Using Multivariate Concept-Mapping for Examining Client Understandings of Counselling

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ABSTRACT

Many qualitative research methods inadvertently examine the client's perspective through the lens of researcher- or counsellor-derived constructs and categories, thereby blurring practitioner and client perspectives. This article provides a step-by-step guide for conducting multivariate concept-mapping (MVCM), a mixed-methods research design that can be used to provide more trustworthy accounts of the client's experience. Until there is a greater accumulation of counselling research using methods that allow clients to categorize the content they provide, this article can serve as an impetus for counsellors to carefully scrutinize the categorization-based research on the client's perspective that they use to inform their practice.

RÉSUMÉ

Plusieurs méthodes de recherche qualitative étudient par inadvertance la perspective du client par l'intermédiaire de la lentille des structures et catégories issues du chercheur ou du conseiller—ce qui brouille les perspectives du praticien et du client. Le présent article fournit un guide par étapes pour la schématisation conceptuelle multivariée (*MVCM*), un plan de recherche par méthode mixte qui peut être utilisé pour obtenir des comptes rendus plus dignes de confiance sur l'expérience du client. Jusqu'à ce qu'on ait accumulé plus de recherches sur le counseling qui utilisent des méthodes permettant aux clients de classer le contenu qu'ils fournissent, le présent article peut servir d'incitatif aux conseillers pour scruter avec soin la recherche axée sur le classement des perspectives du client qu'ils utilisent pour renseigner leur pratique.

Whereas traditionally the counsellor's and the investigator's points of view have predominantly informed our understanding of counselling processes, the client's perspective is now recognized as invaluable in delineating counselling processes (e.g., Bedi, 2006). However, many popular qualitative and quantitative research designs seeking to categorize clients' experiences (including the Critical Incident Technique [CIT], see Flanagan, 1954; Woolsey, 1986) inadvertently examine the client's perspective through the lens of investigator-derived or counsellor-derived constructs and categories, thereby blurring counsellor and client perspectives and resulting in an indirect and biased portrayal of client experiences (cf. comments of Elliot & James, 1989). Multivariate concept-mapping (MVCM; Trochim, 1989b), as applied to counselling research, is a mixed-methods research design that uses clients not only to generate units for analysis (e.g., statements) but also to

categorize them, thereby faithfully privileging the clients' subjective experiencing of counselling processes. This article introduces MVCM as an exemplary analytical method for understanding the client's perspective on experiences in counselling and provides a step-by-step guide for conducting MVCM research on counselling processes. An example applying this research method to understanding the client's perspective on the counselling alliance is presented along with a comparison of MVCM to the CIT.

Although the term *concept-mapping* encapsulates a number of different procedures, most of these methods are geared toward pictorially representing the conceptualization of single individuals and many of these methods do not employ sophisticated quantitative or qualitative analyses (for more details see Jackson & Trochim, 2002; Trochim, 1989b). The type of concept-mapping under consideration here refers to a mixed-method form of concept-mapping that can readily yield the collective understanding of a group of individuals (a sort of consensual truth) in a graphical format (Trochim, 1989a, 1989b). In synopsis, MVCM is a structured research strategy that often involves eliciting participant statements relevant to a particular topic (directly or through transcript and document analysis), having participants sort these statements into groups based on conceptual similarity (or some other operational definition of similarity), and statistically analyzing this sorting information using sequential continuous and categorical multivariate methods (typically multidimensional scaling followed by cluster analysis).

MVCM is gaining increased prominence in mental health research (see examples in Johnsen, Biegel, & Shafran, 2000). A cursory description of several studies that have used MVCM in counselling process research, in particular, is provided below (presented in chronological order).

1. Kunkel and Newsom (1996) examined clients' presenting problems using a sample of 36 proxy sorters to sort 70 statements (extracted from the intake forms of 83 clients).
2. Paulson, Truscott, and Stuart (1999) examined clients' experiences of helpful events in counselling using a sample of 36 clients (19 of whom participated in the sorting task) who generated 80 statements.
3. Truscott, Paulson, and Everall (1999) examined clients' accounts of unhelpful events in counselling using a sample of 35 former clients (19 of whom participated in the sorting task) who generated 36 statements.
4. Paulson and Worth (2002) examined key therapeutic processes in overcoming suicidal ideation and behaviours using a sample of 9 previously suicidal clients who generated 65 statements (a new sample of 35 previously suicidal clients was used in the sorting task).
5. Bedi (2006) examined the client's perspective on the formation of a counselling alliance using a sample of 40 clients (31 of whom returned for the sorting task) who provided 74 common factors in alliance formation.

