INFORMATION-SEEKING BEHAVIOUR OF UNIVERSITY ACADEMICS

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TABLE OF CONTENTS

CONTENTS .............................................................................................................. ii

LIST OF TABLES .................................................................................................... iv

LIST OF FIGURES .................................................................................................. iv

AUTHORSHIP ......................................................................................................... v

ACKNOWLEDGEMENTS ........................................................................................ vi

CHARLES STURT UNIVERSITY ETHICS IN HUMAN RESEARCH COMMITTEE APPROVAL .............................................................................................................. vii

ABSTRACT ............................................................................................................. viii

CHAPTER 1: INTRODUCTION .................................................................................. 1

  AIMS AND OBJECTIVES OF THE STUDY ......................................................... 2
  SIGNIFICANCE OF THE STUDY ........................................................................ 2
  INFORMATION, INFORMATION NEEDS, INFORMATION SEEKING AND
  INFORMATION-SEEKING BEHAVIOUR ................................................................. 4
  PERSONAL CONSTRUCTS .................................................................................. 6
  AFFECT AND PERSONAL CONSTRUCTS ........................................................... 6
  MOTIVATORS/DEMOTIVATORS ........................................................................ 8
  INFORMATION NEEDS OF ACADEMICS FOR THEIR RESEARCH AND
  TEACHING .......................................................................................................... 9
  TECHNOLOGY AND INFORMATION-SEEKING BEHAVIOUR OF ACADEMICS .. 10

CHAPTER 2: INFORMATION NEEDS AND INFORMATION SEEKING .................... 11

  INTRODUCTION .................................................................................................. 11
  MODELING INFORMATION-SEEKING BEHAVIOUR ......................................... 12
    Wilson and models of information-seeking behaviour .................................. 13
    Other models .................................................................................................... 14
  DEFINITION OF TERMS .................................................................................... 15
    Information ........................................................................................................ 15
    Information needs ............................................................................................. 16
    Information behaviour, information seeking, information-seeking behaviour,
      information-searching behaviour, information-use behaviour.................. 18
    Personal constructs ........................................................................................... 19
    Sense-making .................................................................................................... 23
    Treatment of barriers in the literature ............................................................. 24
    Motivation .......................................................................................................... 25
    Treatment of motivation in the library science literature ............................... 27
    Barriers and motivators/demotivators ............................................................ 28
  MODELS OF INFORMATION-SEEKING BEHAVIOUR ....................................... 29
  INFORMATION-SEEKING BEHAVIOUR AND INFORMATION SOURCES .......... 33
    Information-seeking behaviour and libraries ................................................. 35
    INFORMATION NEED OF THE USER .............................................................. 36
  PERSONAL CONSTRUCTS, IMAGE CREATION AND LIBRARIES .................. 39
  THE LIBRARY USER AND TECHNOLOGY ........................................................... 42
    Impact of technology on library services ....................................................... 44
  CONCLUSION ....................................................................................................... 46
CHAPTER 3: METHODOLOGY ........................................................................................................ 48

POSSIBLE RESEARCH APPROACHES .................................................................................. 48
   Positivist (quantitative) approach ...................................................................................... 49
   Interpretivist (qualitative) approach ................................................................................... 49
   Related research perspectives ............................................................................................. 50

THE PROCESS AND THE INSTRUMENTS ........................................................................... 52
   The setting ............................................................................................................................ 52
   In-depth interviews ............................................................................................................. 52
   The pilot study .................................................................................................................... 53
   The interview questions ........................................................................................................ 53
   Interview procedure ............................................................................................................ 54
     Personal memos .................................................................................................................. 55
     Expanding/clarifying notes ................................................................................................. 55

THE SAMPLE ......................................................................................................................... 56
   Selection of sample .............................................................................................................. 56
     Identification of sample ..................................................................................................... 57
     Problems in sample selection ............................................................................................. 58
     Sample description ............................................................................................................. 58

DATA ANALYSIS .................................................................................................................. 60
   Coding and categorising data ............................................................................................... 60

COMPUTER ASSISTED ANALYSIS .................................................................................... 61

PROBLEMS IN CONDUCTING THE RESEARCH ................................................................ 62

CONCLUSION ......................................................................................................................... 62

CHAPTER 4: MOTIVATORS/DEMOTIVATORS INFLUENCING INFORMATION SEEKING BEHAVIOUR: SOURCES .................................................................................. 63

INTRODUCTION ..................................................................................................................... 63

ELECTRONIC ACCESSIBILITY ............................................................................................. 65
   Electronic accessibility: science and business ..................................................................... 67
   Electronic accessibility: social sciences, humanities and education .................................... 71
   Packaging: print versus electronic access ............................................................................ 73
   Electronic accessibility: some concluding points ................................................................. 75

RESOURCE ACCESSIBILITY AS A MOTIVATOR/DEMOTIVATOR ........................................ 77
   Limited library resources .................................................................................................... 77
   Information access and the academic library ...................................................................... 81
   Information access and non-library sources ....................................................................... 83
     Use of personal libraries .................................................................................................... 85
     Use of the invisible college ................................................................................................ 89
     Attendance at conferences and meetings .......................................................................... 90
     Use of electronic communication ..................................................................................... 93
     Use of personal communication ....................................................................................... 94

TIME AND SOURCE ............................................................................................................. 95

CONCLUSION ......................................................................................................................... 98

CHAPTER 5: MOTIVATORS/DEMOTIVATORS INFLUENCING INFORMATION SEEKING BEHAVIOUR: IMAGES OF LIBRARIANS AND LIBRARIES .................................................. 103

INTRODUCTION ..................................................................................................................... 103

CONSTRUCTION OF A LIBRARY IMAGE ........................................................................... 106
   Library/librarian images ...................................................................................................... 108
   Technology and library image transformation ................................................................... 110

   Librarian images held by participants ............................................................................... 112
     Librarian as keeper of the collection ............................................................................... 112
     Librarian as creator of independent user ......................................................................... 113
     Librarian as "knowledge navigator" ............................................................................... 114
     Librarian as information technician ............................................................................... 116
     Librarian as document deliverer ...................................................................................... 117
     Librarian as educator of academics ............................................................................... 118
     Librarian as educator of students .................................................................................... 119
     Librarian as interactive partner - filterers and evaluators ............................................. 120
     Librarian as information provider .................................................................................... 121
I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or other institution of higher learning, except where due acknowledgment is made in the acknowledgments.

Signature  John Mills  Date  4/9/02
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Lastly, I am indebted to my participants who made this study possible.
Mr J Mills
School of Information Studies
Wagga Campus

25 September 1998

Dear Mr Mills

The Ethics in Human Research Committee has approved your proposal "Information seeking behaviour of university academics" for the period October 1998 to December 2000.

The protocol number issued with respect to this project is 98/101.

You must notify the Committee immediately should your research differ in any way from that proposed.

You are also required to complete the attached Report form and return it on completion of your research or by 31 October 1999 if your research has not been completed by that date.

Please don't hesitate to contact Mrs Kaye Price on telephone (02) 6338 4200 if you have any enquiries about this matter.

Yours sincerely

Ross Chambers
Presiding Officer
Ethics in Human Research Committee
ABSTRACT

Major technological changes, over the past two decades but especially since the use of the World Wide Web and Internet became widespread have presented libraries with new challenges. In the academic environment libraries have responded by reassessing services and priorities. Some changes which have occurred include reader education classes on use of the Internet and World Wide Web which have become widespread and academic libraries have become instrumental in filtering online information and providing Web guides.

This thesis investigates the information-seeking behaviour of university academics in this ‘new’ environment using a constructivist perspective. Academics employed at a medium-sized university in Wagga Wagga, a rural town with a population of 60,000 people in New South Wales, Australia were interviewed. Two key aims of the research were

- to explore the information-seeking behaviour of university academics in a changing technological environment, and

- to identify the role motivators and demotivators (which energise/de-energise information-seeking behaviour) played in influencing this behaviour.

Technology was found to be an underlying and persuasive force, which influenced source selection, image creation and affective response.

It was also found that the information-seeking behaviour of academics was strongly influenced by experience with sources of information such as colleagues, databases, libraries and the World Wide Web. Each experience with a source had the potential to create new personal constructs about that source. The affective realm, images of libraries and librarians and source characteristics were all-important influences in the formation of personal constructs. In a constant cycle, personal constructs were formed and re-formed and resulted in motivators/demotivators (which energise/de-energise information-seeking behaviour) attached to use of sources. Strongly influencing source
selection in information seeking were the interplay of motivators/demotivators attached to sources.

If personal constructs are examined in the context of motivating and demotivating influences information professionals may be closer to understanding why users behave the way they do and be in a position to improve the service provided by libraries to their users.
human use of information and information systems is qualitative, not monolithic...Information is not seen as something that describes a given reality in an absolute and potentially accurate way, which can’t be transmitted from source to receiver through channels, which can be counted by external standards and pigeon-holed for all time. Rather, information is constructed. The act of constructing and the act of using that which is constructed, is a qualitative act. It varies in kinds (Dervin 1992, p. 81).

This thesis investigates the information-seeking behaviour of academics at a medium-sized university in Wagga Wagga, a rural town with a population of 60,000 people in New South Wales, Australia. A constructivist perspective is taken in the study which relates the experience of academics in seeking information to their research and teaching. Within this perspective, personal constructs were formed and re-formed and result in motivators/demotivators which energise/de-energise information-seeking behaviour. The ways in which these motivators/demotivators are linked, firstly, to sources (e.g., colleagues, libraries, personal libraries, databases), secondly, to images of librarians and libraries and, thirdly, to affect (that is the emotions, feelings, attitudes, personalities we have) are discussed. Characteristics of sources as perceived and/or experienced by the academic are examined in terms of what motivates or demotivates information-seeking behaviour. Similarly images of library and librarian are considered in terms of their role in motivating/demotivating information-seeking behaviour. Affect, discussed below and in later chapters, plays a central role in influencing source selection and images (mental representations) held of libraries and librarians. Through concepts such as self-esteem and attitudes towards technology, geographical and intellectual isolation, information overload and browsing, affect can be seen to play a pivotal role in shaping the paths that information seeking will take. The part played by technology as an underlying and persuasive force which influences source selection, image creation and affective response, and, in turn, motivators/demotivators is considered throughout.
this thesis. For information-seeking behaviour to commence an information need has to be activated and an information question identified.

**Aims and objectives of the study**

The research had two key aims:

- to explore the information-seeking behaviour of university academics in a changing technological environment, and
- to identify the role motivators and demotivators played in influencing this behaviour.

The objectives of the study are:

1. to identify the information needs of academics at Charles Sturt University.
2. to explore the role of personal constructs in motivating information-seeking behaviour.
3. to identify the associated motivators/demotivators that academics face in their information seeking.
4. to identify the role of affect in motivating information-seeking behaviour.
5. to explore how users’ choices of information sources and services may be influenced by motivators/demotivators associated with their personal constructs.
6. to identify the personal constructs of academics at Charles Sturt University, in relation to libraries.
7. to identify what new patterns of information seeking are emerging given the availability of new forms of technological access to information sources and services.
8. to identify if changes have occurred in the part played by the invisible college.
9. to investigate what can be done to overcome the demotivators faced by academics and to assist them in their information seeking.

**Significance of the study**

Past experience is very much a determinant of future action; an individual constructs and reconstructs events, happenings, feelings, and attitudes. An individual cannot interpret his experiences and observations, he cannot define the situation in which he

Academics studied in this research were strongly influenced by their past experience in determining what sources, including institutions and people, they were going to use to seek information for their research and teaching. Linked to these sources were particular personal constructs, encompassing motivators/demotivators that affected their use. If the factors that motivate and demotivate the choice and use of information sources are better understood, information professionals may be in a position to target more effectively those areas of information service provision that encourage, interrupt, inhibit or prevent the successful satisfaction of information need or completion of the information seeking.

The rapid rate of technological change over the past ten years has created a difficult situation for many academics in seeking information for their research and teaching. As the Internet has increasingly infiltrated every aspect of their academic lives, and institutions such as libraries have become much more technologically focused, new ways of seeking information have had to be learnt. This has placed a number of pressures on academics to learn or to be left behind. In many cases their existing personal constructs about the information-seeking process have been challenged and reformulated. This thesis has been written in a climate of change, where the role of institutions, such as libraries, the Internet and the invisible college in the daily lives of academics has become less certain. It is not surprising, therefore, that technology has been seen to play a significant role in influencing an academic's personal constructs about the sources and institutions and people with whom they deal. The role of 'affect' has also been found to be significant in this somewhat confronting period of moving from a relatively established way of doing things to one where new ways are being thrust forward, none of which has been identified as a clear pathway to follow.

The public image of a service-oriented institution and its services is constructed over a period of time. This image influences the ways in which it is used, for instance whether or not it will be used to resolve a problem, or to seek information. An individual's personal constructs in relation to service-oriented institutions such as libraries, or an image of libraries in an individual's mind, may influence use. Additionally the non-use of libraries may or may not be linked to previous use. It matters little whether the
perceptions regarding such institutions are true or not, and whether they represent reality or not. It is perception which influences action. Personal constructs are built up over time and are in a state of constant change as new experiences reconstruct existing constructs. These are influenced by many things, including childhood and adult experiences, beliefs, attitudes and feelings. Understanding more about how these constructs are formed in relation to the sources of information that an academic may use in their daily information seeking for research and teaching may result in recommendations to improve the interaction.

In summary, within the major focus of the information-seeking behaviour of academics this researcher is interested in how academics go about finding information for research and teaching and why they make certain choices as to which source to use or not to use. By knowing the reasons behind their choices of sources we are in a better position to investigate the influences which may impede information seeking, or influence positively information-seeking behaviour of academics, or cause a reformulation of an original information need. Not all academics are library users and there may be many reasons why their information seeking does not involve the use of a library.

Information, information needs, information seeking and information-seeking behaviour

These key terms represent the central subject theme of this research and are discussed in some detail in Chapter 2. Definitional difficulties surround the terms information and information needs. In this thesis a broad, all-encompassing definition of information is adopted, where information is everything the individual considers to be information. Source (of information) is considered in the broad sense of the word. It can embrace things such as the invisible college (interaction with colleagues), databases, journals and books, World Wide Web, personal libraries, information professionals and personal knowledge.

Information need, is taken from Westbrook (1997, p. 318) who considers it to embrace 'all experiences of an individual associated with the search for information'. Many information needs, as originally formulated, go through a period of reformulation. Reformulation of information need may occur many times until the information need is met. As Chen and Hernon (1982, p. xiii) suggest, the consumer of information 'should
be viewed…as an individual, with an information need, who moves fluidly through a variety of information providers until, his or her need is met, or he or she gives up trying'. There could also be a protracted period during which reformulation or reconstruction takes place. The reasons for this reconstruction may be numerous and relate to motivators and demotivators as discussed in Chapter 2 of this thesis, and later in this chapter, by Brown (1991), or may be a response to the information gained to the initial or subsequent formulations of need.

There is also some debate as to whether 'information need' is the correct term to describe the reason for an individual’s information-seeking behaviour or whether an individual really has a 'need' for information. 'Need for information' tends not to allow for consideration of the fact that many searches for information are exploratory rather than purposive and that many a need for information is only realised when something prods the information seeker's sub-conscious. T. D. Wilson (1981, p. 8) categorises commonly identified human needs as physiological, affective and cognitive. These cannot be considered in isolation from each other as they are interrelated and one may give rise to another: affective needs, for example, may give rise to cognitive needs.

Defining information seeking and information-seeking behaviour poses more problems. Much information seeking by academics is purposive, in the sense that an outcome or solution to an information need is expected, sought or desired or, in Kelly's (1963) terms, predicted. However some information seeking is exploratory in that no particular outcome is expected or predicted but some clarification is sought. Some information acquisition is incidental in that information has been accidentally discovered rather than actively sought, although it has met some requirement. In summary information seeking:

is purposive and adaptive; information is in part acquired because it is deliberately sought… It is also found where it is not specifically sought, as an accidental concomitant of routine activities with other purposes or as pure accident (P. Wilson 1977, p. 36).

