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## The Metaphors That Research Students Live By

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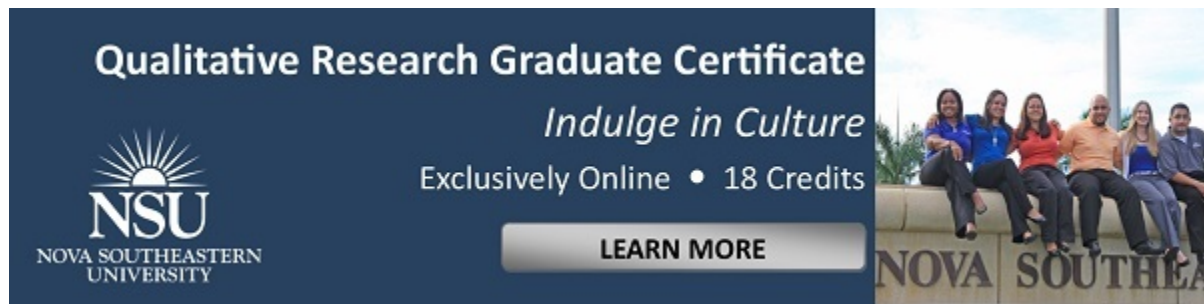
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## The Metaphors That Research Students Live By

### Abstract

In this paper I report a study of the ways in which research students think about their research. I took a unique approach by using metaphor analysis to study the students' conceptions. The research students in this study were recruited for an on - line survey at an Australian research - intensive university in which they answered questions relating to their conceptions of research. Five categories of metaphors for research were arrived at which I have labelled metaphors of space, metaphors of travel, metaphors of action, metaphors of the body and metaphors of ordeal. These metaphors provide useful information about the ways that the students visualise their research and their conceptions of what it entails.

### Keywords

Research Students, Conceptions, Metaphors, Metaphor Analysis

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## **The Metaphors That Research Students Live By**

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In this paper I report a study of the ways in which research students think about their research. I took a unique approach by using metaphor analysis to study the students' conceptions. The research students in this study were recruited for an on-line survey at an Australian research-intensive university in which they answered questions relating to their conceptions of research. Five categories of metaphors for research were arrived at which I have labelled metaphors of space, metaphors of travel, metaphors of action, metaphors of the body and metaphors of ordeal. These metaphors provide useful information about the ways that the students visualise their research and their conceptions of what it entails. Keywords: Research Students; Conceptions; Metaphors; Metaphor Analysis

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### **Introduction**

There are a number of ways of finding out students' conceptions of their work. I chose to use metaphor analysis of the responses to an on-line survey. In responding to the survey the research students at an Australian research-intensive university were asked to describe their work as they would to an undergraduate student who had some interest in pursuing a doctorate at some time in the future. In this way I was able to collect the metaphors that the students used to describe their work and hence to be able to ascertain their conceptions of it.

There has only been a limited number of studies about the conceptions of research amongst different groups of university people such as academics (Åkerlind, 2008; Brew, 2001), supervisors (Bills, 2004; Kiley & Mullins, 2005), postgraduate students (Meyer, Shanahan, & Laugksch, 2005, 2007) and postdoctoral researchers (Pitcher & Åkerlind, 2009). These studies used various methods such as phenomenography, participant-observation, focus group conversations, surveys, and questionnaires to explore the participants' conceptions of research. I argue that providing another perspective on students' conceptions of research can give the reader another view of an important area of research and broaden his or her understanding of the topic.

There has been no general agreement as to how conceptions of research should be named or described. All the studies that have been performed to date have produced different descriptions and categories of conceptions of research. In this paper I offer a set of descriptive labels that illustrate the participants' conceptions as well as telling us something about their approaches to research.

The research reported in this paper was conducted under the rules of the Ethics Committee of the Australian National University, Australia. Ethical clearance was sought and approval was granted before the research was undertaken. All the research described in this paper was conducted solely by the author, who gathered the data and also undertook the analysis of the responses.