MVCM can be ideal for investigating client experiences as self-understood when the intent is to minimize the biasing effects of investigator- or counsellor-

imposed connotations and understandings. Allowing participants to utilize their own meaning systems for creating and organizing categories ensures that the determined categories better reflect their conceptual structure rather than the conceptual structure of investigators or counsellors. Participants' labels are also solicited and used in naming categories, thereby also eliminating researcher or counsellor labelling biases. In sum, categorization through MVCM should be more convincing in representing participants' experiences because the meaning structures of investigators are needed neither for creating categories nor for naming them. Thus, the understanding of the construct in question is largely grounded in participant comprehension. In addition, by employing human judgement and statistical analyses in concert, the categories in MVCM are more empirically grounded than many other categorization research methods.

Critics of the method have noted that individual differences and subgroup differences have been obscured in MVCM analyses, as the ultimate aim is to develop an averaged, aggregate understanding (Riger, 1999). However, newer methodological advancements such as idiographic concept-mapping (e.g., Goodyear, Tracey, Claiborn, Lichtenberg, & Wampold, 2005), pattern-matching (e.g., Kane & Trochim, 2007), and individual sort-group correlations (e.g., Bedi, 2006) have emerged to allow the assessment of the fit of the final categorical system for each individual or subgroup.

conducting multivariate concept-mapping

MVCM, as commonly practiced within the Trochim (1989b) model, adheres to several demarcated steps. These steps are (a) establishing the research specifications; (b) creating the units of analysis (usually in the form of participant statements); (c) structuring the statements into groups of conceptually similar statements; (d) rating the statements; (e) running two-dimensional, non-metric multidimensional scaling (nMDS) on the group-sort data (to determine an aggregate understanding of the similarity between statements); (f) running hierarchical cluster analysis (hCA) on the nMDS coordinates (to decide on a final cluster solution); (g) creating concept maps; (h) labelling the clusters; (i) interpreting concept maps; and (j) utilizing the maps (cf. Campbell & Salem, 1999; Jackson & Trochim, 2002; Paulson et al., 1999; Trochim, 1989b; Trochim, Cook, & Setze, 1994). Participants can be involved, to various degrees, in every step of the analysis to further promote the claim that this primarily quantitative research method can be highly client-centred. These steps are further described below.

Establishing the Research Specifications

The first step of MVCM requires a detailed outlining of the research study, its purpose, and the parameters of the construct to be examined. This includes defining the actual content domain as well as the means by which the statements will be obtained and rated, by whom, by how many participants, and on what basis.

The investigators must decide whose voices they wish to capture, and an appropriate sample must then be identified (Campbell & Salem, 1999). It has been advocated that MVCM is at its best when it includes the perspective of a wide variety of pertinent individuals. Doing so better ensures that a diversity of viewpoints are incorporated, which often results in a greater relevance of the final results for more individuals (Trochim, 1989b). In some contexts, it might be possible to use random sampling techniques to select a representative sample of participants from a larger defined population (e.g., Campbell & Salem) in order to allow for the less contestable generalization of the concept map to the larger population. However, given that such a sampling method is often unfeasible, purposive sampling and generalization on the basis of similarities and differences (e.g., of sample characteristics or of environmental conditions), termed *intuitive* or *analytical generalizability* (Stake, 1994), can also be done.

There is no fixed upper or lower limit on the number of participants needed to implement MVCM methods. The required number of participants depends on the concept under study, with the goal being to thoroughly identify the essence and variety of participants' experiences or understandings (Trochim, 1989b; Truscott et al., 1999). It seems intuitive that the more respondents used at each stage of the analysis, the better the resulting concept maps will represent the sample's collective understanding of the particular topic (Jackson & Trochim, 2002). Sample sizes as small as 10 to 20 have been found to be highly manageable (Trochim, 1989b) and sample sizes of 20 to 30 have been consistently judged to provide valid results (Trochim, 1993).