Indeed an individual with an information need, who seeks information, may find that need satisfied in addition to satisfying other information needs in the process. Individuals may even engage in purposive information-seeking behaviour in their hope or expectation that other information needs will be satisfied in the process. However,
even though much information seeking is purposive or exploratory, and information is acquired incidentally, the process usually does not proceed in a linear manner. An individual with an information need may go through an information-seeking process as discussed by Kuhlthau (1991), with the information need being reconstructed, or with the need evolving or in a continuous state of reformulation as interaction with sources takes place over a period of time. The concept of reconstruction is important to the current research and, as mentioned above, has also been considered by Brown (1991, p.13) who refers to search demotivation occurring when barriers to information-seeking behaviour affect the satisfaction of need.

Information seeking and information-seeking behaviour are not considered separately in this thesis. They are defined as all of the activities and experiences in which academics may expect to involve themselves in searching for information.

Personal constructs

'Personal constructs', discussed more fully in Chapter 2, is a term used by the psychologist George Kelly (1963) to describe the ways in which humans make sense of their worlds. A user's personal constructs about a source, use of technology or an institution give rise to motivating/demotivating factors in relation to the use of that source. The interaction of academics with sources of information influences how and whether, a source will be used in the future. Interaction with institutions such as libraries and with information professionals also creates personal constructs, which influence future use.

Affect and personal constructs

The 'affective' realm covers all of those terms that refer to feelings and includes emotions and beliefs. Julien (1999c, p.588) suggests that 'affective' generally describes the concepts of affect, preferences, evaluations, moods, and emotions where:

'Preferences' refer to subjective reactions, and are described on a scale of 'unpleasant' to 'pleasant'. 'Evaluations' are straightforward reactions to other people, material objects, or experiences. 'Moods' are less specific, and not directed towards specific external persons or objects. 'Emotion' is a concept that includes the broad range of affects, and includes all the fine gradations of feeling that humans identify (Fiske & Taylor 1991 cited in Julien 1999c, p. 588).
This affective response of individuals to the world around them, to sources and to image creation, is determined by the personal constructs of the individuals or to commonly held images, for example images of librarians. Affect also influences personal constructs and is seen to be a major driving force in information seeking, and underlies the formation of personal constructs. Embedded in these personal constructs which have been created by affective responses lie motivators and demotivators. The affective response to sources, technology, institutions such as libraries and librarians influences the creation of motivators and demotivators. Affect therefore influences choice of source, use of technology, creation of image.

Over time an individual constructs a personal view, or image, of sources used to find information and of institutions such as libraries and librarians. The role of affect in this construction is also important. Nahl and Tenopir (1996) see that:

> the affective domain pulls together into one powerful category the entire motivational and emotional involvement of searchers. Within information science, affect has been defined as ‘the continuous motivational energy provided by one’s intent, goal, purpose, use, as well as the emotional dynamic features that determine the quality of the search process, e.g., perseverance...paying attention to detail, frustration, hope, disappointment, excitement, disbelief, etc’ (p. 277).

Affect exists internally, influencing personal constructs which form the basis upon which people look at the world. It is interaction with the world that can change and reformulate these constructs. Affect influences the constructs of source and images. It is the coming together of the source, image and affect which results in motivation or demotivation in relation to information seeking and determines the strategies and form information-seeking behaviour will take. Individuals have their own sets of personal constructs/images, many of which are in a constant state of change and reformulation as they are influenced by new experiences.

This thesis links affect and personal construct theory in relation to motivators/demotivators in its examination of the information-seeking behaviour of academics.
Motivators/demotivators

The terms demotivator is preferred to the word ‘barrier’ in this thesis, because it represents a more realistic picture of the continuous, dynamic interplay of both positive and negative influences that affect information-seeking behaviour than does use of the term barrier, which appears to be the favoured term in the literature. During the period of data collection the term barrier was used in interviewing participants. During the data analysis phase it became obvious that the terms motivators/demotivators more accurately represented the experience of academics in their information-seeking behaviour. The word, barrier, does not encompass the positive influences on information seeking which are equally important.

The *Australian Concise Oxford Dictionary of Current English* (1997, p. 103) definition of ‘barrier’ suggests obstacle, anything that prevents progress or success. ‘Barrier’ implies prevention of the initiation of information-seeking behaviour, rather than the occurrence of impediments to that behaviour. In practice, the existence of so-called barriers does not mean that information seeking will not take place. People may seek information with the full knowledge of the existence of the so-called barriers. What were once barriers may cease to be perceived as barriers as they are incorporated into experience and become just part of the normal information-seeking process. Moreover, during an information-seeking activity, the barriers may cease to exist, or not be as strong, for a variety of reasons; for example, access to a database is found to be easier than expected. The use of the term ‘to motivate’, on the other hand, relates to causing someone to act in a particular way (*Australian Concise Oxford Dictionary of Current English* 1997, p. 872). It is a term used widely in psychological and management literature. One psychological definition of ‘motivation’ refers to it as ‘an internal process that pushes or pulls the individual, and the push or pull relates to some external event’ (Ferguson 2000, p. 1). Management literature often refers to motivation in relation to task performance where ‘people are motivated to behave in a certain way because they wish to fulfil a need or want’ and ‘what motivates one person may demotivate another’ (Samuelson 1990, p. 147). Spitzer (1995, p. 39), author of *SuperMotivation*, defines motivator as ‘any aspect of work that arouses positive/energizing emotions’ and ‘a demotivator as any aspect of work that arouses negative emotions, such as boredom, fear, anger, and resentment’. The term demotivator is used freely in management literature and is often not as clearly defined. Other
mentions of its use can be found in a variety of discipline areas usually concerned with education (e.g. Gorham and Christophel 1992, O'Neill, Baxter & Morris 1999).

This research focuses on what causes academics to behave in certain ways, as well as what prevents them behaving in certain ways or prevents them finding information. The use of the terms motivators and demotivators allows information-seeking behaviour to be considered, more appropriately, as a dynamic continuous process which may change every step of the way as motivators or demotivators, sometimes alternatively, alter the direction of the process or encourage it to continue in the same direction. These motivating forces are internally constructed, but are internally and externally generated.

In the context of this study the use of the term demotivator implies the non-commencement, cessation or interruption of information seeking because of the presence of factors that stop, impede, deter or defer information-seeking behaviour. Use of the term motivator describes the opposite: influences that encourage information-seeking behaviour to take place and continue. Demotivators can lead to search demotivation in the information-seeking process and 'can arise from multiple sources, and may not be recognized as barriers to the seeking behavior, rather, as boundaries of that behavior' (Brown 1991, p. 13). Once an information need is identified and source selection begins to take place, demotivating or motivating factors begin to influence the direction that information seeking will take. An examination of motivating/demotivating factors can provide raw data as to how positive and negative 'frames of reference' and 'personal constructs' (described below) can be formed.

Information needs of academics for their research and teaching

Of special interest are the major motivators/demotivators influencing information gathering or information-seeking behaviour of academics. These motivators or demotivators often have their origin in what is called the 'affective realm'. The literature suggests that many information needs are not met and/or not articulated because of problems that lie in the affective realm and this is an area of special importance in this study, as discussed above.
Technology and information-seeking behaviour of academics

The second focus concentrates on the extent to which academics are using technology to gain access to information on the World Wide Web or through the World Wide Web to identify resources and to communicate with librarians and others from their homes and offices rather than using more traditional methods of information seeking. Examples of more traditional methods are making a personal visit or telephone call to an organisation such as a library or government department.

It was expected that the dramatic increase in the use of technology in information seeking by academics over the past twenty years would be a strong influence on the use of other sources. It was also expected that technology would play a major role in the creation of the image (or personal constructs) of libraries and information professionals and that it would be one of the most important factors influencing and shaping information-seeking behaviour. The role technology plays in shaping information-seeking behaviour is discussed in almost every section of this thesis. For this reason a single chapter is not devoted to its impact.

Chapter 2 provides an overview of the literature relevant to this study and further discusses key terms used in this thesis. Chapter 3 outlines the method used for data collection and analysis. Chapters 4, 5 and 6 focus upon the results of the research and Chapter 7, the conclusion, examines and discusses the major findings and makes recommendations for further research.
CHAPITR 2

INFORMATION NEEDS AND INFORMATION SEEKING

significant human motivation comes not from objective realities but from our subjective interpretation of them. What we do now is often controlled by what we think was responsible for our past successes and failures, by what we believe is possible for us to do, and by what we anticipate the outcome of the action will be (Zimbardo 1992, p. 434).

Introduction

There are numerous studies of the use of academic libraries, of the information-seeking behaviour of academics in various disciplines, and analyses of the information needs of academics. Few of these studies define the meaning of the terms they use in the context of their study. In these studies information seeking can mean several things: the physical seeking of information by academics in a library or non library setting; the use of information once it is found; or the choice of information sources linked to membership of a specific academic discipline. The picture these studies paint of information-seeking behaviour is illuminating, repetitive and wide-ranging. Academics working in different disciplines have different information needs, approaches to information seeking, and emphases on sources (Westbrook 1997). The invisible college is often the preferred source choice for most academics who often seem to rate conference and meeting attendance and interaction with colleagues more highly than library use. These sources are discussed more fully in later chapters.

In her ground-breaking work of the 1970s and 1980s Dervin (1973; 1977; 1986; 1992), writing in the communications area, focused attention on the user rather than on the system and identified that users, when they were seeking information, were attempting to close a gap in their knowledge. To close these gaps, or to overcome blocks or barriers, the user, in the context of what Dervin calls a situation, seeks ‘helps’ or ‘uses’. Dervin (1992) sees users as sense making within their own frames of reference; they are building up a personal point of view; they are making sense of their own experiences;
the experience of each user is different. According to Dervin this information-seeking process is not purely system driven, but is affected by cognitive and affective characteristics of the user. Users are operating in a cognitive context, which is influenced by the affective realm.

Much research in the area has been influenced by Dervin's sense-making approach to understanding human information-seeking behaviour. It has been suggested by Dervin and others, including Harris and Dewdney (1994), that substituting the word 'help' for 'information' so that individuals are 'help seeking' rather than 'information seeking' may serve to highlight a user-centred approach to the helping aspect of information seeking.

Such an approach also leads to an extensive body of useful literature in other disciplines (Harris and Dewdney 1994, p. 11). The social psychologist, DePaulo, for instance, refers to five basic steps in the help-seeking process:

- help-seeking is triggered by the help-seeker's recognition of his or her need for help...The help-seeker decides whether actually to seek help...If the help-seeker decides to seek help, he or she selects an appropriate source of help...The help-seeker initiates and executes the help request...The help-seeker reacts to the helper's response (DePaulo 1982, p.267-268).

Other attempts to model the help-seeking or information-seeking process include those by Wilson (1981), Wilson and Walsh (1996), Krikelas (1983) and Dervin (1992). Indeed considerable attention in the literature on information-seeking behaviour has been given to discussion of models of information-seeking behaviour.

**Modeling information-seeking behaviour**

Models presented range from the general, all-encompassing to the more specific which concentrate upon aspects of the information-seeking process. As T. D. Wilson (1998, p. 1) says: 'Several theoretical models deal either with information behaviour in general or with specific aspects, ranging from actions involved in information seeking in general, to interactions with information retrieval systems'.
Wilson and models of information-seeking behaviour

Since publication of an early key paper on information needs, T.D. Wilson (1981), a major contributor to the literature of the area, has devoted considerable attention to refinement of his model on information-seeking behaviour. In what they label 'a revised model of information behaviour' Wilson and Walsh (1996, p. 4) incorporate Ellis' (1989) work on information seeking. They propose a model which takes into account the context of information need, 'barriers that may exist to either engaging in information-seeking behaviour or in completing a search for information successfully', and what could be called stages in information-seeking behaviour. In this model whether or not an individual operationalises an information need is determined by some motivating force (an activating mechanism) influenced by the existence or non-existence of barriers/intervening variables, and the type of information-seeking behaviour or acquisition. Behaviours are identified as passive attention, passive search, active search and ongoing search.

Passive attention could be more accurately called incidental information acquisition, as coined by P. Wilson (1977, p. 36) whereby information is acquired in the process of some activity such as watching television. Such acquisition may stimulate an active search. For example, while watching the weather on television someone finds out that the El Nino weather phenomenon is moving into positive territory, something they wanted to know even though the reason they tuned into the weather was to find out the temperature forecast for the following day. Passive searches are explained by Wilson and Walsh (1996, p. 23) as 'those occasions when one type of search (or other behaviour) results in the acquisition of information that happens to be relevant to the individual'. It is debatable as to whether passive search can be separated from passive attention as the result of both is really incidental information acquisition. Active search refers to the type of search where an individual actively seeks out information. Wilson and Walsh's final category, ongoing search, is closely related to active search and is 'where active searching has already established the basic framework of ideas, beliefs, values...but where occasional continuing searching is carried out to update or expand one's framework' (p. 23).
The final stage in the model is that of information processing and use. Wilson and Walsh (1996) suggest that, while a situation may demand 'information to fill cognitive gaps, to support values and beliefs, or to influence affective states', there 'is no guarantee that the information will be “processed” that is, incorporated into the users’ framework of knowledge, beliefs or values) or used (that is, lead to changes in behaviour, values or beliefs)' (p. 30).

Other models

Other models of information-seeking behaviour have been presented, one of the most widely cited being that of Krikelas. In this model information-seeking behaviour is defined as ‘any activity of an individual that is undertaken to identify a message that satisfies a perceived need’, while information ‘is viewed as any stimulus that reduces uncertainty’ and need is ‘a recognition of the existence of this uncertainty’ (Krikelas 1983, p. 6). Krikelas distinguishes between information-seeking behaviour or activities associated with satisfying immediate needs, and information-gathering behaviour or activities associated with deferred needs ‘in which stimuli are accepted and held in storage to be recalled on demand’ (p. 9). Information-gathering activities may have a purpose such as storage of information for future use or they may be completely lacking in direction. The part played by an individual in making sense of information, of constructing it and using this ‘experience’ in information-seeking behaviour is considered important by Krikelas, as it is by Dervin (1992), Kuhlthau (1991) and T.D. Wilson (1981). All four see information as being personally generated or obtained by using an outside source such as an individual or written communication. Harris and Dewdney (1994, p. 16) suggest ‘the Krikelas model also recognizes the distinction between interpersonal and recorded sources of information’.

Krikelas, like Dervin, Kuhlthau and T. D. Wilson, rejects what is referred to as the transmission model of communication, as exemplified by Shannon and Weaver, where the focus is on source-message-channel-receiver. Instead he focuses upon models where people play an essential part in using information to make sense of their world, rather than objectively and systematically choosing the appropriate source-message-channel-receiver.
In their six principles of information-seeking behaviour of ordinary people, Harris and Dewdney (1994, p. 20-27) agree with Krikelas and focus on the pivotal role of the information seeker or the help seeker. They suggest that

1. Information needs arise from the help seeker’s situation
2. The decision to seek help or not to seek help is affected by many factors
3. People tend to seek information that is most accessible
4. People tend to first seek help or information from interpersonal sources, especially from people like themselves
5. Information seekers expect emotional support
6. People follow habitual patterns in seeking information

Building upon Kuhlthau’s (1991) ideas of forming meaning from information, Kelly’s (1963) personal constructs, and Dervin’s (1992) sense making, Westbrook (1993, p.543) says:

The interpretation and assimilation of information or knowledge is so influenced by the user involved that it is necessary to recognize the importance of such issues as the cultural adaptability of the information and how well it fits into the contextual and cognitive structures of the user...Conceptualizing the information-to-knowledge continuum as it is internalized by users rather than as objective product destined for the passive recipient is critical to user-needs research.

Definition of terms

Discussions about information seeking include the need to define terms such as information, information needs, information behaviour, information seeking, information-seeking behaviour, information-use behaviour, personal constructs, barriers, motivators/demotivators and affect. Among the most difficult terms to define is information. A definition for information was provided in Chapter 1 and is discussed again here because the issues are so important that further exploration is necessary.

