statements from the interviews with the adolescents themselves, but rather opened an opportunity for them to reveal a broader perspective on IPC. Furthermore, the way the two approaches were merged implied an alternative way of viewing the naturalistic statements. In fact, the theoretical lenses allowed for viewing the naturalistic statements in theoretical terms. Although adding theory did not sully the naturalistic statements, one rational query to this attempt to develop a combined approach might be: Why did the researchers not stick to the naturalistic approach and instead try to secure the IPC aspects (see Table 4) by simply including them in the interview guide? Obviously, that would have been less time-consuming, but would the researchers have achieved the same heterogeneity in the Q sample and would they be able to claim that their study explored perceptions about IPC? The main reason for this was to ensure as open an approach as possible. A theory-driven interview guide could run the risk of reducing the chance of grasping aspects that are important to the participant group.

Interviewing adolescents about their collaboration team may arouse strong emotional memories related to difficult situations in their lives. The collaboration team is concerned with their personal, complicated life situation, which they need interprofessional help to sort out. Therefore, their responses in the interviews may result in statements predominantly about issues that the adolescents see as most important to focus on or issues they find problematic and think need to be changed. However, questions about matters such as personality style or leadership (see Table 4) may be perceived as less absorbing. During the interviews, it was important to let the adolescents talk about what they found relevant and important, both aspects that were of high psychological significance and aspects that were not remarkably positive or negative. The reason for that was to facilitate their contributions to knowledge development about IPC in as comprehensive a manner as possible. The PINCOM aspects included are reported as relevant for how collaboration is perceived by professionals (Ødegård, 2006), a fact which gives rise to the idea that they also may influence adolescent service users' perceptions about collaboration teams, even though these aspects were not addressed in the interviews. In fact, in the example research project, four out of the five theoretically constructed statements were distinguishing statements that had an impact on the interpretation of the resulting factors. For example, one of the statements about group leadership, "I think the RT conferences [collaboration team conferences] would have been better if I was the chairperson myself", is a theoretically constructed statement that scored significantly on several factors. In advance, such a statement might not have crossed the adolescents' minds, but when confronted with it, the participants had distinguishing opinions about it. This statement is relevant to the

leadership aspect and is also about the "me/structure", category A/D, as shown in Figure 1.

On the other hand, the theoretically constructed leadership statement "I experience that the way the RT conferences are being led means a lot to what we achieve in the RT conferences", was not strongly valued and did not score significantly on any of the four factors. That statement was categorised "collaboration team/structure", C/D, and is more about type of leadership in general and is not concerned with who should be in the role of the leader. These findings may indicate that the adolescents had clear viewpoints about leadership, but not necessarily about all facets of the leadership aspect.

Another interesting discovery is that none of the adolescents interviewed had mentioned anything about "personality style" (see Table 4), but the theoretically constructed statement, "To achieve good results I think it is more important that I like the personality of the persons involved than that they are skilful professionals", showed high psychological significance on three out of four factors. This statement was evidently important to the adolescents, despite the personality style aspects absence in the naturalistic statements. The way in which the adolescents in our example study related themselves to these theoretically constructed statements supports the argument that a combined approach may result in a more nuanced Q sample, which again may yield more balanced data from the Q sorts.

Based on the significance these theoretically constructed aspects revealed, as exemplified above, we feel entitled to claim that something has been gained by adding theory. It is our understanding that the theoretically constructed statements constitute a significant supplement which seemed relevant for the participants' ability to express their views about collaboration teams. By applying a combined Q-sample approach, we gained a strengthened heterogeneity and a well-balanced Q set.

The task of identifying a concourse for a Q study is about limiting and concretising the subject matter and achieving an overview of the facets and nuances that can be communicated about a subject, often within a certain culture. The resultant concourse can be seen in the several hundred statements that may have emerged, and which then constitute the field for the selection of statements for the Q set. Such Q sampling, however, is sometimes subject to questions about validity, especially from those who are unfamiliar with or relatively newly introduced to Q. Hence, we believe that such questions deserve more attention.