Sample size for category-creating research methods such as MVCM also refers to the number of statements collected. In order to ensure as complete coverage of the domain as possible, a loose guideline should be to collect until adequate redundancy of statements appears (cf. Flanagan, 1954; cf. Paulson et al., 1999).

Creating the Units of Analysis

To create the units of analysis, participants are asked to report ideas, thoughts, or experiences (often in the form of statements) in response to a specific question or an open-ended prompt reflecting the topic under consideration. There are several ways that statements can be obtained, including group brainstorming, individual interviews, self-report questionnaires, and the extraction of statements from text documents (e.g., reports, memos, books, transcribed interviews, field notes).

In counselling process research using MVCM, participants' responses are typically audio-recorded, transcribed, and then analyzed to obtain statements that capture the meaning of participant experiences (Paulson et al., 1999; Truscott et al., 1999). Such extractions can be made either individually or in groups and by either participants or researchers (Jackson & Trochim, 2002). An important issue in extracting statements from text data is to retain the original language of participants' responses as much as possible (Jackson & Trochim; Truscott et al.). Discussions with participants can also be held to reduce uncertainty about ambiguous extraction decisions made by investigators (Jackson & Trochim). Once the

statements have been generated or extracted, it is useful to edit the statements to eliminate awkward wordings, technical jargon, extraneous statements (e.g., due to misunderstanding the question), and statements of insufficient detail.

Very large numbers of statements impose important practical and computational limitations. To avoid participant fatigue, Trochim (1989b) recommended limiting the number of statements to 100 or fewer. If the initial set of statements exceeds this number, there are several ways to reduce the set. For example, redundancies can be eliminated (e.g., Paulson et al., 1999) or representative statements can be chosen to reflect a larger subset of related statements (e.g., Campbell & Salem, 1999; Tracey, Lichtenberg, Goodyear, Claiborn, & Wampold, 2003). Once the needed reduction decisions are made, the final set of statements should be written on index cards in preparation for the next step.

Structuring and Rating the Statements

Participants usually judge the similarity of the statements through a card sort. Working individually, each participant organizes the statements into self-defined conceptually similar piles. Specifically, participants are asked to place the cards in piles according to how they seem to go together in a way that makes sense to them. Although other methods are available to compute similarity information, such as paired comparison ratings, correlations, measures of stimulus confusability, and interaction frequencies (Fitzgerald & Hubert, 1987), these become impractical with a large number of items (Shern, Trochim, & LaComb, 1995). The strength of sorting to judge similarity is its time and labour efficiency.

A few restrictions can be placed on participants' sorting strategies to ensure the subsequent statistical analyses are optimized (cf. Campbell & Salem, 1999; Trochim et al., 1994; Truscott et al., 1999), or participants can be given free rein on the sorting activity (e.g., Goodyear et al., 2005). Nevertheless, each sorter self-determines how many categories to create, what each category should contain, and what each one should be named.

It has been recommended that at least 20 participants engage in the sorting task (Paulson et al., 1999), although valid results have been obtained with as few as 10 participants (Trochim, 1989a, 1989b). It is also recommended that the participants who generated the statements do the sorting. Because this is not always practical, proxy sorters can be carefully chosen (for guidelines see Jackson & Trochim, 2002), although their use can draw the validity and generalizability of the results into some question. During the rating step, participants appraise each statement on a Likert-type rating scale reflecting some important dimension (e.g., importance, significance, strength). Descriptive statistics are then calculated on these ratings.

Running Non-Metric Multidimensional Scaling on the Group-Sort Data

During this step, the statistical technique of unweighted two-dimensional nMDS is typically performed on the data reflecting the sorted statements to suggest the aggregate, organizational principles inherent in the sorting. The Concept System computer software, currently at version 4.0 (Concept Systems Inc., 2008),

automatically reformats the data into the matrix format needed for MVCM, but for those wishing to use other statistical packages, the details of matrix set-up are provided in Bedi (2006). Unweighted nMDS is a statistical technique that takes some measure of similarity (e.g., frequency with which items were grouped together in the same pile across participants) and plots items such that the distance between points indicates their similarity. In other words, statements that appear closer to each other on the concept map were sorted together more frequently (Johnsen et al., 2000). The exact position of each point on the map (e.g., top, bottom, right, left) is not as important as the distance between the points.