Information

Information is not easily defined, it means different things to different people. The following quote from the report Australia as an Information Society (1991, cited in Williamson (1995, p. 14)) illustrates this:
Information can equally legitimately be seen as a commodity, a resource, a cultural artefact, a social institution, a cognitive process, a political tool, an epistemological medium, an expression of unconscious artefacts or numerous other entities or processes.

Information is conceptualised by Dervin (1992, p. 63) as sense created at a specific moment in time-space by one or more humans, which does not exist apart from human activity. Individuals, according to Dervin, are trying to make sense of their world and, as they move through their experiences, they are dealing with a situation, a gap and a bridge to the gap using 'helps' or 'uses'. Dervin's sense-making concept is discussed in greater detail below.

Harris and Dewdney (1994, p. 29) suggest there does not appear to be a consensus on the meaning of the word 'information':

a major problem in LIS research has been lack of consensus on a definition of “information,” that is, a failure to agree on what is meant by the pivotal concept in the field and the one on which most other conceptual developments depend, including those of information- and help-seeking.

Buckland (1991) talks about information in terms of a continuum from data, information to knowledge. Krikelas (1983, p. 6) views information as ‘any stimulus that reduces uncertainty’ although information would not appear to reduce uncertainty in all situations and at times ‘knowing’ would increase it. As reported in Chapter 1 a broad, all-encompassing definition, where information is everything the individual considers is information, has been adopted for this thesis. In the context of this research it includes whatever source is considered to assist academics in their information seeking.

When information is combined with words such as ‘needs’ or ‘seeking’ other definitional problems arise; these are explored in more detail below.

Information needs

The 'gap between the user's knowledge about the problem or topic and what the user needs to know to solve the problem is the information need' (Belkin, Brooks & Oddy 1982, cited in Kuhlthau 1991, p. 362). As Belkin, Brooks & Oddy also say, in the
context of questions put to an information retrieval system, not all information needs are able to be specified by the user, and therefore, are not able to be answered by an information retrieval system. In many cases the fact that users' realisations that they have some gaps in their state of knowledge leads to Belkin's idea of a "a recognized anomalous state of knowledge (ASK)" which eventually culminates in a question put to the information retrieval system. Often there exists an incongruity between the question as stated and the fulfilment of the need underlying the text, at which point use of an intermediary would be appropriate. Although information need is often discussed in the context of an information retrieval system, such as a library catalogue or a records management system, and a user seeking information from the system, information seeking is more appropriately considered in the wider context of a situation where a user has a need for which information is required.

The experience of an information need can be linked with a motive to engage in information-seeking behaviour, and 'when a motive is activated, a belief-value matrix within the individual is called on' (Burnkrant 1976, cited in Wilson and Walsh 1996, p. 6). This matrix 'is believed to contain images of objects that past experience has proved to be relevant for the satisfaction of the aroused need...'. Some objects will have different values associated with them according to the believed level of success they will have in satisfying the person's need' (Burnkrant 1976, cited in Wilson and Walsh 1996, p. 6).

Dervin (1992, p. 66) does not talk about information needs but rather individuals who, in using information and information systems, are responsive to situational conditions as defined by each individual, with the individual seeking to define and attempting to bridge discontinuities or gaps.

Wilson and Walsh (1996, p. 5) highlight some real problems in term definition in their discussion of information need when they suggest that:

At the root of the problem of information-seeking behaviour is the concept of information need, which has proved intractable for the reason...need is a subjective experience which occurs only in the mind of the person in need and, consequently, is not directly accessible to the observer. The experience of need can only be discovered by deduction from behaviour or through the reports of the person in need.
Westbrook (1997, p. 318) prefers to use the term 'user needs' rather than 'information needs' and says that it 'embraces all experiences of an individual associated with the search for information'.

In theory an information need consciously expressed may represent the culmination of a series of information needs, perhaps more appropriately called sub information needs, that eventually give rise to an information need.

Information behaviour, information seeking, information-seeking behaviour, information-searching behaviour, information-use behaviour

There are some definitional concerns regarding the meaning, use and inter-relationship of information behaviour, information seeking, information-seeking behaviour and information-use behaviour. The terms information seeking and information needs are closely linked in the literature, with formulation of information need the first step in the process towards information seeking. Once an information need is activated, the information-seeking process can commence. Generally speaking information seeking can be thought of as a physical and cognitive process influenced by the affective realm. In a simple sense the use of information seeking and all the other related terms can be considered as involving progressively increasing specificity. T. D. Wilson (2000, pp. 49-50) outlines his definition of key terms in a recent article. According to Wilson, information behaviour covers 'the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use'. Information-seeking behaviour is directed towards purposive information seeking, using manual information systems (such as a newspaper or a library) or computer-based systems (such as the World Wide Web). Interacting with human systems such as friends, colleagues, relatives is also included in this definition. Information-searching behaviour is 'the 'micro-level' of behaviour and information-use behaviour consists of 'the physical and mental acts involved in incorporating the information found into the person's existing knowledge base'.

A debate on the JESSE listserv in 1999 on use of these terms illustrated the lack of agreement. The most vociferous contributors to the listserv debate on the attempt to reach some consensus on use of the terminology were T.D. Wilson and Marcia Bates. The terms were first raised in Wilson's landmark 1981 paper and discussed in a later
paper (2000), as outlined above. The debate was generated by a call for input into preparation of a new paper, on ‘human information behavior’, for publication in a then forthcoming issue of Annual Review of Information Science and Technology, by Pettigrew, Fidel & Bruce (in press). Bates (1999a, 1999b) for example, objected to use of the term information behaviour because ‘information’ doesn’t behave. She preferred information-seeking behaviour or information-related behaviour as umbrella terms. Bates also differed from T. D. Wilson (1999) in preferring to include passive and active (or purposive) information acquisition under the term information-seeking behaviour. Another debate contributor, Heidi Julien (1999b), preferred T. D. Wilson’s definitions, and especially information behaviour and the hierarchical capacity it allows to searching, within seeking and ‘both of those, as well as “information use behavior” within “information behavior”’. This researcher prefers use of the Bates’ definition of information-seeking behaviour because it includes both passive and active acquisition and can incorporate browsing and encountering information. For this thesis information-seeking behaviour (which is sometimes just referred to as information seeking) is an umbrella term embracing information seeking and information-seeking behaviour. It typically includes not only actual accounts of information seeking for a purpose, but also incidental information seeking. Important to this research about information-seeking behaviour are Kelly’s (1963) personal construct theory and Dervin’s sense making theory (Dervin & Nilan 1986; Dervin 1992; 1999).

Personal constructs

According to a psychologist, Kelly (1963), individuals construct meaning from information as they develop their view of the world. When new information is received, this worldview can be reconstructed.

A person is not necessarily articulate about the constructions he places upon his world. Some of his constructions are not symbolized by words; he can express them only in pantomime...in studying the psychology of man the philosopher, we must take into account his subverbal patterns of representation and construction (Kelly 1963, p. 16).

to understand constructs we have to concretize them...to make sense out of concrete events we thread them through with constructs, and to make
sense out of the constructs we must point them at events. Here we have a full cycle of sense-making... (Kelly 1963, p. 121-122).

Kelly believed that humans look at their world through transparent patterns or templates, which he called constructs. These constructs are ways of construing the world, with the human being seeking to improve personal constructs 'by increasing his repertory, by altering them to provide better fits, and by subsuming them with superordinate constructs or systems' (Kelly 1963, p. 9). Constructs can be tested in terms of their predictive efficiency:

Constructs are used for predictions of things to come, and the world keeps rolling along and revealing these predictions to be either correct or misleading. This fact provides the basis for the revision of constructs and, eventually, of whole construction systems... new things keep happening and our predictions keep turning out in expected or unexpected ways. Each day's experience calls for the consolidation of some aspects of our outlook, revision of some, and outright abandonment of others (Kelly 1963, p. 14).

Reconstructions of personal constructs may, or may not, take place. By considering secondary socialisation, the concept can be expanded. In secondary socialisation, as distinguished from primary socialisation, individuals take on what Berger and Luckmann called the 'generalised other', which is generated from the roles and attitudes of concrete significant others.

Its formation within consciousness means that the individual now identifies not only with concrete others but with a generality of others, that is, with a society... But our constructs are not just creations based upon our experience of others but on our interaction with society. Society, identity and reality are subjectively crystallized in the same process of internalization (Berger and Luckmann 1967, p. 153).

Rather than accept Berger and Luckmann's view of reality as socially constructed, this author tends towards Kelly's view of the formulation of personal constructs as being primarily responsible for the construction of reality. While experience and interaction in society indubitably influences the formation and changing of personal constructs, the reality is finally created by the individual; it is an individual's interpretation of social reality that is real to the individual, even if this reality has been socially constructed and accepted as the norm.
The fact that certain constructs, for example, are generally attributable to libraries allows some consensus, some predication of their function. For example a social construct may be: 'libraries and other information delivery systems are mandated to collect information, store it so it can be retrieved, retrieve it when necessary, and disseminate it as needed' (Dervin 1977, p. 18).

This could be said to be a socially constructed reality. While it is this author's view that this kind of social construction informs personal meaning in a continuous cycle of reconstructing 'new information' or reaffirming 'old information'; the key to understanding information seeking lies in personal rather than social constructs. Personal construct formation is emphasised because the ultimate responsibility and reality for the creation of reality is vested in the individual; individuals are the final arbiters of how reality is constructed, what is accepted and reconstructed or newly constructed and what is not. It is individual experiences with libraries, along with community perceptions, which influence individual (therefore personal) constructs relating to libraries. It could be said that it is library staff who must take primary responsibility for the public image of the library, who most influences personal constructs of users about their services.

Like Kelly (1963), Dervin is also interested in the construction of image out of experience by an individual. According to Dervin (1977, p. 29):

> The assessment of library activities solely within the context of an information model results in assessments which focus on the collection, storage, retrieval, and dissemination [of information.] ...assessment ...within the context of a communication model results in assessments focused on how libraries can help people inform themselves, create their own orders, and establish their own understandings...there is little danger of reification because the research is centered on the entity - the user or potential user, who gives the library its real reason for being.

These views, where individuals are seen as trying to make sense of their world as they seek information from a library or elsewhere, are further developed in Dervin's sense-making theory, discussed later in this chapter. Kuhlthau (1991) takes the library sense-making analogy further. She suggests that library users go through a variety of stages of information seeking where, in trying to make sense of their information-seeking
processes, they experience feelings and emotions such as doubt, frustration, anxiety, relief. To Kuhlthau (p. 362) ‘personal construct theory describes the affective experience of individuals involved in the process of constructing meaning from the information they encounter’.

Personal constructs can be seen to work on different levels in relation to information seeking. Firstly, prior experience and its resultant personal constructs in relation to specific sources will influence whether or not a source is chosen to seek information and, if chosen, how it may be used. Secondly, if a colleague or librarian is chosen to assist with an information need, personal constructs may influence how the user approaches the person or who they choose to approach. Thirdly, as a user’s personal constructs are in a state of constant formulation, and reformulation, any interaction with sources may result in these personal constructs changing. The literature (e.g. Kuhlthau 1991) suggests that a major influence on why a user’s personal constructs may change lie in the affective realm.

This affective realm, comprising an individual’s emotions, feelings, beliefs, attitudes and values, plays a part in the development of personal constructs, with each experience being individual to that person. This means that the affective realm also influences a user’s decision on whether to use a specific source or not. The affective realm also plays a part in any interaction with colleagues, library systems and/or librarian. This means that emotions, feelings, beliefs, values and attitudes constantly play their part in determining whether or not an information need will be met, and influence the interplay between source and user. In summary, affective reactions influence personal constructs which influence choice of sources.

Moreover while the affective realm may influence the decision as to who or what is approached with an information need it may also influence the interaction between source and user and may also be the catalyst for the user seeking a solution to an information need in the first place. The drive to seek information, once the information-seeking process is in motion, draws upon some basic need in the individual, and information-seeking behaviour could be used to aid the satisfaction of needs which are themselves part of the affective realm (T. D. Wilson 1994). T. D. Wilson (1981, p. 8) talks of ‘information-seeking towards the satisfaction of needs’ and suggests that
individuals are looking to satisfy one or more of those categories of commonly identified human needs: physiological, affective and cognitive. He sees the affective realm as both giving rise to information needs and satisfying information needs.

Sense-making

Dervin’s approach to ‘sense-making’ has been discussed above but deserves further consideration. She may have adopted the term from Kelly (1963), although she appears to have been credited with development of the sense-making methodology in the information and communication field. She refers to it as ‘a set of metatheoretic assumptions and propositions about the nature of information, the nature of human use of information, and the nature of human communication’ (Dervin 1992, p. 61-62). In what she calls her sense-making metaphor, an individual in the process of information seeking in a particular situation identifies gaps (discontinuities), which need to be addressed and of which sense needs to be made. These gaps need to be bridged by strategies which Dervin calls ‘helps’. As the individual moves through these sense-making moments, ideas are constructed and reconstructed, based on the experience of the new situation and/or reconstitution of ideas formed in the past. The following two quotes encapsulate her views:

The essence of that sense-making moment is assumed to be addressed by focusing on how the actor defined and dealt with the situation, the gap, the bridge, and the continuation of the journey after crossing the bridge (p. 70).

Sense-making focuses on behavior. As such, it assumes that the important things that can be learned about human use of information and information systems must be conceptualized as behaviors: the step-takings that human beings undertake to construct sense of their worlds. These step-takings, or communicatings, involve both internal behaviors (comparings, categorizings, likings, polarizings, stereotypings, etc.) and external behaviors (shoutings, ignorings, agreeings, disagreeings, attendings, listenings, etc.) (p. 65).

At times interference occurs to the step-takings identified by Dervin. Individuals find that they can no longer continue in the direction they have been taking, and information-seeking behaviour stalls. The individual cannot ‘move forward without constructing a new or changed sense’, so that the gap can be bridged, barrier faced and the journey
continued (Dervin 1992, p. 68). The 'helps', which are used to cross the bridge, are also part of information-seeking behaviour, or, as Dervin refers to it, help-seeking behaviour.

Sense-making and personal construct formulation are important in any consideration of reasons why information needs may not be satisfied in the information-seeking process and of how they may be hindered or reconstructed by the presence of intervening variables or barriers as they are usually called in the literature.

**Treatment of barriers in the literature**

The key literature in the area of information seeking often discusses barriers to information-seeking behaviour. For example, in Dervin's earlier work on information needs of urban citizens she identified five information accessibility factors or barriers hindering information accessibility: societal (information and resources must be available); institutional ('information sources must be both capable and willing to deliver the needed information to the individual'); physical ('individual must be able to make contact with the information sources...'); psychological ('individual must be psychologically willing to see his needs as information needs, to approach and obtain information from appropriate sources, and to accept the possibility that his problems can be solved.'); intellectual ('individual must have the training and ability that will allow him to acquire and process the information he needs.') (Dervin 1973, p.15-17). Dervin's approach has relevance in any examination of reformulation of information need and the affective factors which may be an influence in such reformulation. As discussed earlier, affective factors are considered very important in influencing information-seeking behaviour. Dervin's barriers to information accessibility are still relevant as categories through which to identify those key factors influencing use or non use of information providers by individuals and have been used by Julien (1999a) in her study on barriers to adolescents' information seeking for career decision making.

Wilson and Walsh (1996, p. 13-14) also referred to intervening variables or barriers in information-seeking behaviour. They categorised these variables as personal characteristics, including psychological and demographic variables, role-related/interpersonal variables and environmental variables such as economic variables and source characteristics.
The term 'barriers' is used by others writing in the area of library science (See, for example, Mount 1966; Crum 1969; Swope and Katzer 1972). In this thesis, however, the terms motivators/demotivators are preferred. The reasons for this preference are discussed below.

