

Concept analysis: Some limitations and possible solutions

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Abstract

Concepts are the basic building blocks of scientific knowledge or theoretical frameworks for any discipline. The strength of the theories that guide a discipline is dependent on the quality of the concept analysis. Thus, the utilisation of poorly understood concepts in research and theory development will result in questionable reliability and validity.

Concept analysis is associated with the research design of philosophical inquiry. The purpose of philosophical inquiry is to perform research using intellectual analysis to clarify meaning. Traditionally, no empirical (qualitative or quantitative) investigations were used to clarify the meaning of concepts. The lack of empirical investigation to clarify concepts, results in certain limitations in the methodology of concept analysis.

It seems that methodological innovations for enhancing concept analysis is urgently required. The purpose of this article is to describe the utilisation of qualitative and quantitative strategies with literature review in concept analysis as a possible solution to limitations.

This article will firstly, describe the limitations in the traditional Wilsonian methods of concept analysis and will secondly demonstrate how the introduction of qualitative and quantitative methods with literature review can overcome some of the limitations. An example a research study on *quality of life* (Ferrans, 1997:110) will be used to demonstrate how qualitative and quantitative empirical methods with literature review can enhance the quality of concept analysis.

Opsomming

Konsepte is die boustene van wetenskaplike kennis of teoretiese raamwerke van 'n dissipline. Die gehalte van die teorieë van die dissipline is afhanklik van die gehalte van konsepanalise. Dus, sal die gebruik van onduidelike konsepte in navorsing en teorieontwikkeling die geldigheid en betroubaarheid van sodanige navorsing of teorieë beïnvloed.

Konsepanalise word met die navorsingsontwerp van filosofiese ondersoek geassosieer. Die doel van filosofiese ondersoeke is om die betekenis aan verskynsels, by wyse van 'n intellektuele ondersoek, te verleen. Tradisioneel was geen empiriese ondersoek (kwalitatief of kwantitatief) gebruik om betekenis van konsepte te analiseer nie. Die gebrek aan empiriese ondersoekmetodes in die ontwikkeling van konsepte lei tot sekere beperkings in die metodologie van konsepanalise.

Dit wil dus voorkom dat 'n vernuwing in die metodologiese benadering van konsepanalise noodsaaklik is. As 'n moontlike oplossing vir die beperkings in die metodologie van konsepanalise is dit die doel van die artikel is om die gebruik van kwalitatiewe en kwantitatiewe strategieë, bykomend tot die tradisionele literatuurondersoek, voor te stel.

Hierdie artikel sal eerstens die beperkings in Wilson-gebaseerde metodes beskryf en tweedens demonstreer hoe konsepanalise, by wyse van 'n kombinasie van kwalitatiewe en kwantitatiewe metodes saam met literatuurstudie die beperkings kan oorkom. 'n Voorbeeld van 'n navorsingsprojek oor "kwaliteit van lewe" (Ferrans, 1997:110) sal gebruik word om te demonstreer hoe die gebruik van kwalitatiewe en kwantitatiewe metodes in kombinasie met literatuurstudies gebruik kan word om die gehalte van konsepanalise te bevorder.

Introduction

Researchers investigate a phenomenon with the intention of understanding it or to give meaning to the phenomenon. Concepts as lingual constructions are the most elementary symbolic construction by which people classify or categorise reality. Concepts are the carriers of meaning. One could say that concepts are the symbolic constructions or tools by means of which people make sense of and attribute meaning to their worlds (Mouton, 1996:181)

We distinguish between two types of meanings, namely con-

notative and denotative meanings of concepts. *Connotative meaning* refers to the sense or the attributes of concepts. The essential attributes or connotations are necessary to give a theoretical definition of a concept. We also distinguish between two further uses of connotations, namely subjective and conventional connotations.

The subjective connotation is the meaning that individuals attach to a word and is closely associated with the individual's particular mindset and experiences. The conventional connotation is the assumed or accepted meaning of the concept that has implicitly been agreed upon for the sake of com-

munication. This implies that researchers within the same discipline and more specific in the same paradigm tend to share specific conventional connotations (Copi & Cohen, 1994: 181-191; Mouton, 1996: 182).

The *denotative meaning* of a concept refers to the reference or the empirical indicators of the concept. The denotations of the concepts are needed to give an operational definition of the concept and to develop an instrument to measure the concepts in reality.