When conducting nMD, one has to specify how many dimensions the set of points is to be fit to. The issue of dimensionality in nMDS has been well discussed in the literature (Jackson and Trochim, 2002; Trochim, 1989b). A popular view suggests that the selection of a two-dimensional solution for MVCM is appropriate given that the primary purpose of the nMDS configuration is to display clustering results visually, which is difficult to do in three or more dimensions (e.g., Fitzgerald & Hubert, 1987; Kruskal & Wish, 1978). This latter conclusion is consistent with the viewpoint of Trochim (1989b). He found that two-dimensional solutions have almost always been acceptable as long as they have been coupled with cluster analysis. Therefore, in terms of dimensionality, MVCM typically works in two-dimensional space (Jackson & Trochim). A statistic termed a *stress value* can be used to judge the adequacy of a two-dimensional solution. The stress value is an overall index of the stability of the nMDS solution and ranges from zero (perfectly stable) to one (perfectly unstable). More specifically, stress represents the extent to which the created nMDS pattern of similarities matches the observed similarities (i.e., the extent to which the similarity data can be translated into corresponding two-dimensional distance data). According to Trochim (1989b), a rule of thumb when working with complex psychological phenomena is that a stress value of less than .30 represents a stable nMDS solution whereas a value over .40 indicates that data were not consistently sorted in any clear, thematic way.

Running Hierarchical Cluster Analysis on the nMDS Coordinates

During this step, agglomerative hCA is applied to the coordinate data derived from nMDS to identify conceptually similar groups of sorted items. According to Afifi and Clark (1996), this type of cluster analysis is most helpful in identifying categories when the structure of categories is not already known.

Specifically, hCA partitions the point map developed by nMDS into non-overlapping clusters of related statements and superimposes this cluster solution onto the two-dimensional nMDS plot. The cluster boundaries around groups of points represent statements that were more frequently sorted together in the same pile and less often sorted with statements in other piles. The key task is to decide how many clusters the statements should be grouped into for the accepted solution (Johnsen et al., 2000). A few heuristics guide the researcher. First, as suggested by Trochim (1989b), all cluster solutions from about 20 to 3 clusters should be examined in an attempt to decide whether a particular grouping or

combination of clusters makes conceptual and interpretive sense (see also Johnsen et al.). Second, *bridging values* can assist in selecting a cluster solution (Jackson & Trochim, 2002). A bridging value ranges from zero to one and mathematically indexes how often a statement was sorted with others that are close to it on the map compared to those statements further away (Concept Systems Inc., 2008). Lower bridging values indicate a closer relationship with other statements in the cluster (and a "good" categorization solution will have many low cluster bridging values). Third, selecting a cluster solution close to the average number of piles used by participants to categorize the statements lends further credence to the claim that the final classification scheme represents a typical client experience.

Creating Concept Maps

Once we have conducted nMDS and hCA, the results are represented in graphical form by way of several types of concept maps (Concept Systems Inc., 2008; Trochim, 1989a, 1989b), some of which are

1. A *statement map* (see Figure 1) locates each of the statements as a bivariate point (based on two-dimensional nMDS). Distance between points reflects the extent to which statements were sorted together and thus is an indicator of conceptual similarity.
2. A *cluster map* (see Figure 2) shows how statements can be grouped into clusters according to conceptual similarity (i.e., displays the results of hCA).
3. A *cluster rating map* (see Figure 3) shows the average rating of statements included within each cluster. Height represents higher average ratings.
4. A *cluster bridging map* (see Figure 4) shows the average bridging values (reflecting homogeneity) of each cluster. A higher cluster height indicates a higher average bridging value.

Labelling the Clusters

Each cluster is given a name that is deemed to best describe the set of statements in that cluster; participants can be included in naming the final categories. The participant-generated title that falls closest to the centroid of the final plotted cluster (i.e., the single participant's category label that best matches the final group cluster/category) can also be used to name categories in the participant's own words, as is done in the Concept System software (Concept Systems Inc., 2008).

Interpreting Concept Maps

Many avenues of interpretation can be gleaned from the above discussion. For example, statements within clusters are considered conceptually homogeneous to varying degrees, points or clusters that fall closer together are more conceptually related, and the height of clusters represents their importance or bridging. Given that the concept map is a map, interpretation can involve taking a geographic "trip" across the map, paying particular attention to spatial relationships between the clusters and/or individual statements. Participants should subsequently ex-

amine the resultant concept maps and judge whether they correspond to their understandings or, at least, seem reasonable to them (for an example of how this can be done systematically, see Bedi, 2006).