As mentioned in Chapter 1 the *Australian Concise Oxford Dictionary of Current English* (1997) definition of 'barrier' suggests obstacle, anything that prevents progress or success. 'Barrier' implies prevention of information-seeking behaviour rather than impediments to that behaviour. The existence of so-called barriers in practice does not mean that information seeking will not take place. It may be taking place with the full knowledge of the existence of the so-called barriers by the information-seeker. What were once barriers may not exist further down the track, as they have been incorporated into changed, or reconstructed, personal constructs.

'Barrier' or 'barriers' appear to be preferred by key researchers such as T. D. Wilson, Dervin, Julien and Kuhlthau who do not question or discuss the use of these terms in their writings. Perhaps this is an indication that their widespread use is taken for granted, that their meaning is clear, and that their use does not present an issue to be raised in the literature relating to information seeking. The alternative suggested in this thesis – motivators and demotivators – may cause concerns because of their use in other fields such as business, psychology and social psychology. Those who have concerns may hold them because of the psychological characteristics implicit in the terms, 'motivators and demotivators', rather than because they support the term 'barriers' as being more suitable. Motivation is usually seen to be associated with the state of mind of individuals and maybe considered to negate the potential influence of external factors influencing 'social construction of reality' as identified by Berger and Luckmann (1967).

**Motivation**

The concept of motivators/demotivators and the use of these terms are inextricably linked to the concept of motivation. Motivation provides the driving force for behaviour and motivators or demotivators can be considered the positive and negative aspects of this force.
One does not however have to look far in the literature on motivation in psychology or social psychology to see that the whole area of motivation study is complex, diverse and representative of many viewpoints. According to Zimbardo (1992, p. 435, 455):

Psychologists have advanced many different theoretical views to understand the nature of motivated behavior, but none have been completely satisfactory...The dynamic aspects of motivation are being investigated at many different levels from the genetic and biological to the behavioral, cognitive, social and cultural.

Motivation is generally thought of as the process that energises and directs behaviour, or as Zimbardo (1992, p. 424) puts it: ‘Motivation is the general term for all the processes involved in starting, directing, and maintaining physical and psychological activities’. Some psychologists see it arising out of ‘instincts, drives and other biological forces which underlie behaviour’ while others look at psychological aspects of the individual and aspects of the environment (Avery and Baker 1990, p. 374). According to Avery and Baker (p.375): ‘our understanding of human motivation is incomplete if we do not consider sources which stem from the environment and from the individual’s personality, experiences and ways of viewing the world’. It is also important to note that:

significant human motivation comes not from objective realities but from our subjective interpretation of them. What we do now is often controlled by what we think was responsible for our past successes and failures, by what we believe is possible for us to do, and by what we anticipate the outcome of the action will be (Zimbardo 1992, p. 434).

It therefore seems appropriate that perceptions of what was responsible for the success or lack of success in information-seeking behaviour could be thought of as motivating/demotivating factors, that is incentives or disincentives, or positive or negative influences that encourage or discourage such behaviour.

The approach used by two social psychologists, Fiske and Taylor (1991, p. 5), in their concept of a ‘psychological field’, is relevant to this discussion and helpful to understanding the motives for engaging in information-seeking behaviour in the future. They talk of a psychological field that consists of a configuration of forces, where one must understand the ever-changing balance of forces operating on a person in any given
situation in order to predict anything. This psychological field, and hence behaviour, is determined by two sets of factors. One of these is the person in the situation, such as the academic needing information for research and teaching. The other set comprises cognition, which provides the perceivers's own interpretation of the world, and motivation, which is a function of person and situation. Motivators/demotivators spring from personal constructs formed by the interaction of the environment and individual 'psychology'. A working example could be seen in the academic not knowing how to approach a database or other source for information, but the motivation for the information need to be activated is not strong enough for it to occur. A variety of physiological (feeling tired), psychological (not feeling confident about using the only sources that come to mind) and environmental (the source requires technological expertise to operate) demotivators may prevent the information-seeking behaviour occurring or ensure its discontinuation once commenced. Conversely motivators such as physiological (have a sudden burst of energy), psychological (feel confident about using a known specific online database) and environmental (know how to use the technology) may motivate information-seeking behaviour.

Treatment of motivation in the library science literature

Although the emphasis in the literature is on use of the term 'barriers', T. D. Wilson (1981, p. 7) discusses the term motivation in the context of driving/initiating action:

The study of information-seeking behaviour can stand on its own as an area of applied research where the motive for the investigation is pragmatically related to system design and development. A different motivation is involved if we wish to understand why the information seeker behaves as he does.

and

the full range of human, personal needs is at the root of motivation towards information-seeking behaviour...these needs arise out of the roles an individual fills in social life (p. 9).

While these 'needs' may be the root of motivation towards information-seeking behaviour, motivating forces such as the stress/coping model as an example of an activating mechanism also determine the direction or the path information-seeking
behaviour will take (Wilson & Walsh 1996, p. 36). This model may also act as a non-activating mechanism where information-seeking behaviour may not be commenced.

Westbrook (1997, p. 316) also refers to motivations and sees them as a part of what she calls the ISE (information-seeking experience), which involves actions, motivations and decisions. Motivations for Westbrook (1997, p. 328) are one of a range of internal factors linked to the affective domain such as attitudes, preferences and expectations.

It seems that information-seeking behaviour can be affected by various influences or motivators/demotivators related to source, image and time. What appears to be missing from models of information-seeking behaviour is the acceptance that, in order to understand them, it is as important to understand what encourages people as well as what discourages them.

**Barriers and motivators/demotivators**

For this thesis, motivators and demotivators are derived from personal constructs which are both internally created by influences, such as personality, attitudes, beliefs, which may have been influenced by external influences such as work roles, discussed later in this chapter. These are forever changing and interacting upon and between each other. In terms of the aims and objectives of this research, it is more appropriate to talk in terms of motivators rather than barriers. Barriers imply negative influences and are usually used without a positive corollary. It does not seem appropriate to talk of positive and negative barriers.

Information-seeking behaviour is influenced by a multitude of motivators and demotivators that cannot properly be considered as barriers and whose interaction is taking place continually in a particular time and space context. This thesis considers that the term barriers is too closely linked to prevention of access to information accessibility. The researcher contends that accessibility is not prevented, but merely affected, by a range of motivating and demotivating factors.

In the context of this study the use of the term demotivator implies the non-commencement, cessation or interruption of information seeking because of the presence of demotivators that stop, impede, deter or defer information-seeking.
behaviour. Use of the term motivator implies the opposite, an influence that encourages information seeking to take place.

Motivators and demotivators influence whether or not the information-seeking process will be initiated, and, once the process is commenced, whether or not it will be continued. Knowledge of the existence of demotivators may, for example, act as a demotivating force while knowledge of the existence of motivators may act as a motivating force. Limited attention is devoted in the literature to the discussion of motivators and demotivators that influence information seeking. Brown (1991), Wilson (1981) and Wilson & Walsh (1996), for example, refer to barriers, although there is no term suggesting the opposite position, a driving force. Talja, Keso & Pietiläinen (1999) mention social, cultural, personal, situational and organisational factors as discrete and separate entities 'which constrain and motivate individuals' behavior in various ways' (p. 753). Kuhlthau (1991; 1993), though, another major contributor to research in this area, gives special attention to the role of the affective realm as a major element driving information use.

The use of the terms motivators and demotivators allows each incident of information-seeking behaviour to be considered more appropriately as a dynamic continuous process which may change along every step of the way as motivators or demotivators step in to alter direction of the process or to encourage it to continue in the same direction.

Models of information-seeking behaviour

A number of models of information-seeking behaviour focus upon barriers to information seeking, the importance of which is highlighted by Brown (1991, p. 13): it may well be that the barriers are the most unmanaged and influential area in the information-seeking cycle...research concentrating on the barriers to information-seeking behavior and how they affect need satisfaction may prove advantageous. Such research may lead to a grounded theory of search-demotivation, and knowledge might be gained to help the individual move more effectively and efficiently through the cycles of information-seeking.

T. D. Wilson's (1981) model and its revision (Wilson and Walsh 1996) are discussed earlier in this chapter. In Brown's model of information-seeking behaviour, barriers are
included 'at the interface of the context and the process of information-seeking behavior.'

Barriers to the seeker’s (patron’s) information-seeking behavior can occur at multiple time location in the process, can arise from multiple sources, and may not be recognized as barriers to the seeking behavior (Brown 1991, p.13).

While not always identifying ‘problems’ or ‘hindrances’ to information seeking as barriers the models attempt to take into account that there are many influences, which affect whether an information seeking exercise will be successful or otherwise. Kuhlthau (1991, 1993) and Ellis (1989) are especially interested in the stages of the information-seeking process, and affective and cognitive influences on information seeking, that users experience in their search for information in a library.

Westbrook (1997, p. 323) seems to be referring to influences or facilitators/harriers to information seeking when she suggests:

users assimilate or make sense of the information they encounter in different ways, depending on such factors as their learning styles, cognitive functions, and affective responses...different users evaluate or judge the same information differently [and] information seeking not only has a context but that context is crucial.

In support of Kelly (1963) and Dervin (1992), Westbrook believes that people make sense of information in their own way, based on their existing system of constructs. Firstly she considers that:

The user brings internal sources of information to the search process, such as "the reason for the search, necessary beliefs, object of the search, object knowledge, domain knowledge and search knowledge". Any of these internal sources may be challenged or disrupted in a manner that creates a new gap for the user...the user may be internally inhibited by a variety of difficulties (1997, p. 324).

Secondly, she maintains that people evaluate information in the process of information seeking, most notably in terms of cost, measured in terms of time and money, and effort, which is measured in terms of convenience and comfort. Thirdly, she suggests that social, geographical and professional contexts influence information-seeking behaviour.
The model of the information seeking of professionals developed by Leckie, Pettigrew and Sylvain (1996) is also relevant to this study, and also draws upon internal and external constructs. In this model the authors suggest that work roles influence tasks to be performed which, in turn, determine characteristics of information needs, whose outcome is influenced by sources of information and awareness of information. Individual decisions about the path information-seeking behaviour will take are made on the impact of these influences. This can be illustrated by taking the example of a typical academic who performs a number of roles, such as researcher, teacher and administrator, in his/her day-to-day work. This academic, among the many tasks, may have to prepare fund applications for research bodies, advise students on assignment preparation and work out budgets. Information needs are generated out of these tasks and may or may not require the use of informal sources (such as colleagues) and formal sources of information (such as libraries). The awareness of the academic about information sources will influence the actions he/she takes. For example, if the academic required information on assignment preparation, it is likely that he/she would draw upon his/her internal constructs and also perhaps seek out specific sources, such as a text, that has been used previously, to reach an outcome. While the nature of the need affects the way the information is sought, Leckie and Pettigrew (1997) and Leckie, Pettigrew and Sylvain (1996) suggest a number of intervening variables/influences, resembling those discussed by Westbrook (1997), that can affect the information seeking outcome. These include

Individual demographics (age, profession, specialization, career stage, geographic location), context (situation specific need, internally or externally prompted), frequency (recurring need, or new) and predictability (anticipated need, or unexpected) (Leckie & Pettigrew 1997, p. 102-103).

as influences of information need and

familiarity and prior success (results obtained from strategy or source), trustworthiness (how reliable or helpful), packaging (convenience, usefulness ...), timeliness (found when needed), accessibility (relative ease of access), cost (relative cost-effectiveness), quality (level of detail, accuracy ...), and accessibility (relative ease of access) (Leckie, Pettigrew and Sylvain 1996, p. 185).
as influences that may determine the path that information seeking will take. These are taken up again in Chapter 4.

In the terms of this thesis, these influences are seen as examples of motivators/demotivators to information seeking. Before an information need is actioned a number of motivators/demotivators may interact to determine the choice of information source. In Leckie, Pettigrew and Sylvain’s (1996) and Leckie and Pettigrew’s (1997) terms these influences spring from the work roles of the academic, their work tasks and their awareness of information sources and/or content. The following version of Leckie, Pettigrew and Sylvain’s 1996 model, adapted for University academics, illustrates this process in a linear manner. In practice the process is anything but linear with a possible web of interaction within interaction as information seeking changes direction or even abruptly stops. A typical academic at Charles Sturt University could be expected to undertake the following work roles on a regular basis. These are included here to indicate the range of areas in which motivators/demotivators may have their genesis or by which they may be influenced.

**WORK ROLES**

Teaching

- Internal
- Distance

Research

Administration

Consulting

Course Promotion

Student Consultation

Curriculum Development

**TASKS**

Preparing lectures
Preparing Distance Education Material
Writing Reports/Articles
Organising Seminars, Conferences
Counselling
Using University Information Systems

INFORMATION NEED CHARACTERISTICS

Access to Latest Information
Continuing Education Course Attendance
Urgent Information Needs

INFORMATION SOURCES

Formal – Libraries, Internet, Databases
Informal – Colleagues, Conferences
Personal Knowledge

AWARENESS OF INFORMATION

Familiarity and Prior Success
Packaging
Accessibility
Cost
Timeliness
Trustworthiness
Quality

Information-seeking behaviour and information sources

As indicated throughout this thesis, academics use a range of information sources to find information and it is the interaction of the academic with these sources that plays a large
part in formulation of personal constructs. Sources may come attached with a personal construct ‘assigned’ by the academic because of the result of past experience.

The research literature suggests that there are four major categories of information sources for the academic: personal, library, the World Wide Web and the invisible college. People, no matter in what field they are working, appear to prefer to consult personal sources of information (Chen and Hennon 1982; Dunn 1986; Grosser 1989; Harris and Dewdney 1994). People prefer to go to other people for information. This is not a new finding but it has become more significant with the trend to non-intermediary electronic access to information. People prefer personal sources of information for a variety of reasons as Grosser (1989, p. 18-21) suggests:

- A natural human need for social interaction, for developing meaningful relationships with others
- A desire to establish or promote a conducive and mutually supportive working climate, to nurture personal links through frequent interaction
- Laziness: when it seems easier to call out and ask someone rather than spend time and effort locating the answer personally
- The quickest means of procuring the desired information
- The most efficient means of procuring the desired information, avoiding problems of information overload required in the process of identifying, sifting and evaluating information sources
- Expert advice from someone who is more familiar with the area than you are
- They may provide more up to date information than available in physical sources
- They add value to information, interpret its meaning and significance in a particular context

The library category is used to represent those catalogues, databases, journals, books and other materials which libraries are commonly thought to provide either electronically or in hard copy. The World Wide Web category represents those situations where the information seeker decides to undertake a search for information on the World Wide
Web or to use email on chat facilities for information seeking. The invisible college is also a personal source of information, although it could be considered a more formal source. This research did not attempt to quantify the extent of use of various sources, but some discussion of the importance of these sources of information is provided in Chapter 4. They are discussed in terms of the motivators/demotivators attached to their use.

It should be mentioned that there are many factors beyond the control of the user (e.g. size of libraries, location of libraries, access to computers and appropriate hardware and software to search databases, access to a range of databases) and many factors to a certain extent within the control of the user (e.g., size of personal library, attendance at continuing education classes, use of colleagues for advice, development of an information network) that may influence information-seeking behaviour.

The combination of factors such as these act to influence the formation of personal constructs which again affect motivation to seek information.

Information-seeking behaviour and libraries

An especially important source of information for academics is the library and a special focus in this thesis is given to information-seeking behaviour in the library environment. This is not to divert attention from the other sources used by academics to seek information, such as the invisible college. These 'other sources', mentioned earlier, are discussed in Chapter 4. The literature gives heavy reference to the role of the library in information-seeking behaviour. In the library world, a major role of the librarian has in the past been seen to be the maintenance of an information system, the information retrieval system, or, even more specifically, the catalogue, so that material could be easily identified for users. Users who interacted with a library information system may or may not have interacted with a librarian. The catalogue provided links to the physical location of material either in the library being used or in another library. In those libraries where a reference interview took place, in order to more closely identify the user's information need, the librarian may have become an active participant in the search for information.
Much research in the past 20 years, following the introduction of automation in libraries, has been about improving the catalogue interface for the librarian and for the user and emphasising self help in regard to accessing databases via CD-ROM and the Internet. The user, in the past, had use of the system in operation defined for them; there was little interest in any user input into redefining the system according to needs. Improvement in information retrieval was seen to lie in improving systems. The value of user input into suitability of systems and how the library can best meet the information needs of users is now achieving some recognition. According to Westbrook (1993, p. 541): ‘The long-standing separation between those who view information retrieval in frames of system design and those who view it in frames of user needs is beginning to break down’.