The use of MIP to find the metaphors in the text, as described below, removed the researcher's bias as to what might, or might not, be considered a metaphor. This method removes the need for the analyst to rely on his or her intuition and provides a more reliable way of identifying the metaphors.

## Review of the Literature

### *Students' Conceptions of Research*

The literature on postgraduate students' conceptions of research is limited. As far as I have been able to ascertain there have been only two studies, by the same researchers, that specifically examined postgraduate students' conceptions of research. In their study, Meyer et al. (2005) aimed to produce an empirical model from the results of their analysis of the material gathered from 154 Australian and South African postgraduate students about their conceptions of research. The authors state that their aim was to find variations in how research is done and conceptualised to find out how postgraduate students' learning can be related to their research outcomes. The authors suggest that the outcomes of students' research were influenced by the ways in which students think, which in turn was likely to be dependent upon a number of factors internal and external to the student, such as motivation and knowledge of the subject acquired before the research begins. The students were likely to perceive their research in ways influenced by these factors, so they must be taken into account when analysing the data (Meyer et al., 2005).

In the questions provided by Meyer and his group, the postgraduate students were asked to describe, from their own point of view, how they would explain research to a stranger, how research is seen in their discipline, why research is done, what successful researchers actually do, and what constitutes good research (Meyer et al., 2005). The students' answers to these questions provided the data which the authors then qualitatively analysed.

On the basis of the initial qualitative analysis the authors formulated eight categories relating to conceptions of research (Meyer et al., 2005): (a) research as information gathering, the emphasis being on collecting as much information as possible to solve a problem; (b) research is about discovering the truth searching for and establishing the truth or validity of a topic through research is important; (c) research is about insightful exploration and discovery and is a way for researchers to seek new insights into existing knowledge; (d) research is about analytical and systematic enquiry, the process of research is systematic and directed at a particular purpose; (e) research is about incompleteness; research is seen as never ending in that there is always something new to be determined from new or old data and facts; (f) research as the re-examination of existing knowledge, research into old topics is useful in that it can produce new insights or conclusions or be a check for the validity of old ones; (g) research is problem based (e.g., the process of research is to identify problems, study the problems and solve them); and (h) misconceptions about research (Meyer et al.)

In discussing the results of their study of postgraduate students' conceptions of research, Meyer and his co-authors note that "it is clear that the sample that they substantively constitute does not exhibit a uniform approach to conceptualizing research or the research process" (Meyer et al., 2005, p. 236). This finding was understandable since the students bring their own cultural backgrounds and previous knowledge to their research and they will thus show the variations in personality and outlook that make them individuals.

The authors set out to test whether the findings presented in the first study could be empirically verified by examining a new group of postgraduate students and experienced and inexperienced researchers. The second episode of research was based on that new set of collected data and continued their investigation of students' conceptions of research as described in their first article (Meyer et al., 2005). The second investigation used quantitative methods rather than the mixed quantitative and qualitative methods of the first study. The new investigation was found to confirm the previous findings. The authors add that the

categories found by the new investigation were “conceptually virtually identical” to the ones reported in the previous article (Meyer et al., 2007, p. 429).

The two articles discussed above by Meyer, Shanahan, and Laugksch (2005, 2007) appear to be the only ones that investigate postgraduate students’ conception of research, although there is some literature on other types of students’ conceptions of research. As they point out, they were unable to find any literature on postgraduate students’ conceptions of research prior to writing their articles. They state that “no such acknowledged literature . . . appears to exist” (Meyer et al., 2005, p. 229), and they add that they “are not aware of any other empirical studies on this topic” (Meyer et al., 2005, p. 230).

### *Metaphor Analysis*

Although there is not a great deal of literature specifically on students’ conceptions, there is literature on the use of metaphors to investigate various types of conceptions (for more discussion on this point see Andriessen & Gubbins, 2009; Martin & Lueckenhausen, 2005; Moser, 2000; Schmitt, 2005; Steger, 2007). Many of these writers make the point that metaphors are often unconsciously generated. It is for that reason that metaphors are a useful way of investigating people’s conceptions. Since the metaphors are often unconsciously generated they will reflect the person’s underlying feelings and understanding, which they may be unable or unwilling to express consciously.