In providing an interpretation of a concept map, it is important to enquire about the degree to which concept maps are reliable and valid. No single, infal-

Figure 1
Statement map

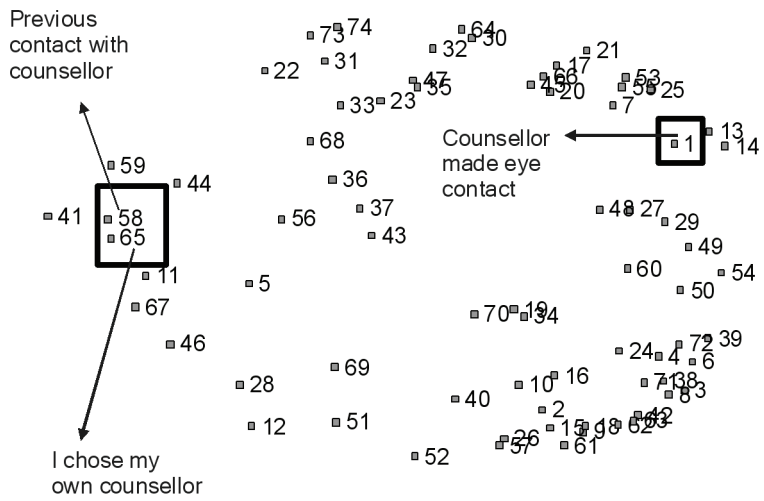
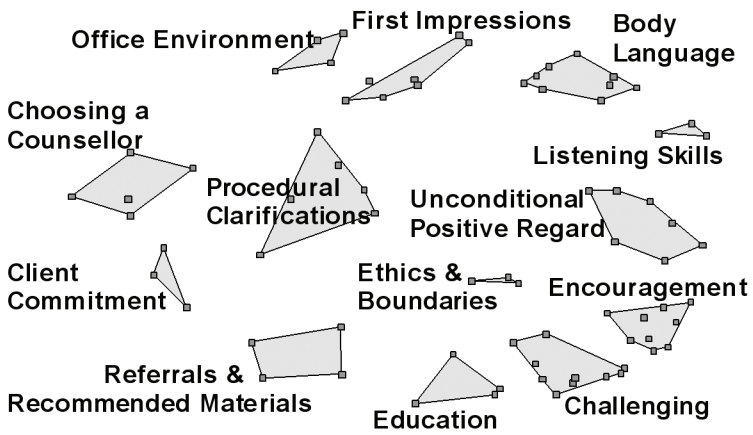


Figure 2
Cluster map



lible estimate of either reliability or validity for this multistep complex process is available (Trochim et al., 1994). As noted by Jackson and Trochim (2002), each step of MVCM has reliability and validity implications. Decisions made at

Figure 3
Cluster rating map

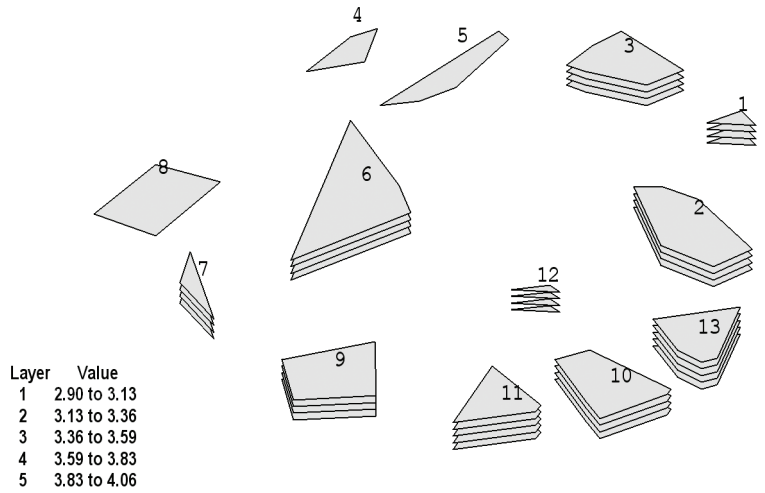
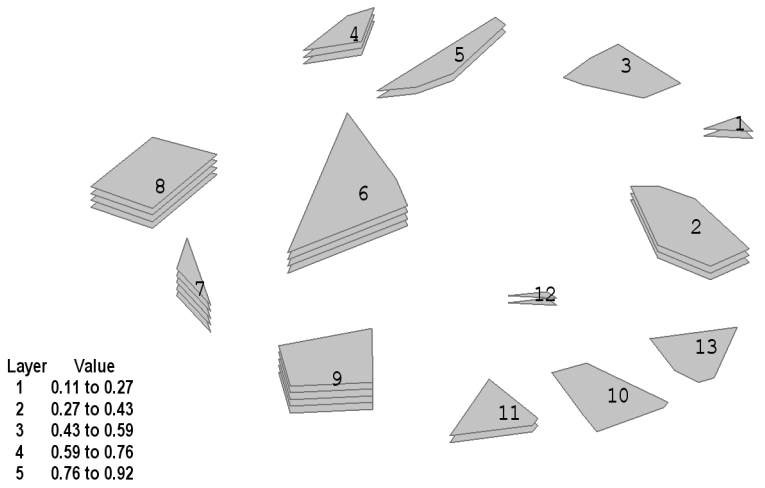