Information need of the user

In the reference process the essence of librarian-user interaction has traditionally been seen as the point where the librarian meets the user in a reference encounter to work through what might be called the ‘information need’ of the user. Some models of the information-seeking process are reflected in models of the reference or search process. Typically these models followed that of Katz (2002) and others, and highlighted the beginning of the process or information-seeking exercise as being a reference interview. At the reference interview the librarian, by using standard communication techniques, identified what the user wanted. In the most desirable situation, the librarian linked the user with sources that could lead to the required information or found the information for the user. Before the user left the library, the librarian would check the user had the information required. The librarian was considered the link between the information retrieval system and the user and between the sources available and the user.

Reality was often very different and there were many barriers (the term used in the literature) preventing successful completion of the reference process (Mount, 1966; Crum, 1969; Swope and Katzer, 1972; Taylor 1968). Consideration of the affective realm and its potential influence on librarian-user interaction was little understood; the reference process began only when the user contacted the librarian. Librarians designed systems and services they considered users wanted and, as mentioned above, users were rarely consulted; the reactions of users were not really sought or wanted. The literature has little to indicate that librarians were concerned about user input or user-centred
evaluation of library services, although there is some evidence that they were concerned about a number of aspects of librarian-user interaction and were keen to see an improvement of services. Mount (1966, pp. 576-578), for instance, in an early study of what he called, communication barriers between users and reference librarians, pointed to the following:

An inquirer lacks knowledge of the depth and quality of the collection...knowledge of the reference tools available...knowledge of the vocabulary used by a particular set of tools...An inquirer does not willingly reveal his reason for needing the information...hasn't decided what he really wants...is not at ease in asking his question...feels that he cannot reveal the true question because it is of a sensitive nature...dislikes reference staff members (or vice versa) and consequently avoids giving a true picture of his needs...lacks confidence in the ability of the reference staff.

In a later paper Crum (1969) identified physical, personality, psychological, communications and professional barriers in the ‘librarian-customer’ relationship. Swope and Katzer (1972, p. 164) in their paper, ‘Why don’t they ask questions?’, found that ‘through words and actions librarians are reinforcing the user’s feelings that he is a bother or he is stupid,’ and ‘it does not appear that familiarity with the library (high use) helps overcome those barriers which inhibit user-initiated interaction with the librarian’. They concluded by pointing out that librarians must become aware of the image they have acquired in the eyes of the user and that a user-centred point-of-view of library service is needed. However, while there was certainly an awareness that barriers existed, there was little conceptualisation of how the user formulated an information need, presented it to the librarian or system and evaluated the response.

Taylor (1968, p. 82) in his classic paper on information seeking went some way towards trying to conceptualise the reference process from the user’s point of view. He identified four levels of question formulation: ‘the actual, but unexpressed need for information (the visceral need); the conscious, within-brain description of the need (the conscious need); the formal statement of the need (the formalized need); the question as presented to the information system (the compromised need)” (p. 82). He concluded that the decision on whether or not to ask a librarian for assistance is based upon factors such as ‘the inquirer’s image of the personnel, their effectiveness, and his previous experience with this or any other library or librarian’.
In one of the early qualitative studies, ‘Library anxiety: a grounded theory and its development’ (Mellon 1986), the librarian-user relationship was examined. This research focused on the feelings of students about using the library for research. She found that ‘students generally feel that their own library-use skills are inadequate while the skills of other students are adequate...the inadequacy is shameful and should be hidden, and...the inadequacy would be revealed by asking questions’ (p. 160). This finding has some similarities to those found in this research and reported in Chapter 6.

In a more sophisticated view of the reference process, reconceptualised by Kuhlthau as the ISP (or Information-Search Process), the fact that there is much more to meeting information needs than linking user and system is accepted, as is the importance of user education. According to Kuhlthau (1991, p. 370)

Merely devising better means for orienting people to sources and technology, however, does not adequately address the issue of uncertainty and anxiety in the ISP. ... Systems and intermediaries are presently directed to answering well-defined questions, not ill defined ones reflecting uncertainty. ...The whole experience of users affects their information use, their feelings as well as their intellect, particularly in the exploration stage. By neglecting to address affective aspects, information specialists are overlooking one of the main elements driving information use.

Radford (1996, p. 124-125) focused upon the reference interview stage of information seeking where the librarian is trying to understand the user’s needs. She believed that ‘An understanding of the interpersonal communication processes involved in the reference encounter has the potential to reveal much about the perceived success or failure of a particular library experience for both librarians and users’. The relational communication framework approach to face-to-face-interactions considers messages in two dimensions, the content (what is being said, the ‘report aspect’) and relational (how the message is said, the ‘command aspect’). Radford’s study highlights the relational information librarians are communicating in their verbal and nonverbal expressions as communicated through

linguistic cues and gestures that convey approachability, rapport building, and empathy. These acts influence the ability of the librarian to
understand successfully the user's need and to establish a positive relationship (p. 125).

As with the traditional model of information seeking, perhaps seen rather crudely as the reference process, models such as Kuhlthau's which take into account the affective domain of the user, also do not consider those information needs which never get through what Kuhlthau calls the 'initiation' stage or others may call the reference interview stage. Swope and Katzer (1972) also refer to those many users with information needs but who do not seek their resolution, for various reasons.

Along with Kuhlthau (1993) Ellis (1989) and Westbrook (1993, 1997) have presented information-seeking stages which commence with a formulation of information need and conclude with a closing of the search. Obviously in reality in many cases the encounter between librarian and user did not take place and the user tackled the system directly. Tenopir (2000, p. 32) refers to this in a recent article and suggests that, although personalised service is a goal from the past, it is doubtful if it ever was attainable and 'with the proliferation of resources, the growth of ... universities, and the increasing demands on librarians' time, it clearly has been unrealistic for decades'. If information professionals are to improve access to information seeking from libraries then they need to do more than concentrate upon the personal interaction between user and librarian, which is really a small part of the total interaction. One potential approach is to examine the personal constructs users have towards libraries and the influences of these upon patterns of use. The influence of the 'virtual' library concept is also a factor here and may influence personal constructs of users towards libraries and at the same time provide an alternative to traditional library information-seeking patterns. Additionally, if personal constructs are examined in the context of motivating and demotivating influences, information professionals may be closer to understanding why users behave the way they do and be in a position to improve the service provided by libraries to their users.

**Personal constructs, image creation and libraries**

Information seeking, or help seeking, commences when the individual consciously decides to seek some resolution to the problem and takes some action such as asking a colleague for help. This process of information seeking may be over quickly, with help realised, or the information need may be displaced, owing to insufficient help or by
another information need, which may or may not be related to the first. The process continues until either the information need is solved or not pursued. Reformulation, referred to in the first chapter, takes place when individuals with information needs find their choice of information providers or sources unavailable or unhelpful, or, during the process of interaction, the information need is reformulated and presented again. This can occur for a variety of reasons, and changes may occur in choice of information provider or source in an effort to obtain a successful resolution of the information need. Individuals are constantly constructing their view of the world based upon experience and, just as each day sees the addition of new constructs, so individuals in their information-seeking behaviour are constantly changing their constructs.

Each new information-seeking experience may change an individual's construction of an information provider or source, or of the need itself, and reformulation may occur. The original information provider approached may no longer be considered appropriate and has been replaced, or the same source is chosen again for the new or modified information need. Concurrently, information providers may be going through a similar process in regard to the information seekers with whom they had been dealing.

As an indication of how past experience plays a part in determining future action, Dewdney and Ross (1994), in their reference evaluation study relating to libraries, found only forty percent of library users would be willing to return to the same librarian with another question. As Kelly (1963, p. 72) says, this act of reconstructing events is experience, and experience influences future action:

As one's anticipations or hypotheses are successfully revised in the light of the unfolding sequence of events, the construction system undergoes a progressive evolution. The person reconstructs. This is experience.

Unfortunately a perceived negative experience with use of many service-oriented institutions, which may be no more than an email or telephone call not returned, may translate into 'this institution is hopeless' or 'the staff are rude' or 'their procedures are out of date' or 'I will never use their service again'. Such behaviour is common and relates to institutions such as libraries. The converse also exists where a positive experience in obtaining the required information may translate into 'this institution is
great', 'the staff are helpful' or 'I will come back again'. One small experience may be generalised to cover everything the institution does.

Durrance (1986, p. 65), in a study of student use of academic libraries found that 'about half of the users avoided particular staff members because they were unpleasant to approach' while 'forty-four percent avoided certain staff members because in a past experience the staff member had appeared to be too busy to deal with their inquiry, had given no help, or had given more help than the user needed'. In their study of information needs of urban citizens, Chen and Hernon (1982) found that 92.7% of people who had found a helpful source in the past would return to that source again.

In her study of the information behaviour of adolescents Julien (1999c) found that 'affective aspects of their experiences with information sources heavily influence their judgements of the usefulness of their interactions with both formal and informal sources' (p. 588). Julien (1999c) also suggests that information providers who are suspect by users in terms of their motivations, reliability, or knowledge, 'or who are unable or unwilling to demonstrate emotional sensitivity as they provide help, are not found to be useful' (p. 589). An individual's view of service-oriented institutions, such as libraries, is built up over time; by experience in use or by perceived 'knowledge' about institutions, a view of an institution is constructed. These personal constructs, however, are never immutable but may go on being changed or reconstructed over time, with each new positive or negative experience. It is conceivable that an individual does not have identifiable, conscious personal constructs relating to particular libraries or librarians or their constructs may be some hybrid representing the two. This is taken up again in Chapter 5, which is devoted to image construction of libraries and librarians.

T. D. Wilson (1994) is interested in the reasons for seeking and satisfying information needs rather than the factors, which drive information use, which is Kuhlthau's emphasis. As mentioned before, Kuhlthau's (1991, p. 370) view is that one of the main elements driving information use is the affective realm and that the librarian needs to be aware of this. In her research on the Information-Search Process (ISP), discussed earlier in this thesis, an awareness of the emotions, feelings and beliefs which users experience in the ISP are essential to the achievement of a satisfactory outcome. Nah1 and Tenopir (1996, p. 277) see that 'the affective domain pulls together into one powerful category
the entire motivational and emotional involvement of searchers’. As mentioned before, the affective realm has a profound effect on personal constructs which again translate into motivators/demotivators to information seeking.

The library user and technology
Given the increasing electronic accessibility of library holdings and the possibilities for electronic communication between library and user, access to or use of a library is difficult to define. Ercegovac (1997, p. 49) addresses the problem of definition of ‘library use’ in this age of digital libraries and suggests that there is ‘definitional unclarity surrounding even the most common concepts such as a library, access to information, or library collections’. While fewer problems were found, in this research, with defining the library as a place to study, to read reserve material, to browse the shelves and photocopy items, those concepts that are ‘...influenced by the computer technology and networking ... may have both traditional and new meanings by different user populations’ (Ercegovac 1997, p. 49).

It may have always been difficult to define accurately what library use may mean to those who access a library. The literature appears to have conveniently restricted use to in-person use or by telephone. Most libraries, since the late 1980’s, have always received enquiries by electronic means as well as by telephone and personal means. Developments in electronic methods have recently added e-mail access as well as direct online user access to the library’s catalogues and databases and to librarians who provide information services.

As mentioned before, the personal interaction with a librarian is just one aspect of the library-user interaction, and not a new one in the information-seeking process. It is an aspect that many users may not experience. There is an increasing availability of electronic access to library collections, to information through computers and the Internet and answering of requests through email. Tenopir (2000) says in relation to this change in accessibility to resources:

new technology allows us to play “information missionary” with more facility. We can reach our users wherever they may be hiding—their dormitories, their offices, or at home... We can “compel” the reader to "enter" in virtual ways as well as physical. 'Between OPAC’s, indexes,
pathfinders, and search engines, we've tried as best we can to inform individuals about the many resources they can now access, but there has been little personalization' (2000, p. 30).

Use of a library in the future could lie in access to a range of catalogues, resources, networks, where the 'user' of library-created resources may never physically come into contact with librarians, only with the results of their work. The age of the librarian or information professional as a phantom, whose work is primarily electronically based, is obvious to those few who know, but whose influence most 'users' do not conceive of or understand beyond some vague construct that 'someone facilitated all of this electronic access', may be dawning. The desirable move towards user-oriented services, rather than system-oriented, which has been encouraged by researchers such as Dervin and Nilan (1986) may be short lived as the user becomes more invisible in an electronic, network-oriented environment. The image of a librarian as an intermediary, a help, a human service provider may be so weak as not to withstand the increasing direct access to information such as the World Wide Web. There are some dangers here for the librarian as Tenopir (2000) suggests:

Online resources allow us to turn much of the intermediary role over to the end user... Technology both enables and requires librarians to be educators – patrons need instruction in techniques and, more importantly, in analysis and evaluation (p. 32).

On the other hand the librarian's role as an educator and filter/evaluator of information for their users may be enhanced.

Reasons for choosing non-library sources as preferred sources of information could lie in past experience with libraries or in more positive experience with non-library sources. There is a need for better understanding of the attitudes of both 'non-users' and 'users' to libraries, and to information seeking in general, in order to evaluate how library services may be changed, if it is considered they should, to reflect more accurately the needs of existing and potential users. In examining motivating factors in the information-seeking process it is essential to take into account all means of access.
Impact of technology on library services

Kuhlthau (1991, p. 370) discusses the impact of technology on library services in her research and suggests:

The education of users of information systems is becoming more important with each technological advance. Merely devising better means for orienting people to sources and technology, however, does not adequately address the issue of uncertainty and anxiety in the ISP [Information Search Process].

Answering questions for users is one thing, but getting the user to feel library-literate, willing to learn about systems, willing to return, is another. As mentioned earlier, currently and, to a greater extent in the future, those who use libraries will get more answers by direct interaction with computers than with librarians directly or traditional library materials; simple questions such as those about plans of the library and opening hours, are already being answered by computers. Librarians are answering questions electronically without any face-to-face reference interview and maybe, without even an electronic ‘interview’, seeking and providing clarification of their users’ enquiries.

In the 1970s information-seeking behaviour was typified by use of personal libraries, the invisible college and accessing literature in the academic library, often through the mediation of the librarian. The views of Missingham and Warne (1999), as presented in the following quotes, are representative of the views of many observers on the changes to the information-seeking behaviour of academics, brought on by the impact of technology.

the library... was central to information access...The information professional needed to be consulted for the great majority of database searching to occur, with libraries being required for access to print indexes as well as online versions. Document or collection access was also essentially a library phenomenon. Personal collections were important, but libraries contained the vast majority of materials required by clients... Full text information was accessible only in the published format, predominantly in libraries. The library or information centre was an essential part of the process for both collections and search tools as they were the repositories of published full text and index resources, as well as electronic gatekeepers (p. 269).
The situation has now changed, according to Missingham and Warne (1999), and there is now a new model of information retrieval and access:

[There is]...increasing complexity of the information environment in terms of technology, publishing, user expectations and library purchasing power has led to a new model of information retrieval and access. From the client’s perspective, there are now alternative means of accessing information and a major refocusing has occurred in terms of the position of the library and specialist searcher. The need for immediate gratification means that the client will sometimes seek a full-text item that can be searched for and delivered on their desktop, rather than ask a library to search for a more relevant item that may take a day or two to arrive...rather than act as an intermediator between the client and the information, the librarian is now frequently called in after the event to supplement and evaluate the outcomes of an inadequate search and to educate and facilitate the client’s use of the resources on their desktop (p. 276).