The whole process of unfolding, exploring and understanding concepts is called concept analysis. The purpose of concept analysis is to give meaning, develop, delineate, compare, classify, correct, refine and validate concepts as well as to develop measuring instruments.

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Concept analysis is associated with the research design of philosophical inquiry. The purpose of philosophical inquiry is to perform research using intellectual analysis to clarify meaning (Burns & Grove, 1993:79). Traditionally, no empirical (qualitative or quantitative) investigations were used to clarify the meaning of concepts. The lack of empirical investigation to clarify concepts, results in certain limitations in the methodology of concept analysis.

It seems that methodological innovations for enhancing concept analysis is urgently required. The purpose of this article is to describe the utilisation of qualitative and quantitative strategies with literature reviews in concept analysis as a possible solution to limitations.

This article will firstly, describe the limitations in the traditional Wilsonian methods (1963/1987) of concept analysis and will secondly demonstrate how the introduction of qualitative and quantitative methods in combination with literature reviews can overcome some of the limitations. An example a research study on *quality of life* (Ferrans, 1997:110) will be used to demonstrate how quantitative and quantitative empirical methods in combination with literature review can enhance the quality of concept analysis.

Before describing the limitations in and possible solution for in concept analysis it is important to address the standards for quality concept analysis.

Standards for conceptual analysis

Ideally, concepts used in disciplines should be mature. Mature concepts are well defined with characteristics/attributes, the boundaries demarcated, the preconditions specified and

the outcomes described. The following principles (Gift, 1997:76) could be used as standards/criteria to evaluate the quality of a concept analysis, namely:

- Concepts are clear and distinct, that is, clearly defined and well differentiated from other concepts (epistemological principle).
- Concepts are coherently and systematically related to other concepts (logical principle).
- Concepts are applicable to the world or operationalised (pragmatic principle).
- Concepts are appropriate to their use in context (linguistic principle).

Limitations of the Wilsonian methods

In the 1960's Wilson (1963/1987) published a detail approach to concept analysis, describing methods to guide the process of concept analysis. Wilson's work has been extremely influential and forms the basis of concept development for many disciplines. The approach of Wilson can be briefly described as follows:

- ◆ Isolate the conceptual questions from other questions.
- Questions of concepts are about meaning. The analyst should ask, what criteria are being used to determine the meaning of the concept. If a research question contains more than one concept, the individual concepts should be isolated and addressed.
- Develop "right answers" as concepts may have multiple meanings and multiple contexts. Researchers must identify the primary uses that are at the "heart" of the concept. This requires the analyst to determine which elements are essential to the core meaning of the concept and which is not applicable.
- ◆ Apply the following techniques in identifying the meaning of the concept by constructing cases from everyday experiences:
- Model cases should refer to examples from real life, which is a true reflection of the concept.
- Related cases should refer to other concepts, which are related to the concept under investigation.
- Borderline cases should refer to those cases where uncertainty exists. For example: A boy is warned about electric wires. If the boy touches the electric wire and gets shocked is this "punishment?"
- Invented cases should be used where our ordinary experiences does not provide us with instances to clarify the concept.
- ◆ Explore the social context, nature or circumstances of the concept by asking who might use the concept, when, why and how. By doing this, the analyst stays sensitive to the cultural and social milieu in which the concept under study is used.
- ◆ Investigate the underlying anxiety/emotive context of the concept. Wilson suggests that to determine the feelings, the tone and important insights about the concept, that the analyst should ask questions such as: Is there a debate about the concept?

process or event the researcher wants to investigate. One can study individuals, groups, organisations/institutions, cultural objects, social actions and interventions. The point of focus when studying these units of analysis can be their characteristics, orientation or actions. The point of focus, namely the characteristics, orientation and actions can be the appropriate concept to be analysed.

In a study on the *quality of life* (QOL) the individual could be identified, as the unit of analysis and the point of focus is *quality of life*. QOL has become a critically important concept in health care. Quality of life considerations are significant during end of life decisions. Indicators (denotations) of the concept QOL are used to evaluate treatment in terms of cost and benefits. The quality of health care can be evaluated using the indicators of QOL. For these reasons *quality of life* seemed to be the appropriate concept that needs some clarification. The next step is to determine the purpose of the analysis.