Figure 4
Cluster bridging map



each stage (e.g., the decision to use original or proxy sorters) can either increase or decrease how representative the obtained results are. Some indications of the procedural validity of MVCM in representing participant accounts have already been noted when discussing the advantages and strengths of MVCM, and primarily relate to the high degree to which it is a participant-driven method. For the sake of simplicity, *reliability* in MVCM can be understood as the degree to which parts of the process (e.g., statement generation, sorting, ratings, cluster labelling, concept maps) are repeatable and *validity* as the degree to which parts of the process can be reasonably judged to reflect some underlying and locally constructed "reality" (cf. Trochim, 1989b). A summary of reliability and validity measures is presented in Trochim (1993) and exemplified in Bedi (2006). Some methods include individual sort-group sort correlations and split-half reliability analyses.

Utilizing Concept Maps

During this step, the concept maps are used for the overall purpose set out in Step 1. In counselling research this can be, for example, stimulating additional research on newly identified variables, forming theory or a model, testing theory, creating a training regimen, developing a counselling program, or evaluating a counselling program.

CONCEPT-MAPPING COMPUTER ANALYSES

In conducting MVCM, two options exist for the computer analyses and graphical presentation of the results. In using general-purpose software, a statistics program that provides nMDS and hCA (with flexible data-manipulation capabilities) and a sophisticated graphics program are required (Trochim, 1989b). However, there are some data entry and data analysis complexities, such as the likely need to construct and import data in matrix format and the need to use computer programming syntax language for some analyses (see comments of Trochim, 1989b). Alternatively, the Concept System computer software (Concept Systems Inc., 2008) combines word processing, statistical, and graphical capabilities using the appropriate statistical algorithms, and allows for user-friendly completion of concept mapping analyses.

AN EXAMPLE OF MVCM IN COUNSELLING RESEARCH

The following represents the preliminary report, using simplified analyses, of Bedi (2006),[1] presented here to exemplify the method in the context of an actual research question and not for the purposes of putting forth content knowledge about the counselling alliance. The reader is referred to Bedi to better understand the client's perspective on counselling alliance formation.

Forty participants were interviewed about their experiences in counselling. Important counselling alliance formation factors (in the form of participant state-

ments about critical incidents involved in the formation of their own counselling alliance) were then documented from their accounts. Thirty-one participants then returned and sorted the 74 most common statements into self-defined conceptually meaningful categories. MVCM statistical techniques were used to compute the "average" multivariate sort across the participants. This represents the most typical conceptual structure used by participants on helpful factors in establishing a positive counselling alliance. After completion of the sorting task, participants were given a questionnaire and asked to rate the relative importance of each statement for establishing a "good working relationship" between them and their counsellor on a 5-point Likert-type scale.