As the name implies, metaphor analysis is a systematic method of analysing the metaphors that people use to express themselves. It is a means of gaining understanding of a person’s often unconscious motives and reasons for doing something or of their conception of the process involved in doing it. It can reveal the thoughts behind the action. Martin and Lueckenhausen (2005) add that metaphor analysis as a method can be used by the researcher to focus on what individuals say and think about what is happening to them.

The text to be analysed by metaphor analysis may be a body of literature, the response to an interview, or other written material. Written material is used so that it may be conveniently examined a number of times to ensure that all the metaphors are found. Indeed, the search for, and finding of, all the dominant metaphors is of the utmost importance for the following analysis. The material has to be examined closely then examined again and again to ensure that all the metaphors are found. This step is particularly important as some of the metaphors might be obscure and might be missed on the first, or even second, reading.

*Metaphors We Live By*, as written by George Lakoff and Mark Johnson in 1980, is the seminal work on metaphor analysis. Although the authors do not provide a method of analysis, they do show how metaphors can be grouped into metaphorical concepts which are important for any method of analysis of metaphorical terms.

The metaphorical concept is an important feature of the work. It relates the target and source domains of the metaphor in the statement, *target domain is source domain*. Thus, if a person uses the metaphor of a journey to describe his or her research then the concept might be “research is a journey.” In this example, “research” is the target domain and “journey” is the source domain since “research” is the subject of investigation and “journey” is the domain to which it is linked by the metaphor. Part of the metaphor analysis process involves forming metaphors into concepts, which illustrate the relationship between the target domain and the source domain (Lakoff & Johnson, 1980).

The metaphors found do not occur by chance, says Schmitt (2005), but are parts of a limited number of concepts that have the target and source areas in common. The metaphors, when found, should be grouped into their metaphorical concepts. “The formulation of metaphorical concepts requires a creative, synthesizing approach,” notes Schmitt (p. 372).

In discussing the validity of metaphor analysis and the means of obtaining it, Schmitt (2005) suggests that in using metaphor analysis researchers must provide the possibility of testing their accuracy and credibility. The ways in which the work is to be validated should not be merely applied to the actual analysis but should be applied throughout the whole investigation including the data collection and reporting of results. It is important, he says, that the whole process should be documented. To satisfy this requirement I provide a full explanation of the approach taken in this study.

Moser (2000) presents a number of arguments why metaphor analysis should be considered an important research method and why it can provide useful interpretations of a person's thoughts and attitudes. She argues that metaphor analysis offers "a multifaceted research perspective" (p. 4). Metaphor analysis can become either a quantitative or qualitative method by associating metaphors with topics, Moser argues. However, she states that it is qualitative metaphor analysis that is the most important since it brings out the full potential of the method. A person's actions and thoughts may be characterised by the metaphors he/she uses in describing them. The use of qualitative analysis allows those metaphors to be placed in their correct context and related to the topics with which the person associates them (Moser).

Martin and Lueckenhausen (2005) say that metaphor analysis is able to show how the individual feels about something. Further, they go on to say that the individual does not use only a single metaphor but uses a number of different ones to express different ideas and feelings, that "[t]here is a *range* of cross-mapping between abstract thought and concrete objects" (Martin & Lueckenhausen, p. 392, emphasis added). Thus the proper and complete analysis of the material necessitates that the researcher be open to the thoughts and feelings of the speaker or writer (Martin & Lueckenhausen).

From the above discussion, metaphor analysis can be seen as a useful tool with which to investigate the motivations and attitudes of people. The metaphors that people use to express themselves are largely unconscious and indicate a great deal about the person's hidden thoughts and emotions. Thus metaphor analysis is a useful way to investigate the conceptions of research held by doctoral students.