The findings in the present study mirror many of the changes discussed by Missingham and Warne (1999). The influence of technology is profound and searching habits have changed; an academic’s office is now the launching pad for forays into information seeking. The face of publishing has altered and many publishers are offering their products straight to the desktop of the academic, although this is often received via the library, as the purchaser of these services. Library purchasing power has also declined. Cantrell’s (1999) report on access to research monographs by academics and higher degree research students found that ‘...despite the best effort of libraries, researchers at a range of Australian universities experience considerable difficulties accessing sufficient materials in their subject specific areas to support advanced research’ (p. [i]).

Gorman (2001b, p. 48) refers to the increasing amounts of information available to us but ‘an ever-decreasing ability to cope with it, organize it, preserve it, and evaluate it’. He encapsulates the essential dilemma facing libraries today, and perhaps academic libraries in particular, and a central dilemma of this thesis. To what extent should service give way to digitisation as a service in itself? To what extent is service still the primary raison d’être of libraries? Is there another way in the current climate of staff reductions and budget cuts? Gorman (2001a, p. 7) suggests that:
Use of automation as a tool to improve and enhance libraries has now given way to something else. Increasingly, the transition from automation to digitization is resulting in a discontinuity in which the tool becomes larger and more important than the service.

Fairclough (1998, p. 3-4), although discussing public libraries, also has a message that is relevant for academic libraries, and gets closer to the heart of the matter when she says:

Libraries are a “people place” and it is the image of librarians that rests in the hands of...library staff...With the emphasis on increased access to information technology in public libraries and reductions in staffing levels, librarians are in danger of being cast to one side in favour of the same means of impersonal delivery of information that can be obtained from a computer.

It may be that the development of a positive attitude towards library services may well promote independent self-discovery in the belief that help is always at hand? But if self-discovery leads to frustration and reformulation of information needs and there is no one to whom one wants to turn to ease frustration, then the immediate desire to use the service may disappear and any desire to use the service in the future may be reduced. It seems reasonable to suggest that use of a library must be predicated on good and bad interpersonal relations occurring between users and librarians.

Conclusion

A considerable number of studies have focused upon the information-seeking behaviour of academics, specific subject areas and specific professional groups such as the clergy, engineers, health care professionals and lawyers (Sukovic 2000; Westbrook 1999; Tanner 1994; Palmer 1991; Leckie, Pettigrew and Sylvain 1996; Wilson and Walsh 1996; Wakeham 1992). In a review of these studies it became obvious that discussion of barriers to information-seeking behaviour was not a primary objective, although they were frequently mentioned. As discussed earlier in this chapter, a discussion of facilitators of information-seeking behaviour, or motivators/demotivators influencing information-seeking behaviour is especially significant to this research. This discussion will continue throughout this thesis. In the model of the information seeking of professionals presented by Leckie, Pettigrew and Sylvain (1996), influences/intervening variables/barriers that may affect the outcome of information-seeking behaviour were
useful in analysing the two key focuses of this thesis: an exploration of the information needs of academics for their research and teaching and the influence of technology on this information-seeking behaviour.

Demotivators can lead to search-demotivation in the information seeking process and 'can arise from multiple sources, and may not be recognized as barriers to the seeking behavior, rather, as boundaries of that behavior' (Brown 1991, p. 13). Once an information need is identified and source selection begins to take place demotivating or motivating factors begin to influence the direction information seeking will take. The preference for the terms motivating/demotivating influences is made because they represent a more realistic picture of the continuous, dynamic interplay of factors that affect information-seeking behaviour.

It is perhaps more by positive experiences, which lead to positive 'frames of reference' and 'personal constructs', relating to library services that the user will feel like returning, either to the library home page in front of them or personally through the door. An examination of motivators/demotivators which are closely related to personal constructs can provide raw data as to how positive 'frames of reference' and 'personal constructs' can be influenced. In summary, personal constructs resulting in motivators or demotivators influence formation of information need which may be activated in an information question. The choice of source(s), depending upon personal constructs held about it (them), will be made and information-seeking behaviour continues. The process may not end mentally, but it will end physically, when the question is either answered or processed, and the information obtained is either used or processed, leading to the formation of another information need, whereupon the process continues.
CHAPTER 3

METHODOLOGY

Possible research approaches

Williamson (2000, p. 25) outlines the two major traditions of research in the social sciences, the positivist and the interpretivist. The positivist approach applies research methods used in the natural sciences to the social sciences, generally to measurable or quantifiable phenomena. The interpretivist (an umbrella term for a number of paradigms) approach emphasises 'the meanings made by people as they interpret the world', which are not measurable or quantifiable. This is often referred to as qualitative research. As Reneker (1993, p. 499) says:

Qualitative research is inductive; that is, researchers develop concepts, insights, and understanding from patterns in the data, rather than collecting data to assess preconceived models, hypotheses, or theories.

Research contributions from the fields of library and information science, business, psychology and communication are drawn upon for this thesis.

When discussing these two major traditions, Patton (1990, p. 165) suggests that we are talking about a trade-off between breadth and depth. In undertaking research, the researcher is faced with this trade-off in determining which approach to use. A decision has to be made based upon such factors as purpose of the study, what data collection method or methods would be most useful to achieve the purpose within the constraints of the resources with which to undertake the project. Generally speaking those conducting research will adopt a quantitative or qualitative approach; these are discussed below. The approach taken is dependent on what you want to find out and the reason for the study.
Positivist (quantitative) approach

Quantification of research results is a key objective of the positivist school of thought. It is characterised by careful selection of samples using random selection of subjects and statistical manipulation of data to predict what will occur in particular situations (Mellon 1990, p. 5), although quantitative studies may also include collection of qualitative data, the reverse being true for qualitative studies. The positivist approach allows measurement of the reactions of a large number of people to a predetermined set of questions often administered through a questionnaire. Experimental and survey design are key positivist methods. In positivist research the measuring instrument is focused upon.

Interpretivist (qualitative) approach

In comparison with positivist research, qualitative research is non-linear and iterative where ‘various elements in the research are interwoven, with the development of one influencing decisions about the others’ (Williamson 2000, p. 32). Key tools used to gather data are observation, personal documents and interview. Usually a large amount of data is generated from a small number of participants. For the present study the interview was chosen as the preferred tool. The techniques of observation and document analysis were not considered suitable for generating data about the personal information seeking experiences of academics, and therefore were not chosen. Interviews, although time consuming, provide an excellent means of studying the:

Subjective views participants hold of a particular situation or event...[and] studying such emotional bases of behaviour as attitudes, beliefs and feelings. (Mellon 1990, p. 47)

In a qualitative study on information seeking among members of an academic community, Reneker (1993, p. 505) pointed out the advantages of the approach:

The ability to gather data without preconceived and prestructured variables or categories of responses allowed the results and conclusions of the study to emerge from the informants' words and behavior, that is, from the data itself, through the inductive methodological approach. The richness of the data set allowed the description of incidents in a context of the information-seeking environment and day-to-day activities and interactions, which provided additional insight into the information-seeking process.
In the present study research is chosen where 'the researcher is the instrument' (Patton 1990, p. 14). Because of the user-centred focus of the current study the positivist approach was considered inappropriate. One of the major aims was to investigate information-seeking behaviour from the perspective of the participant, and not to try and anticipate the participant’s viewpoint by channeling responses into predetermined categories as often occurs in survey research. For example in attempting to identify use patterns in libraries, quantitative research may ask how often a participant might use a library in a set period such as a week, fortnight or month. Results may indicate numbers from which some measure of the ‘business’ of the library can be gauged, perhaps in comparison to earlier use pattern studies. Qualitative research would approach this differently usually through an interview with open-ended questions, such as, what use do you make of the library? Results will usually not be quantifiable or comparable but a more detailed rich picture of use can be gathered: moreover use is defined by the participant.

For this thesis a semi-structured interview schedule, where the user was encouraged to ‘tell it as it is’, was used. It was chosen as the main research tool because of its capacity to meet two major conditions: it facilitated the personal input of the research participant and it allowed a degree of direction and control by the researcher. Why this was important and how it was carried out is elaborated upon later in this chapter.

Related research perspectives

The study has been influenced by two related research perspectives, symbolic interactionism and constructivism. Symbolic interactionism, as defined by Williamson (2000, p. 30), reflects the desire to obtain an individual perspective as it ‘emphasises the individual as a creative, thinking entity, capable of choosing behaviour rather than simply reacting to large-scale forces, as implied by functionalist theories’.

On the other hand constructivists accept that a theory cannot adequately and categorically explain the nature of a given phenomenon or the presence and activities of a social grouping. Since reality only exists in the minds of each individual, and each individual’s perception of what is real will differ from others, reality itself is pluralist and relativist and cannot be pinned down (Saule 2000, p. 164).
There are two kinds of constructivist theory. Kelly's (1963) personal construct theory represents the personal constructs placed upon experiences while social construct theory (Berger & Luckmann 1967) suggests that reality is socially constructed, influenced by the environment. In personal construct theory reality is personally constructed by experience with the environment and changed by such influences as personality, feelings and beliefs. Social construct theory emphasises the importance of interaction with the environment in constructing reality.

All constructivist perspectives facilitate the naturalistic approach (fieldwork usually takes place in a natural setting) with the interviewee relating an individual and personal story rather than the interviewer primarily determining what the story is and how the story is told. There is

An emphasis upon the importance of viewing the meaning of experience and behaviour in context and in its full complexity (and the use of qualitative data to access this) (Pidgeon 1996, p. 80).

As discussed throughout this thesis, information seeking is constructed from experience and, with each new experience, the personal constructs held may alter, change, be reformulated or reconstructed as the influence of both internal and external influences combine to create new constructs. Central to the theme is the standpoint of the 'actor', the interviewee, who as an individual acting in society, acts upon it and is acted upon but is not 'a mere puppet of society...moulded once-and-for-all by the impact of external factors' (Cuff and Payne 1979, p. 114).

As discussed in earlier chapters the theoretical approach for the present research is largely based on Kelly's (1963) theory of personal constructs and Dervin's (Dervin & Nilan 1986) sense making contribution to communication theory. The emphasis is user-centred and concentrates upon the individual's construction of reality, how individuals construct views or images of their information-seeking behaviour in their work environments. Of special importance are the motivators and demotivators that arise from personal constructs and then influence information-seeking behaviour. The primary instrument of data gathering, the interview, acted as the catalyst for obtaining from participants a personal story of how they initiated information seeking in their research and teaching lives in an academic environment.
The Process and the Instruments

The setting

Charles Sturt University (CSU) is a university based in New South Wales, which was formed following the amalgamation of several autonomous education institutions in the late 1980s. It has several semi-independent campuses, the main ones located at Albury, Bathurst, Dubbo and Wagga Wagga, and other operations in Australia and overseas. In terms of student numbers Wagga Wagga is the largest campus, with over 11,000 on-campus students, out of a total student enrolment of over 30,000 students.

Approximately two thirds of students study by the distance education mode in programs ranging from undergraduate to graduate degree level, including doctoral programs. The fact that distance education students form such a strong part of the student body has significance for this research. Some academic information-seeking behaviour may be closely aligned to the timing of the major revision of distance education study material which ranges from one to three years. Attendance at meetings and conferences may also be seen to be more important in reducing feelings of intellectual isolation for those staff whose primary teaching load is in distance education.

In-depth interviews

The study involved in-depth interviewing of 30 academics using a semi-structured interview schedule. This fits in with Morse’s (1994, p. 225) view that sample sizes of approximately 30-50 are appropriate in this type of qualitative research. Interviewing was chosen because, as Patton (1990, p. 278) says, interviewing allows us to enter into the other person’s perspective with the assumption ‘that the perspective of others is meaningful, knowable, and able to be made explicit’. Semi-structured interviews have a pre-determined list of questions but allow probing and follow up on leads provided by participants for each of the questions (Williamson 2000, p. 225). The interviews took place over a twelve-month period and were conducted by the researcher. The interviewee determined when and where the interviews were conducted. The research was carried out between December 1998 and December 1999. Participants were interviewed during both university term time and holiday time. The following procedures were followed in arranging and recording interviews with participants.
The pilot study

A pilot study was conducted between December 1997 and November 1998, using a sample of six academics employed on the Wagga Wagga Campus of CSU. It tested an interview schedule, which was subsequently revised to ensure a closer focus on the participants' use of technology and the barriers they found in their information-seeking behaviour. The pilot study was initially conducted using a very structured interview schedule that sought more to direct interviewees' answers into predetermined categories. This was found to be inappropriate in that some questions were unable to be answered because of lack of knowledge or experience in information seeking by the participants. A contributing factor was the use of too many closed questions that discouraged expansion of answers. The final interview schedule represented a semi-structured approach that encouraged participants to respond to prompts for discussion rather than be directed to answer more specific questions.

The interview questions

The audiotaped interviews followed the same pattern for each participant with Hatton's (1998) guidelines for ethnographic interviewing being used. Open-ended questions (see Appendix 1) were relied upon to explore a given topic and sub-topics within it. This approach to interviewing typically takes the form of asking 'grand tour' questions, which are designed to open up areas and the categories within these. These areas were then further probed by questions, which were prompted from the responses received. In some cases probing was more specific on certain areas for which elaboration or a response was desired. One question sought to elicit responses on 'barriers' in information seeking. The word 'barrier' was used in the research but as the result of the analysis of the transcripts became clear, a preference for use of the terms motivators/demotivators was made as was explained in Chapter 2.

The initial grand tour question asked in this research was: 'Could you just give me a little bit of information about your information-seeking behaviour ...how you might go about seeking information as you define it?' This was immediately altered to include '... behaviour for research and teaching...'. Other grand tour questions asked throughout the interview, when the topics were not raised by the interviewee or discussed in the interview were:
• Could you tell me about any barriers that may affect your information seeking?

• Has your image of libraries changed over, say, the past five years?

• Has your information-seeking behaviour changed over, say, the past five years?

• Has technology changed the way you view libraries and librarians?

• Are there ways in which the CSU Library might better serve your needs in the future?

The interview focus throughout encouraged the interviewee to interpret the question in terms of their personal understanding. The researcher, in note taking during the interviewees’ responses, identified points for which further explanation, elaboration was later sought. Interviewees were interrupted as little as possible. A series of interrogative verbal prompts/probes for which information was sought were also used as the interviews progressed. In particular, interviewees were asked to discuss any barriers they experienced in their information seeking if they did not previously cover these points. Another special focus of the interviews related to their use of technology in information seeking and, if this area was not discussed in sufficient detail participants, were also prompted to elaborate.

The following additional grand tour questions were added as the interviews progressed:

• Do you use the library in person any less now than five years ago?

• What do you believe is the role of the librarian in information provision?

• What do you believe is the role of the librarian in educating users to find information

Interview procedure

(1) Participants were generally chosen from the 1999 Internal Communications Directory of Charles Sturt University (1999a) and approached by email and/or telephone to determine their willingness to participate in the study. If they were willing to participate a ‘Consent Form’ (see Appendix 2) and an ‘Information
Statement Relating to PhD Research’ (see Appendix 3) outlining the study and their role in it as interviewees were provided. Further discussion regarding sample selection is presented later in this chapter.

(2) When a time and place for the interviews was identified (28 took place at participants’ places of work and two took place in their private homes), a brief outline of the purpose of the interviews was again provided, before the interviews were commenced.

(3) Most interviews were conducted over a period of 45 minutes to 1¾ hours and were audiotaped using a Sony cassette-corder with a voice sensitive microphone and later transcribed.

(4) The interviews were transcribed by a professional word-processor and verbatim transcripts were edited and ‘ums’ and ‘aahs’ were deleted. A revised transcript was submitted to each participant for checking, changing and providing comments if desired (see Appendix 4). These revised transcripts were compared to the originals and amendments made on the original if necessary.

The transcripts of audiotaped interviews provided the basic data for analysis in this thesis. Additionally personal memos and expanding/clarifying notes were important in providing further data.