The importance of content validity in research involving vulnerable groups

Thoroughness in the Q-sampling phase is important in order to achieve a qualitatively sensitive Q study and is also important to the validity of the study (Dennis, 1992/1993; Gallagher & Porock, 2010). The notion of validity is, in general, concerned with the integrity of a research study and whether or not the research methods measures what they intend to measure (Bryman, 2004). William Stephenson's intention in developing Q methodology was to reveal subjectivity. As no external criteria or gold standard can tell whether a person's subjective feeling is right or wrong, the conventional notion of validity is not of any significance in Q methodology (Brown, 1980):

> In Q methodology, the meaning and significance of items is determined by the subject, so that the observer acquires knowledge of their meaning a posteriori, i.e., after the subject has sorted them. (Brown, 1980, p. 191)

It is the participant who determines the meaning of the statement. The participant expresses his or her viewpoints as the sorting is done, based on the sorter's understanding of the statement and how he or she relates to the statement. It would be meaningless to measure the validity of a viewpoint, as the only person who could verify a viewpoint is the person who expressed it (Brown, 1980).

Although the notion of validity is not relevant to Q methodology in the same way as in other research methodologies, validity is not wholly redundant in Q studies. Gallagher and Porock (2010) emphasise that content validity is very important at the beginning of a Q study and that the Q set must be representative of the concourse. The statements' relevance to the concourse is emphasised by Dennis (1992/1993) as a clear validity issue, but not all Q researchers will agree with such a claim. As already argued, there is no external way to "check" validity, as no external criterion exists for a person's point of view (Brown, 1980). This means that a Q sort from "similar" adolescents would possibly elicit other aspects in the factors. However, we will argue that if you give the participants "good material" (statements) you also will get "good" factors, in the sense that the participants feel they were able to express their perspective through the Q sort. Hence, validity in Q methodology relates, in some way, to the researcher's ability to grasp participants' perspectives and understandings through the selection of statements (Størksen & Thorsen, 2011). The core question is whether or not the participants are able to adequately present their views in terms of the available set of statements. Therefore, in order to increase the likelihood of a Q set useful for adolescents to express their views about participation in collaboration teams, the researchers aspired for thoroughness in the Q sampling and chose a Q sample approach that combined naturalistic and theoretical sampling of statements.

Vulnerable groups of people may find it easier to participate in research when it does not require verbalising their views. They are given the opportunity to voice their perspectives through the Q sorting procedure, and their Q sort is as valid as any other Q sort. For some, Q sorting may even be the most applicable way to reveal a nuanced subjective view about a sensitive subject. For participants who for some reason find it difficult to elaborate on their views, it is perhaps even more crucial that the Q sampling is thorough and well developed in order to elicit their subjective views. Their Q sort will be their only subjective expression, while other participants may add information by elaborating on the statements in the Q sample. Through a well-balanced design and a strong effort to secure content validity, we may be better able to ensure that their voices can be heard, which, in our view, are the most important voices when it comes to improving welfare services for vulnerable groups.

Concluding remarks

Theoretical sampling may not be applicable for all studies. Some themes will have a closer link to theory than others, while others will have a more inductive exploratory character. The most appropriate field for the application of a combined Q sample approach is perhaps that of studies aiming to explore subjectivity in relation to specific theoretical subjects that the interviewees may find difficult to isolate from other aspects that they associate with the overall interview theme. Particularly, when the interviewees have strong emotional experiences in relation to the theme, as was the case in our illustrative empirical research project, it may be difficult to talk about certain aspects of the theme and not just focus on what they have strongest feelings about.

Drawing on experiences from a study of adolescents' perceptions about collaboration and service-user participation, we have demonstrated and argued for the value of a combined Q sample approach. In order to help visualize this combined sampling procedure, we have also introduced the Concourse Box (Figure 1). Combining a naturalistic and theoretical approach may strengthen the heterogeneity of the Q set and at the same time sharpen the focus of a Q study. It is our contention that a combined Q sample approach has the potential to strengthen the validity of a Q study and, therefore, that this illustrative example should be of value in contributing to the enhancement of Q methodology. In the light of our own experience, supporting a natural sampling approach with a theoretical sampling approach is possibly particularly beneficial for the investigation of vulnerable groups.

Acknowledgement

The authors wish to thank Dr. Amanda Wolf, Deputy Head, School of Government, Victoria University of Wellington, for her useful guidance in our work with this article.

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