## Methodology

To find the metaphors in the responses I used a method called MIP, the Metaphor Identification procedure, formulated by the Pragglejaz Group (2007). The analysis described by the Pragglejaz Group (2007) provides a prescriptive method of finding the metaphors in a transcript or other written material. As such it provides a way of finding all the metaphors without the risk of the investigator's sensitivity to metaphors, or the lack of it, being an influential factor. The method described is almost mechanical in its application in that each word is checked against a dictionary definition. The dictionary provides the literal meanings of the words. Thus, if the meaning in the material is not identical to the literal definition given in the dictionary it can be taken that it is a metaphor. For the purposes of this paper I used *The Shorter Oxford English Dictionary* (2007) as my reference source.

The Pragglejaz Group (2007) describe five basic steps in their method of finding metaphorical words and phrases. The first step is to read the entire text to gain a general understanding of the context in which the metaphors appear. The next step is to mark out the lexical units within the text. In general 'a lexical unit' is a single word. However, there are some compound words, such as 'power plant' and 'of course' that require analysis as a single unit.

The next step is to take into account the meaning of the lexical unit in the context of the whole. Next there is the need to determine if the lexical unit has a meaning that is more

concrete, relates to a bodily action or is historically older. If this step is true, then one must decide whether the meaning in the text contrasts with the basic meaning from the dictionary and can be understood in comparison with it. If the answer to the above is yes, then the lexical unit is metaphorical. (Pragglejaz Group, 2007, p. 3).

They then work through an example in detail, using an extract from a newspaper article, to show how their method should be undertaken. They show how the text to be examined is broken down into individual words and then each word's contextual and dictionary meanings compared. This results in a table from which a decision can be made as to whether or not the word is used metaphorically. I used the same table form as a working layout for my own work using MIP

The reporting of the results is an important part of the analysis, according to the Group, and should be undertaken with care. It should provide as much detail about the analysis procedures as possible. The report, they say, should include information on the text studied, the lexical units found, the resources used for checking the status of the lexical units and any decisions made along the way (Pragglejaz Group, 2007, p. 13).

I first read all the responses through a number of times to get a feel for the text and the ways in which the respondents described their conceptions. This stage was very tentative but it later helped in describing the contextual meanings of the words in each response. It must be remembered that the most important factor in the investigation is the students' conceptions and that those conceptions can only be derived from the words the students use in describing their conceptions in their responses to the survey. Thus understanding the context of the words used in the responses is of vital importance in the analysis.

Each response was divided up into its constituent words. The words were listed in the order that they appeared in the response to simplify looking back at the response to refresh my memory about the context during a later stage of the examination. In the first few cases every word was examined. However as my experience grew I was able to eliminate conjunctions, the definite and indefinite articles, pronouns and some prepositions since these were found never to occur as metaphors. The words were listed in order and then looked up in a dictionary to find their literal meanings. This part of the examination is very demanding and time consuming, but it is necessary to do it with care and concentration for it will greatly influence the later decision on whether or not the word is used metaphorically.

The next step was to again examine every word and establish its contextual meaning. Care must be taken to place the word in the context of the whole response or the final decision on whether or not the word is used metaphorically may be affected. As part of the decision making process it is necessary to look back at the whole response to establish the context for each word. Although this stage can also become tedious it is enlivened when some of the words almost jump out from the page and announce themselves as metaphors. However, the decision for or against the word being a metaphor must wait until the next stage.

The final step is to again examine the words and decide whether each is a metaphor or not by comparing the basic and contextual meanings. This step must also be done carefully since it will influence the number of metaphors found in the response and influence the later analysis. If any metaphors are missed the later analysis may be skewed and invalid.

## **Results**

There turned out to be five types of metaphors used in the survey responses. The types should not be taken as absolutely clear cut and independent, as most of the responses tended to overlap two or more categories to some degree.

### *Metaphors of Space*

The largest group of metaphors found in the responses related to space. The largest single metaphor that occurred was “field” followed closely by “area.”

Metaphors of space suggest that the students using them see their research as opening up or developing into new areas of knowledge. They refer to their research as being in a particular “field” or “area” which is part of overall knowledge. Other metaphors that appeared in this category included “regions,” “frontiers,” and “byways,” all of which relate to areas and give the impression of openness and somewhere into which to develop the work.

This type of metaphor gives the reader an image of research being an investigation of a space, like a field is an open area of land. Thus there is a feeling of openness and space.