**Personal memos**

Memos relating to impressions formed by the researcher were taken at each interview. These were later (up to a day after the interview) revised and expanded if necessary. These memos generally expanded upon points made during the interviews by participants but at other times they reflected general impressions of the attitudes, beliefs, feelings about the interviewees and their information-seeking behaviour formed during the interviews. Occasionally some interviewees made comments after the interview that they did not want recorded but were willing for the interviewer to record in note form.

**Expanding/clarifying notes**

When participants returned checked transcripts, additional comments to those on the transcripts were often received either in the form of a letter or an email. These comments were often reflections on the ideas presented in their transcripts and/or statements about why their information-seeking behaviour was the way it was. For some
it seemed to be an apology for not being what they considered ‘good’ or ‘efficient’ information seekers or having sufficient time to search often enough.

The Sample

The approach used for selecting participants was, in Patton’s (1990) terms, purposeful (or purposive) sampling. The strategy for obtaining information-rich cases was purposive, intensity sampling combined with snowball or chain sampling. These strategies ensured that informative responses were received relating to the key areas for exploration. In purposive sampling, information-rich cases are selected for study in depth. Intensity sampling concentrates on selecting information-rich cases ‘that manifest the phenomenon of interest intensely but not extremely’ (Patton 1990, p. 171). Snowball or chain sampling makes use of interviewees that have been brought to a researcher’s attention by other interviewees or people where the interviewee is considered to be a good example or interview subject for study (1990, p. 182).

Selection of sample

As discussed earlier, some interviewees selected for participation in the pilot study were unable to clearly articulate information-seeking behaviour. On some occasions, information-seeking behaviour appeared so limited that it became obvious that some care would need to be taken in selecting participants. For this reason, it was decided to select, for the main study, interviewees who, for one reason or another, were perceived to be information seekers for their research and teaching. It was also decided not to select interviewees with whom the researcher was well-acquainted and with whom he worked on a daily basis. This decision meant excluding colleagues in the areas of library and information science, mathematics and information technology, all part of the researcher’s School at CSU, from the sample. After the exclusion of these colleagues it was decided that, unless potential participants were chosen with consideration of their potential contribution to the research, limited data might be obtained. This concurs with the intensity sampling approach, mentioned above, which involves some prior information and considerable judgement. The researcher must do some exploratory work to determine the nature of the variation in the situation under study. One can then sample intense examples of the phenomenon of interest (Patton 1990, p. 172).

In addition, new cases were chosen for their potential to generate new theory by
extending or deepening the researcher's emergent understanding (and not merely for generalizing the findings of research, as would be the aim with the 'random' sampling more common in experimental and survey research) (Pidgeon 1996, p. 78).

Identification of sample

Initially the Charles Sturt University (1999a) Internal Communications Directory was used to select participants. The first consideration was to achieve a balance between sex, position on the lecturing scale and subject specialty. This aim was to some extent realised, but it was difficult to achieve fully for several reasons. A number of potential participants who were initially approached either refused to be interviewed because of lack of time or because they 'never did these things'. Other participants prevaricated to such an extent that a decision had to be made about whether they should be pursued further in the hope of a positive response, or whether another potential participant should be contacted. It was decided that some help was needed in those subject areas for which it had been difficult to obtain agreement of potential participants to be interviewed or in which knowledge of potentially rich cases of information seekers were hard to identify. Consequently the Administrative Officers in the Schools of Management, Financial Services and Agriculture were approached, in the hope that they might be able to suggest potential active information seekers. This was only partially successful because the researcher was inundated with names of potential participants from the Schools of Management and Financial Services but received only a few names from the School of Agriculture. Eventually the required number of participants was obtained.

While some participants were chosen without any prior knowledge of their information-seeking behaviour, most participants were chosen because of their known or identifiable teaching and research profiles. It was assumed at the commencement of this research that in an academic environment academics could be expected to be information seekers in order to fulfil part of their roles as teachers and researchers. As mentioned above, in considering interviewees for participation in the pilot study it was found in preliminary discussions with them that many academics appeared to undertake little information seeking as part of their work role relating to research and teaching. Small amounts of information, and as a result little data could be ascertained regarding their information-seeking behaviour.
Problems in sample selection

Some participants initially indicated reticence to participate, or were not confident that they could contribute to the research because of their perception of their existing information-seeking behaviour as not of sufficient intensity or organisation to add anything to the study. Some comments received via email, before the study commenced were: 'you will probably find that my “information seeking behaviour” is so antiquated as to prove a major embarrassment, for me at least.' and 'I’ll be one of the information-seeking illiterate’. It was felt that a few participants perceived their information-seeking behaviour as anomalous (individual, different from others and containing special features in their terms perhaps not efficient or good). One participant even said ‘be prepared for some anomalous results’. They were reassured by the researcher that ‘efficient’ or ‘good’ information-seeking behaviour was not a pre-determinate of participating in the study and that it was their personal individual behaviour that was of primary importance.

Additionally some attention was given to selection of a small number of participants who may not be active information seekers, although this was not precisely known. In these cases little was known about their research activity, and they were not prominent in CSU publicity relating to research and publications. This was thought to be a check against assuming that all academics are efficient, motivated information seekers, to include what Pidgeon (1996, p. 78) refers to as negative case analysis.

Sample description

The sample size for this research was determined by what Lincoln and Guba (1985) refer to as reaching informational redundancy. This means that ‘sampling is terminated when no new information is forthcoming from newly sampled units…’ (p. 202). It was found that as the number interviewed approached 30, little new information was generated with each new interview. The following table (Table 1) provides a summary of the age ranges, gender, subject area and their lecturing scale position. Compared to official CSU (Charles Sturt University 1999b) statistics, those staff in the 30-39 and 40-49 age ranges were under-represented in the research while those in the 50-59 year age groups were over-represented. There was also an over-representation of staff at senior lecturer and above. It was not thought that this had a particular impact on the study results. But an obvious observation that could be drawn is that the data could perhaps be
more representative of those who may be considered less likely to have embraced new technology. This was not obvious, however, to the researcher. It was difficult to establish an attitude towards technology that was reflective of age or subject affiliation. This is not surprising given the small sample.

<table>
<thead>
<tr>
<th>Participant Number</th>
<th>Age</th>
<th>Sex</th>
<th>Subject Area</th>
</tr>
</thead>
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<td>M</td>
<td>Health</td>
</tr>
<tr>
<td>2</td>
<td>50-59</td>
<td>M</td>
<td>Agriculture</td>
</tr>
<tr>
<td>3</td>
<td>50-59</td>
<td>F</td>
<td>History</td>
</tr>
<tr>
<td>4</td>
<td>50-59</td>
<td>M</td>
<td>Education</td>
</tr>
<tr>
<td>5</td>
<td>40-49</td>
<td>F</td>
<td>Business</td>
</tr>
<tr>
<td>6</td>
<td>50-59</td>
<td>M</td>
<td>History</td>
</tr>
<tr>
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<td>50-59</td>
<td>M</td>
<td>Science</td>
</tr>
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<td>50-59</td>
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</tr>
<tr>
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<td>30</td>
<td>40-49</td>
<td>M</td>
<td>Education</td>
</tr>
</tbody>
</table>

Table 1: Subject Area, Gender and Age of Participants
Data analysis

Coding and categorising data

In the gathering, coding and analysis of qualitative data this research followed the grounded theory method approach to analysing data and developing theory that has emerged from that data. The method as developed by Glaser and Strauss (1967) and outlined by Pidgeon and Henwood (1996, p. 88) is represented in the following figure:

![Diagram of data analysis process]

The process of categorising and coding data for this research was a continuous process. It did not take place at one particular point in time. The first step involved manual coding of the collected and transcribed (stored) interview data into categories to describe the material. This meant that after transcribing audiotapes of interviews each interview was analysed for subject categories; initially fifty-one individual subject categories and sub-categories were identified. This initial data set of categories was obtained from the first five transcripts supplemented by other data as it became available.
available. Before the final interview and cessation of categorisation, data from the first ten transcripts were again broken into subject categories. The data were checked to see if the assigned categories were truly representative. Revision of these categories as new interview data emerged continually took place with addition of new categories followed by linking of categories and sub-categories and revision of subject categories, if necessary. Some of these categories were later removed when it became obvious that the data from them represented a very insignificant contribution. Gradually a point was reached when new categories were not allocated.

Gradually the data from newer transcripts was added to the file on each subject category. As Hatton (1998, p.1) says, with this type of interviewing the participants provide the categories rather than the interviewer imposing the categories upon the interviewee. Data collection and data analysis occurred simultaneously and new data informed the data collection by enabling the incorporation of new insights and pursuit of additional potential fruitful avenues of enquiry.

At the conclusion of data collection and initial analysis, a more in depth analysis was carried out and writing up of results began. Key concepts were identified and their relationships established.

**Computer assisted analysis**

Following initial manual coding of data into categories the software NUD*IST, used for computer-assisted analysis, was trialed. It was decided however, for the following reasons, to continue manual coding. The number of participants whose transcripts needed analysis was manageable manually. The data analysis was more focused on broad concepts and sub-concepts rather than on single units of analysis such as occurrence of individual words or phrases. This could be achieved effectively manually. It was considered that the time taken to analyse the data using software such as NUD*IST could be more usefully employed in manual evaluation of the data. Relationships within and between transcripts and their categories could quite easily be identified by copying pages representing the same transcripts and keeping these together in a file.
Problems in conducting the research

The greatest problem in conducting this research was the difficulty in obtaining the agreement of some participants to take part. This aspect of the research was extremely time-consuming. This, combined with the surprise refusal of some of the academics approached to participate, created some pressure to select people who might be inclined to take part. The researcher's long period of employment with the University and his knowledge of the research and teaching work of many of the staff assisted in selection of the purposive sample. There could have been a problem arising from this relationship of the researcher to the University in that he already had established views about the issues being explored. This fact highlights the subjective nature of this type of research and supports Saule's view (2000, p. 164) that 'the subjectivity of the researcher cannot be avoided'. Keeping in mind that frames of reference of the researcher would have an impact on this, the researcher made a conscious effort to try and be as open as possible.

Conclusion

The results from the research, carried out with the methods and sample described above, are presented in the next three chapters. These chapters concentrate upon the influence of source, library and librarian image, and affect as keys to motivation in information-seeking behaviour. Throughout all of these chapters the persuasive nature of technology as an underlying influence is brought out.
Overall the academics in the present study were generally adept at identifying what they needed and getting hold of it. (Study finding)

Introduction

This chapter discusses some of the major influences impacting upon information-seeking behaviour with 'source' considered as a key influence. Certain motivators and demotivators influence the degree of use or non-use that a source may receive in information-seeking behaviour. In the context of this study source is considered to embrace such things as the invisible college (including colleagues), journal articles, books, libraries and librarians, the Internet, attendance at conferences and meetings, personal library and personal knowledge and experience (Leckie, Pettigrew and Sylvain 1996, p. 183-184).

There are a number of intervening variables/influences upon source discussed by Leckie, Pettigrew and Sylvain (1996, p. 185), and referred to in Chapter 2, that can affect the information-seeking outcome and may determine the path that information seeking will take. Those identified in this research and specifically discussed in this chapter are accessibility, timeliness and time, and packaging.

It is when we link these intervening variables/influences to sources that we can identify motivators/demotivators, and the reasons for which choices are made in source preference, searching behaviour and search strategies. These influences are similar to Dervin's (1973) and Brown's (1991) barriers and Westbrook's (1997) internal external factors as discussed in Chapter 2, but also include, very specifically, motivators which encourage information seeking.
Dependent upon influences on information need and source use, such as those identified by Leckie, Pettigrew and Sylvain (1996, p. 185), each academic can be identified as having unique information-seeking behaviour. Groups of academics in specific subject areas may have some similarities and may differ by degree but essentially each academic’s behaviour is unique. These differences are discussed by Westbrook (1999). In researching the information-seeking behaviour of academics, this individuality must be recognised. Personal constructs as outlined by Kelly (1963), and discussed in Chapter 2, influence behaviours and give rise to motivators/demotivators. Personal constructs are built up over many years and are not easily explained; many have their roots in the subconscious. Many models put forward to explain and map information-seeking behaviour can only really generalise, and for this reason their use is limited. They sometimes imply simple explanations when there are none.

It can be generally accepted, nevertheless, that there remain a number of constants in the information-seeking behaviour of academics. It could be argued that academics use a wide variety of sources to seek information. Libraries are an obvious source and one that is of central interest in this research. Others include personal libraries of academics and the invisible college, which encompasses conferences and meetings, contact with colleagues and others, both close and distant. These sources have remained constant over several decades, but in more recent years the impact of technology has altered the dynamics between academics and these sources as the nature of accessing some of the sources has changed. Those factors that initially motivated or demotivated information-seeking behaviour in relation to a particular source may have changed in importance to the academic. For example, the library was often relied upon to be central in supplying most of an academic’s information needs, with a visit in person by the academic and mediation with a librarian being the most likely way to obtain information. Missingham and Warne (1999, p. 265) suggest this was the ‘age’ where ‘Single service access from dumb terminals provided limited access to information, gave libraries direct access to information, mediated access for clients through libraries...’. But now some academics who used libraries before may not feel a need to physically visit the library at all, preferring to rely upon library-mounted databases, subscriptions to some remote database supplier, and the Internet, all searched from their office desk. We are now in an age where
the technology, which was once available only in large institutions is now on many desktops, even on home machines. For database vendors this means that online services can be delivered to the end-user... The Internet has become the major information delivery service where clients expect to be able to do much of the searching themselves, as well as getting their documents ‘now’ (Missingham and Warne 1999, p. 266).

The present research focuses upon these points and illustrates that, particularly in recent times, it is not easy to generalise about the information-seeking behaviour of academics. The increasing use of technology has played an essential role in changing the information-seeking behaviour of academics: changes in technology have underpinned most change. But besides technology there are other change factors at play. A variety of changes such the increasing importance of research and budget restrictions on the purchase of new resources have altered the dynamics of the interplay between the sources that academics use to seek information. There are different motivators and demotivators at work relating to different sources that are influencing the paths that information seeking may take. Perceptions of the influences of the path information seeking will take, as identified above by Leckie, Pettigrew and Sylvain (1996), act as motivators/demotivators of information-seeking behaviour. These perceptions are shaped and formed by internal factors such as personality, cognition and existing constructs which have often been influenced by the affective realm. The experiences in the environment and the demands of the situation act on and form these constructs and give rise to motivators/demotivators.

Information-seeking behaviour should be thought of as continuing behaviour, even though the direction of the process may change. Just because a library may be unexpectedly closed or a computer system down, the information-seeking behaviour may merely be displaced by an alternative behaviour to be repeated, reformulated or discarded later. The strength of the motivation will determine which course is chosen.

Electronic accessibility

Another factor identified by Leckie, Pettigrew and Sylvain (1996, p. 185) as having an influence on the path information seeking may take is accessibility. The introduction of electronic access to libraries and to online journals, and World Wide Web material from offices and homes, has enhanced accessibility to information and has brought
suggestions that we are in a new era of digital libraries which undermines the existence of the traditional library. According to Browne (2000, p. 24):

Up to now, we have mostly associated the word [library] with a physical place where people can come to use materials. We hope the libraries of our future will include such places but we must be prepared also to embrace the idea of the library as simply an abstract concept... Libraries of the future are more likely to be virtual and composed of collections of digital information...

This is not surprising given that we are working in a climate of fast-moving research, where importance is placed on the reading of results ... electronic means of communication and dissemination have become so important. E-mail allows fast communication of information between collaborators, speeding up the process of research. The electronic pre-print bulletin boards allow immediate dissemination of results and for information on other projects to be accessed instantly (Barry 1997, p. 237).