Determine the purpose of the concept analysis

This step helps to focus the attention of the researcher on exactly why is s/he doing the concept analysis. The purpose may be to clarify the meaning of an existing concept, to develop a theory or to develop an operational definition and a measuring instrument.

In the example of the study on *quality of life* (Ferrans, 1997:110) the purpose of the study was to develop a conceptual framework on which an instrument to measure QOL could be based.

Development of the concept

Ferrans (1997:110) began the research on *quality of life* in 1982. The research was conducted in different phases. Each of these phases will be discussed.

Phase 1	Literature review
Phase 2	Qualitative study
Phase 3	Literature review
Phase 4	Quantitative study
Phase 5	Literature review
Phase 6	Qualitative research

Phase 1: Literature review

To formulate meta-theoretical/theoretical assumptions may not be relevant for all concept analyses. In the case of the study of QOL it is however important to determine the point of departure. The researcher chose an individualistic philosophical viewpoint, in which individuals personally defined what QOL meant for them. The individualistic viewpoint recognises that different people value different things. In the study of QOL the perspectives of Campbell, Converse and Rogers (1976) were used as theoretical departure. It was argued from this perception that QOL relates to in the experience of life.

The results of the literature review revealed six meanings of

QOL, namely:

- The ability to live a normal life.
- Ability to live socially useful (social utility).
- Natural capacity (physical and mental capacity)
- Achievement of personal goals.
- Happiness/affects.
- Satisfaction with life.

After clarifying/analysing each of the six attributes/connotation individually the researcher came to a conclusion that the connotation, "satisfaction with life" is the best fit to conceptualise QOL. From phase one a theoretical definition of QOL was formulated, namely:

QOL is a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important for him/her.

Phase 2: Qualitative research

In phase two of the concept analysis of *quality of life*, the researcher (Ferrans, 1997:110) used a qualitative approach. The researcher (Ferrans, 1997:110) interviewed 40 haemodialysis patients to determine the components of a satisfying life. Patients were asked to characterise the best and worst possible lives they could imagine in open-ended questions. Data were coded in terms of elements of life that were mentioned using inductive coding techniques of Glaser and Strauss (1967). Twenty-two aspects of life were identified through the discussion of the best possible and eighteen were identified through the worst. The findings were compared with other similar studies in phase 3.

Phase 3: Literature review

The researcher (Ferrans, 1997:110) conducted an extensive literature review. More than 400 studies, assessing life satisfaction, were listed. Based on the literature review, a list of dimensions to assess QOL was developed. The data from the original qualitative analysis (phase 2) and from the literature review were integrated to produce a list of 32 elements of QOL that represented QOL of the general population. Three additional elements were identified from the data of the dialysis patients.

These 35 elements were used as the basis for the development of the Ferrans and Powers (1992) QOL index. Each element was used to develop two items, one to assess the satisfaction with the element and one to assess the importance of the element.

Phase 4: Quantitative research

The next task in the concept explication was to cluster related elements together into domains of QOL. The researchers (Ferrans, 1997:110) used exploratory factor analysis in phase four to determine the nature and number of the domains. The QOL index was used to collect data from 349 haemodialysis patients that were randomly drawn from the haemodialysis patients in Illinois. The results revealed that four factors fit the data the best, which represent the four

- ◆ Test the practical significance of the concept by creating questions of the concept that have definite yes/no answers.
- ◆ Choose the meaning of the concept that represents the most useful meaning of the concept to generate practical results.
- ◆ Conduct an internal dialogue about the concept.
- ◆ Re-analyse the conceptual questions for relevancy.
- ◆ Compare the results.
- ◆ Define the concept.

The methods of Wilson (1963/1987) are based on a philosophical design, a literature study and intellectual analysis without empirical (qualitative or quantitative) methods. The absence of empirical methods contributes partly to the limitations in the results of concept analysis by Wilson-derived methods. The limitations in the Wilsonian methods are echoed by Gift (1997: 17/24) in the following statements:

- An incomplete and vague description of the application of the methods is provided.
- Lack of clarity about the suitable concept for the analysis and how it was chosen, exists.
- Failure to integrate the steps and the application of the methods in a cookbook or stepwise procedure is evident.
- Lack of rigor is perceived.
- The results of the analysis remains insignificance and without substance. It lacks comprehensiveness, exploratory power and is superficial. The methods tend to provide a list of attributes (connotations) of the concept only, without a clear understanding of the phenomenon.
- Limitations in the utilisation of a model and other cases to identify/verify the essential attributes of a concept are evident.