### *Metaphors of Travel*

The largest single metaphor referring to travel was “steps” which occurred multiple times in nine responses. Similar metaphors are “journey,” “path,” and “track.”

Metaphors of travel suggests that the student sees her or his research as a movement, as travelling towards some goal. Other metaphors that appeared in this category included “flow,” “wading,” “embark,” and “sprint” all of which indicate a movement. The destination may not be clearly known but movement in some direction is part of the research.

This type of metaphor gives the reader the idea of exploration, of opening up new areas of research, of heading off into the distance to find new knowledge. It suggests a sense of movement involved in research, that research requires a lot of action to bring it to fruition that nothing is found by sitting still, only by moving into the unknown.

### *Metaphors of Action*

There was a large variety of metaphors for action. These varied from descriptions of research as “constructing” knowledge, from research seen as “struggling,” to research seen as “scratching” for results. All these metaphors refer to actions that might be taken to conduct research.

Similar metaphors that appeared in this category included “working,” “delve,” “reap,” and “combing,” all which refer to some action involve to make the research develop in the desired direction. The metaphors of action give the reader a much more earthy feeling about research. It seems that the person undertaking it has to get their hands dirty and actually work hard at it.

### *Metaphors of the Body*

There were a number of metaphors that related to a human or animal body. There was “body” itself and “corpus.” Also in this category might be “virgin” and “drown.”

This type of metaphor suggests that the student sees his or her research as manipulating a “body” of material as a body of a person or animal might be manipulated. Other metaphors that appeared in this category included “infancy,” “struggling,” and “grasp” all of which refer to some bodily function or action.

This type of metaphor gives the reader the idea of research being constructed in some way like a body, where many different parts come together to achieve some outcome. There is a sense that research is not a simple isolated field but is related across and between



disciplines as one might consider the parts of a human body to be a composite of interrelated parts.

### *Metaphors of Ordeal*

There were a number of metaphors that referred to research as an ordeal. One student twice referred to research as a “marathon” with its intimations of a struggle against the odds and the persistence required to complete the ordeal. Another referred to the “struggle” of research.

Other metaphors that appeared in this category included “crushing,” “drown,” “fighting,” and “safety net” all of which give the impression that the research is not easy and involves suffering to make progress.

The metaphors of ordeal give the reader the impression that the student is struggling with the research, that the research is like a marathon race which tests the staying power of the student to the limits, and that the ordeal of the research is something overpoweringly strong that has to be overcome to achieve the doctorate.

## **Conclusions**

It is plain from the above results that research students show a wide range of conceptions of their work. Their attitudes vary from the more or less positive view of those who see their work as travelling to some destination to the more negative view of those who see it as an ordeal to be suffered. I suggest that this attitude might also be reflected in the student’s approach to his or her work and commitment to completing the doctorate.

It is my intention to add another perspective to the growing literature on conceptions of research, and add to the literature on doctoral students’ conceptions of research. It is important that doctoral students’ conceptions of research be understood, particularly by those who supervise the students. A mis-match between the supervisor’s and the student’s conceptions of research may lead to problems with the supervisor/student relationship and thus to the student having problems with his or her research and/or not completing the Ph.D. (Bills, 2004; Lee, 2008). If the supervisors are aware of their students’ conceptions of research then steps can be taken to reduce the risk of complications arising from a mis-match. Therefore, my results should be of interest to both supervisors and students and may help to raise the level of understanding between supervisors and students. If that understanding can be increased, then the possible problems for the relationship and the student might be avoided.

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### Author Note

Rod Pitcher is a Ph.D. candidate in Education at The Centre for Higher Education, Learning and Teaching at the Australian National University, Canberra, Australia. The focus of his study is the metaphors that researchers use when describing their work. He uses metaphor analysis to arrive at an understanding of the conceptions. He may be contacted at The Centre for Higher Education, Learning and Teaching; Chancelry 10T, Ellery Crescent; The Australian National University; Canberra; ACT 0200 Australia; Phone: +61 2 612 50838; Fax: +61 2 612 54023; Email: RodPitcher@australia.edu

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