Based on the statement map (Figure 1), we can decipher which statements are related to which others. Three statements are highlighted to exemplify that statements falling closer together are conceptually more similar than statements falling further apart. As can be seen in the Cluster Map (Figure 2), factors important in alliance formation can be classified into 13 categories based on basic MVCM analyses: Office Environment, First Impressions, Body Language, Listening Skills, Unconditional Positive Regard, Encouragement, Challenging, Ethics and Boundaries, Education, Referrals and Recommended Materials, Client Commitment, Procedural Clarifications, and Choosing a Counsellor. The cluster rating map (Figure 3) indicates which categories of alliance formation factors were rated as more and less important by clients (e.g., Choosing a Counsellor [#8], First Impressions [#5], and Office Environment [#4] are rated as relatively less important, while Education [#11], Counsellor Body Language [#3], Procedural Clarifications [#6], Challenging [#10], and Listening Skills [#1] are rated as relatively more important). The cluster bridging map (Figure 4) indicates which categories are most homogeneous with respect to how items within them were sorted with other statements (for example, the items composing Challenging [#10] were usually sorted together rather than with other statements; conversely, the items composing Client Commitment [#7] were often sorted with items belonging to other clusters, implying that clients understand the concept of Client Commitment quite differently from each other).

comparing mvcm with the critical incident technique

To help clarify the distinctness and benefits of MVCM, it would be useful to compare and contrast it to a more established research method. The CIT is selected for this purpose because (a) it is a popular method amongst Canadian counselling researchers, (b) it has a reasonable rate of use in empirical articles published in the *Canadian Journal of Counselling* and thus should be fairly familiar to the international readership of this journal, (c) its results can be questioned as to the extent that the emergent categories represent client understandings in a trustworthy manner, and (d) it can be viably integrated with MVCM.

It has been just over 20 years since Woolsey (1986) published an article in the *Canadian Journal of Counselling* promoting the benefits of using the CIT (Flana-

gan, 1954) for Canadian counselling research. Since that time, the method has become much more popular amongst counselling students, counselling researchers, and counsellor educators (for a detailed account see Butterfield, Borgen, Amundson, & Maglio, 2005). For example, within a roughly 12-year period from 1991 to 2003, an average of almost two theses or dissertations per year at the University of British Columbia's counselling psychology program used the CIT research method. Moreover, several *Canadian Journal of Counselling* articles have used this method to inform counsellors and counsellor educators. For example, the CIT has been used to explore barriers and facilitators of reflective practice in counsellor education (Wong-Wylie, 2007), the client's perspective on counselling alliance formation (Bedi, Davis, & Arvay, 2005), First Nations healing practices (McCormick, 1997), the use of family systems approaches by school counsellors (Sawatzky, Eckert, & Ryan, 1993), and school counsellors' perceptions of their effectiveness (Gora, Sawatzky, & Hague, 1992). Clearly, and partly owing to its description in the *Canadian Journal of Counselling*, the CIT is familiar to many Canadian and international counsellors and counsellor educators and many of them have read research that employed this method to inform their practice.

Both MVCM and the CIT are categorization-based research methods that emerged out of post-positivistic thinking but have been adapted to constructivist/constructionist thought (cf. Butterfield et al., 2005; Bedi, 2006). Both can also be placed somewhere in the middle of the qualitative-quantitative research continuum as they both contains elements of each. These two research methods also share the use of verbatim client/participant statements as the original units of analysis. However, the CIT uses researchers or counsellors to impose a conceptual structure on the client/participant-elicited statements, and the bias introduced by using researcher- or counsellor-generated coding systems to characterize client experience should be apparent. As such, counsellors should carefully scrutinize CIT research that purports to represent the client's perspective in light of such potential influence before allowing it to inform their practice.

Different Results from the Critical Incident Technique

Although not exactly comparable, a comparison of the above MVCM example with the CIT results of Bedi, Davis, and Williams (2005) can further help counsellors understand the differences that can result when relying on CIT research to inform their practice. In investigating the exact same research question and using virtually the same set of participants,[2] Bedi, Davis, and Williams used the CIT to identify 196 non-repetitious critical incidents (CIs). Using two researchers/sorters and four validators, 25 consensual categories were created and validated. This stands in stark contrast to the 13 categories used in the example to summarize categories of client-identified factors in alliance formation, from the client's perspective, when using clients as sorters.