After a critical analysis of the results from the Wilsonian-derived methods, Morse and other authors (Gift, 1997:92) did not recommend the continued use of Wilsonian-derived methods for concept analysis and development. It is apparent that the major problem with the Wilsonian-derived methods is the absence of empirical methods that could provide triangulation and rigor to the analysis of concepts.

Possible solutions to the limitations

To overcome the limitations of the Wilsonian methods, literature combined with quantitative and qualitative approaches can be employed in conducting a concept analysis. This article doesn't condemn the traditional Wilson-derived methods but does rather propose the combination of qualitative and quantitative approaches with literature studies and intellectual analysis to overcome the various limitations.

A basic rule of science, namely to integrate a inquiry/study within existing knowledge frameworks is also applicable to concept analysis. To explore existing literature for the meaning of a concept should be one of the methods in the process of a concept analysis. Literature can also be used to verify the meanings/the uses/the boundaries/the preconditions/the out-

comes of the concept.

Qualitative methods differ markedly from traditional quantitative approaches in that they require the collection of specific data from participants and the inductive analysis of that data. The decision of which qualitative method to use depends in part on the purpose of the conceptual inquiry. *Phenomenological* methods are well suited for concept identification and concept analysis. *Ethnographical studies* are helpful to elicit cognitive categories and to develop concepts from the perspectives of informants. *Unstructured interviews* are analysed to identify the concept of significance. Using a *semantic technique*, for example sentence completion, assists to identify the characteristics of concepts. The boundaries of the concept can be identified by using q-sorts or card sorts. *Grounded theory* is particularly useful in concept analysis. A combination of two qualitative methods can be used to obtain the most comprehensive picture of the phenomenon (Gift, 1997:80).

Quantitative approaches to concept analysis are generally brought into play only after considerable preliminary work has been done to clarify the concept. Once the research has clearly described internal characteristics of the concept and provided a well-defined theoretical definition, the next step is to employ quantitative methods to validate and refine the concept with a strong emphasis on the epistemological and pragmatic principle. Often a conceptual map/model is produced and then subjected to deductive quantitative testing. Quantitative techniques like factor analysis, correlations, regression analysis, discriminant analysis and a Chronbach's Alpha could be used to enhance validity and reliability of the results (Gift, 1997:86).

The methodology where literature in combination with qualitative and quantitative approaches is employed will be demonstrated by using an example of a completed research project on *Quality of life* by Ferrans (1997:110).

Demonstration of the combined research methodologies

Concept analysis is a skill and a list of methods/techniques cannot fully describe a skill. By using the various research methods/techniques in a creative way the researcher can develop her/his own individual approach in applying the techniques and methods (Rossouw, 2000:27). The following is an example of the process of concept analysis as outlined by Ferrans (1997:110) consisting of the following steps/techniques, namely:

- Select a concept
- Determine the purpose of the concept analysis
- Develop the concept by using different approaches and methods.

Select a concept

The concept to be analysed is normally one of the key concepts in a research project. It is related to the unit of analysis. Unit of analysis refers to what object, phenomenon, entity,

interrelated domains of QOL, namely

- Health and functioning
- Psychological/spiritual
- Social and economic
- Family

Higher order factor analysis performed on the factors demonstrated that the overall construct of the elements was "life satisfaction".

Phase 5 Literature review

Again literature review was conducted to validate the conceptual framework from the previous phases.

Phase 6 Qualitative research

To confirm the generalisation of the framework to other cultures another qualitative research was conducted and major differences were reported.

Conclusion

The researchers in the study of QOL did not use a Wilson-based method for concept analysis. They used a combination of qualitative and quantitative approaches with literature review to develop a conceptual framework for QOL. This framework provided the basis for the development of the Ferrans and Power (1992) QOL Index. Health professionals are using this instrument in research and clinical practice in 18 countries. It was translated into 9 languages. The concept analysis by using a combination of methods contributed to a better understanding of the impact of illness and treatment on QOL.

By adding qualitative and quantitative approaches with literature review most of the limitations of the Wilson-based methods can be overcome.

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