There are also some notable discrepancies in the words chosen by researchers or counsellors rather than by clients in labelling client experiences. Even when

only considering the 74 factors used in the example and mapping them onto the categories presented in Bedi, Davis, and Williams (2005), 24 out of the 25 categories were still invoked.[3] These points imply that a discrepancy seems to exist when counsellors or researchers categorize clients' statements and purport to offer a representation of the clients' perspectives versus when the clients do so themselves. Perhaps counsellors and researchers are more reductionistic (because they create a larger number of categories to describe client experience) and perhaps they use labels that are not in line with the ones that clients would use.

Another comparison study is provided by Bedi, Davis, and Arvay (2005), who also used the CIT to investigate the same research question. With a sample of nine participants who provided 107 CIs, three researchers developed an eight-category system with seven subcategories to summarize the clients' perspectives in understanding alliance formation factors. The number of categories, the labels chosen, and the fact that a higher-order categorization system was developed diverges notably from the 13 single-level categories found when using clients themselves to do the sorting in the MVCM example.

In sum, using researchers (even those trained in counselling) to impose structure on units of meaning provided by counselling clients in research (as is done with the CIT) can be questioned if the aim is to report client understandings. Counsellors who rely on researcher-generated coding systems to inform their understanding of the clients' perspectives should do so cautiously and be aware of the influence of non-client categorizers.

Although the type of MVCM described here averages across participants to come up with a single typical sort that best represents the clients' perspectives, new methods have been developed to better account for individual differences in the overall concept map and assess the extent to which the aggregate solution differentially represents the understanding of each individual in the sample (see Bedi, 2006). In fact, Goodyear et al. (2005) use similar analytical strategies to present an account of idiographic MVCM, in which a concept map model is provided for each individual.

Combining MVCM with the CIT

MVCM has traditionally lacked both the level of rigour typically involved in CIT data collection and also the output of concrete and behavioural-type information. As such, a mixed-methods approach capitalizing on the strengths of each to counter the limitations of the other is a useful strategy for counselling researchers using either method in isolation. Specifically, it would be beneficial to combine the CIT data-collection procedures with the categorization and statistical analysis techniques of MVCM (e.g., Bedi, 2006; Stiles, 2007). Doing so permits us to integrate human judgement in concert with statistical analyses and allows for the output of concrete and behavioural data in a manner that still honours participants' subjective understandings and conceptual structures. The intended flexibility of the CIT that justifies its combination with quantitative methods such as MVCM on both practical and philosophical grounds is discussed at length by Butterfield

et al. (2005) and also exemplified by Silber et al. (2006; who combined the CIT with linear and logistic regression).

CONCLUSION

Many qualitative and quantitative research designs requiring categorization of clients' experiences (like the CIT) inadvertently examine the clients' perspectives through the lens of investigator-derived or counsellor-derived constructs and categories, thereby blurring counsellor and client perspectives. MVCM (especially when combined with the CIT) is a suitable mixed-methods research design that ensures that the concluded client's perspective is a more fitting representation of the client's subjective experience of counselling processes. This article introduced MVCM as an exemplary analytical method for understanding clients' perspectives on their experiences in counselling and provided a step-by-step guide for counselling researchers interested in conducting MVCM research. An example of applying this research method to understanding the client's perspective on counselling alliance formation was also provided to better exemplify the method.

In the long term, it is hoped that this article will result in greater awareness of this research method amongst counsellor educators, counselling researchers, and students in Canada, with the result being a better overall understanding of clients' perspectives and experiences of counselling processes. This, in turn, will benefit counselling practitioners who will be able to consult this literature to inform their practice. In the short term, it is hoped that counsellors will use the arguments and principles presented in this article to critically evaluate counselling research that purports to inform them about client perspectives. In addition, counsellor educators should be careful when discussing research that uses researchers or counsellors to categorize clients' incidents as necessarily representing the phenomenological experience of clients.

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Notes

1 Please note that this cluster solution privileged interpretability (but still considered the other decision-making heuristics) in illustrating a concept map. This justified the omission of the discussion of other and more complex decision-making tools (several of which are highly quantitative) and also permitted better comparison with the CIT, which also privileges interpretability in generating a categorization scheme. A more defensible cluster solution using additional quantitative considerations is available in Bedi (2006).

2 Bedi, Davis, and Williams (2005) used 40 participants, 31 of whom returned later to complete the sorting tasks of the subsequent MVCM study exemplified above.

3 The only category in Bedi, Davis, and Williams (2005) not represented by the 74 factors in the example MVCM study was External Contact.

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