The findings of this research suggest that electronic access to the CSU Library appears to be widely accepted and is a motivator deciding whether to engage, or not, in information seeking behaviour. However, depending upon a range of influences discussed below, the degree of motivation or extent of demotivation regarding electronic searching varies. Electronic access, from the office, to catalogues and databases and the full text of documents seems desirable. Nevertheless many academics, while embracing electronic access, have simply added it to their repertoire of information-seeking techniques. It has not replaced their existing behaviour. Electronic access has empowered academics to become more independent information seekers. These findings tend to corroborate those of Barry and Squires (1995, p. 185) that:

From a technology focus a bibliographic database is bound to be used because it provides access to all the journals from the desktop and extremely flexible searching. From a user’s perspective the same database is often seen as time consuming to learn and use, low on the list of priorities with all the academic time pressures, and unnecessary when satisfactory literature exists close to hand in the academic’s personal collection or those of his or her colleagues.
It should also be stated that we are in a transition stage from less librarian-orientated mediation (Missingham and Warne, 1999) in information seeking to more independent information seeking. In terms of the end user, the remarkable amount of research being carried out into improving user interfaces is evidence of this (e.g. Allen 1997, Kuhlthau, 1999). There appear to exist degrees of uptake and use of electronic access, dependent upon a range of factors but most closely linked to those subject areas where one or two databases are readily available and relied upon. The discipline areas of science and business are most representative of this.

Electronic accessibility: science and business

Those who are most motivated about electronic access are typically those working in the science and business areas. As Barry (1997, p. 236, 237) stated:

Unlike the social sciences with its greater diversity of fields of interest, this situation in science produces a requirement for fast information on new developments in research. Waiting for the slow unwieldy journal publication process to go through its cycle is untenable. Pre-prints have traditionally been the primary information source for keeping up to date with the fast moving developments in research, not published journal articles...It is in this climate of fast-moving research, where importance is placed on the reading of results, that electronic means of communication and dissemination have become so important.

Barry (1997, p. 252), for example, found in her study on information seeking in the theoretical physics community that the introduction of electronic access to research material coincided with a drop in the use of the library. This finding was reflected not only among the scientists but also among the business academics who participated in the current study. Their information-seeking behaviour generally appeared to be characterised by reliance on access to a small number of specialised databases. In this study, for five participants who have relied upon Current Contents, on CD-ROM and then online, their information-seeking behaviour has remained predictable for some years. This appears a result of the normal trend for increasing levels of subject specialisation of academics. As the careers of academics progress, the need for up to date information in their often very narrowly focused research areas tends to push their source choices into one or two very specialised databases and/or personal/electronic contact with colleagues. Academics who have spent their career working in these narrowly focused subject areas often have well developed patterns of information-
seeking using one or two sources. One of the main reasons for this lies in what Kuhlthau (1999, p. 6) sees as occurring when subject specialisms of academics develop over time. There develops a relationship between uniqueness (new information) and redundancy (familiar information).

At the beginning of an information-seeking process, for example in the early career of an academic, uniqueness can be expected to be high and redundancy low, whereas at the close of the process, or some years into the career of an academic, this relationship may be reversed. Although Kuhlthau (1999) is specifically referring to the design of information retrieval systems, this approach can be used to explain one of the major reasons why academics seek information from their own personal libraries first, followed by seeking information from colleagues. As perhaps the most familiar information sources to academics, it is logical for them to use those resources first and then move on to those less familiar sources. The uncertainty about the search that an individual experiences in the early stages of the information-seeking process is what Kuhlthau (1999, p. 5-6) calls 'a natural, essential characteristic of information seeking...', although she believes the reduction of uncertainty is not necessarily a primary objective of information seeking. Uncertainty may be associated with high uniqueness and confidence with high redundancy. For example academics who believe that they have a very good grasp of the subject material available in their area may feel confident about a search if the majority of material found during a search is already known about, and hence redundant. Their personal constructs about what they know are confirmed. The same academics may feel a high degree of uncertainty if most of the material found in a subject area they thought they knew well was unique, that is, new information to them. It could also be argued that any successful search for information only increases uncertainty. For the five participants who relied mainly on one electronic means of accessing information, Current Contents, this may be a reflection of the need to keep up to date with new information in a defined area rather than a need to seek more familiar information.

In the present research, for the five participants who had almost total reliance on one specific database, such as Current Contents, for research purposes, familiarity and convenience of an information source are major motivators. As one participant said: 'What I really want is Current Contents to provide the full article so that saves you
having to go to the library' (Participant 17). In terms of a hierarchy of steps in information seeking, the following comment by a participant was found to be generally true for those in the science and business areas:

Journals are probably more important than browsing...subscriptions are much more important than browsing...I would rank Current Contents, then Current Contents again, maybe again, and then journal subscriptions, and then going to the library with a specific aim, and then browsing while I am in the library and whilst I look at some other journals and then direct communication. (Participant 27)

And ‘I have only two sources, Economic Journals Index and secondly, ABI...’ said another participant (Participant 14).

There was a general consensus on the advantages of electronic accessing of the CSU Library's catalogues and databases. The pressures of time combined with the need for information immediately, for some participants, highlighted the reliance on online information sources as this participant said:

I guess increasingly we are relying on online information sources. That's becoming increasingly important to us; to get things quickly; to get it here in the office without having to go somewhere else because time is crucial to us. So we increasingly want access right here at our desk...I'm not sure that we need a library any more... (Participant 7)

For these users, library access and use meant the ability to access information electronically and to use information that was available electronically from their offices. Comments such as: 'my first port of call is on the library home page, and then going to databases and catalogues...' reflect one of the major changes in use of libraries and librarians (Participant 11). Mediation by librarians in the information-seeking process is less important for many academics than it used to be, although the library is still seen as essential for obtaining copies of material for participants. The following comments from a participant illustrate this: 'What I need now is the library to be able to access everything I need as rapidly as possible, and that might mean me saying: "I need this journal article, get it for me quickly" and "I only go to the library to get hard copy"' (Participant 7). There has been an increase in what Missingham and Warne (1999, p. 276) call a need for immediate gratification.
Convenience of access is not the only reason for accessing library resources from office desks. The availability of the Internet from offices has added a new dimension to office-based searching and the interconnectibility of electronic access to multiple sources, including the library, from offices, has heightened the advantages of such means of access. For some participants the ability to initially search from offices, and then use the library, in person, was an efficient means of information seeking. For example:

I guess I just go through the motions of looking things up here first before I go down there. And I think that’s just because it’s easier here, it’s faster, you are not having to compete for terminals and so on. You get it all sorted out [before] going down there and [then] quickly doing what you have to do. (Participant 5)

Electronic office access to the library did not always provide the answer because the information just was not accessible electronically, or an electronic version was not available. As participants commented:

because I can get a lot of stuff right here at my desk, I tend not to think of having to go to the library ... you know, physically walking there, until I am sort of trapped and I need to get some information I can’t seem to get it through my electronic means. I’ll do the walk then and have a look. (Participant 20)

and

If the journals went electronic, and you could download the full paper, then that would obviate the need to go into the library a fair bit of the time. (Participant 2)

Even when one considers the most independent information seeker, perhaps working in the sciences, there is still a need to use traditional library resources. While the gap is closing between electronically available material and that still only available on print, there remains a gap. In a study on the information-seeking behaviour of scientists Brown (1999, p. 929) found that the ‘...primary deficit in library service appeared to be access to electronic bibliographic databases’. The situation is somewhat different in the humanities and social sciences area, which is discussed in the following paragraphs.
Electronic accessibility: social sciences, humanities and education

Academics working in the social science and humanities and education areas are less inclined to rely on access to a small number of specialised databases and up-to-date resources. To some extent the difference between these groups and those in science and business fields relates to less access to information in the social science and humanities/education areas through CSU library electronic databases and the tendency of researchers in the area to rely on a wider range of resources for information. Because there are fewer databases in the social science/humanities and education areas it may be easier for librarians to supply access. According to Sukovic (2000, p. 6) humanities researchers show a marked reluctance to use online databases, perhaps because of some of the deficiencies of these products such as poor subject coverage in the area and lack of retrospective files. The gap between electronically available material and that still only available in print is more pronounced. Because of these differences, it may be less of a challenge for a library to provide electronic information sources to an academic whose research needs can generally be met by access to a small range of databases than to an academic whose research needs require much broader access.

For example, for historians access to primary resources dispersed in several institutions is essential, which means that visits to places where these sources are held are necessary, as the following comments by one participant makes clear:

for things like Australian Archives, you still need to go and look at the physical library documentation. They have moved fairly fast in terms of getting catalogues online, but the material itself is obviously not being published in an electronic format. (Participant 3)

Many more traditional historical resources are becoming available online, but ‘some of the material would lose something by putting it in electronic form’ (Participant 3).

According to this participant:

It is partly the historian’s method in that you often can interpret differently given access to a fuller range of materials that helps you to read between the lines ... if you just have a collection of say, formal departmental memoranda, that’s one thing, but if you have the notes that were scribbled in the margin and incidental comments that were made, sometimes personal comments about particular office bearers, it gives you a lot of insight. (Participant 3)
For academics working in the areas of education and literature, at-hand access to resources held on library shelves is still essential and, for some, a preferred option. While academics in the science and business areas appeared content to rely primarily upon electronic access as the first option, this is reversed for those in education and literature. It is difficult to make too many assumptions as to why this may be the case, apart from greater availability of electronic access in the science and business areas, as discussed above. A range of other factors may play a part, such as personal preference, experience, and lack of familiarity with electronic searching. Schmidt (1999a, p. 93) has suggested:

Differing use of resources by specific disciplines continues. Researchers in the sciences have moved to electronic access more quickly than those in the humanities and social sciences. However resource recovery for all is still serendipitous in many instances and does not use all of the structured approaches available.

There seems little reason to change one's approach to information seeking if it has provided the answers in the past.

Some participants had a clearly defined approach, operating as one participant said: 'through a combination of traditional library material, through electronic, and then people, because they still are to me still the most critical source of material... a lot of the stuff that I am dealing with you don't actually find written down'. Others saw the physical resources in the library of prime importance and 'the first port of call...largely because that's what I have always done...' (Participant 9).

Perhaps more telling about how information seeking is approached by many academics, particularly in the social sciences and humanities, is the following comment highlighting the importance of personal sources:

I teach literature subjects ... the kind of material I am looking for to support lectures and tutorials is background and critical reading ... In the first instance I guess I go to my own books and, and my own library, and I would check with what is in the library here by physically going into the library because I much prefer to go to the library and look through the shelves than just browse things on-line. (Participant 21)
Another general motivator/demotivator is packaging of electronic sources. If the packaging, specifically organisational and presentation features, is perceived as having positive/negative attributes attached to it then academics' choice in information seeking may be influenced. This issue is taken up in the next section.

Packaging: print versus electronic access

In Leckie, Pettigrew and Sylvain's (1996, p. 185) terms, packaging of sources is an influence that may determine the path that information seeking will take.

There appears to be an expectation, or a wish, among many academics that those sources, available both in print form and electronically, should be identical. The meanings of the terms 'electronic version of database' and 'reproduction of entries' created some confusion in the minds of participants: What does electronic version mean? Is it the exact equivalent of the print version? Is it the electronic version without a print equivalent? Is it the print version without the addition of tables and charts and illustrations? Is it a summarised version of the print version? Is it just the abstract of the print version? For example, in the case of print versions of current newspapers and their electronic non-identical counterparts, participants expressed concern: they were interested in using the newspapers for more than the faithfully reproduced main news of the day, which appeared in the electronic version. There still appears some reluctance to accept electronic versions of sources that do not reproduce the print versions exactly.

One participant thought that electronic versions of papers from a specific database in his area, looked 'like a rough working paper...they don’t have the same feel of a professional journal and I always think it kind of downgrades the paper you are reading...it doesn’t feel so professional...'. Barry and Squires (1995, p. 181) reported that dealing with actual books and journals allowed a 'more creative way of thinking than looking at information on the screen'. Schmidt (1999a, p. 91) comments that discussions with academics and researchers at the University of Queensland indicate they want print retained. They are not yet ready for the fully electronic library. While many participants in this study did not comment in any detail upon their use or otherwise of electronic sources, the responses of those who did were influenced by context of their information need, and acceptance of what was available as preferable to lack of access.
Context of information need was a strong determinant regarding the perceived usefulness of electronic sources. If a participant required a paper from a journal for reproduction in study material for students, or for a paper that was being prepared for publication, then an exact copy of that paper was required not one that may have appeared electronically without tables or charts and actual pagination. This supports the findings of Wilson and Walsh (1996, p. 31) who found that 'the use of information is as dependent upon the context of use as information need is dependent upon the situation under which it arises'.

For current awareness purposes the electronic version was often very acceptable especially if it was not readily available in print form. The even wider availability of abstracts of papers and other material electronically, was very acceptable to some participants and increased dramatically the coverage of material they were able to browse:

increasingly I'm just downloading files, collection of abstracts, researches and things, just using those as resources in some instances...I think with abstracts, because of the level of students that I teach, probably I might use 8 abstracts to one full text journal article. (Participant 23)

There was a belief that over time we may see print versions decrease in relation to electronic publications. However for one participant Chemical Abstracts online (CAS) had some indexing difficulties and he relied on the print version to clarify the search terms before going online. Although the CSU Library has ceased subscribing to Chemical Abstracts older copies are being used to check terms but, as one participant pointed out:

We haven't confronted the problem of what happens in 10 years time when they are so old that you can't do that. I guess we have to hope that there will be printed versions around close enough ... that we can still access fast enough, or that the system will have changed... (Participant 7)

In some subject areas, typically medicine, law and business, there is a wide range of material available electronically as mentioned above. But in some areas such as
education, where knowledge of local practice is considered important, electronic coverage is not yet as extensive.

I find that the sort of journals that I read, generally aren’t [available electronically]. The ones that end up on there first are the big education journals, the big ed. research journals...some that I use aren’t large volume type journals and so they are not on there anyway... And of the technology ones [in the education area], there’s three that are, but the vast majority of them aren’t. (Participant 4)

Referring to electronic journals one participant pointed out ‘just because they are electronically available doesn’t necessarily mean we’ve got access to them through the library anyway’ (Participant 4). Several participants mentioned this problem of availability but lack of access through the CSU Library; this is addressed in some detail later in this chapter.

Electronic accessibility: some concluding points

For electronic resource accessibility this study found that overall there was no universally identifiable pattern of the information-seeking behaviour of academics, regardless of the subject discipline. Each academic has different information needs and each information-seeking experience demands a new approach. Nothing is clear-cut. For example, one participant suggested that a colleague was the first step in information seeking and that ‘you get more from that sort of interaction rather than quietly anonymously going to the library or sitting down in front of your computer, and searching for information’ (Participant 12). The same participant admitted later in the interview that he belonged to a private online information service which he regularly accessed and ‘If I am looking for information instead of going and asking the librarian, I would just access the terminal’. Another participant did not use the library in person any less because of the availability of electronic access, but thought that his amount of information searching had declined because of his increased administrative and teaching load:

I am having less time to give to scholarly activity, which would include information seeking and writing information in a scholarly way [but] I use the staff [online]site to access the library and databases that I need, and the catalogue to check on resources for mail package writing, and my own interest. I still go into the library probably every second day and
look through...some of the newspapers. But I still visit the library once a week to try and check the new journal section. (Participant 30)

One participant preferred to go to the library to undertake her electronic searching because:

If I do it from my office I am likely to get timed out or the system goes down or I forget the password ... or it won't print or... I will spend hours getting a search and starring of the items that I want, print them out and nothing happens and I've lost the lot. If something like that happens from my desk, I don't have recourse to anyone else, but if something happens in the library I can go to somebody and get them to help me sort it out. (Participant 22)

At least one third of the number of academics interviewed for this research were reluctant about using the library from their offices. For some this reluctance appeared to be a phenomenon that may go away with a little more practice. But for others the reluctance was the result of other factors such as confidence, deliberate choice not to 'waste time' searching online and other firmly entrenched patterns of information-seeking behaviour that had been found to work. This is supported by Schmidt (1999a, p. 92) who says that: 'There is considerable evidence that researchers remain fixed in time in the research strategies they use'. Academics are less likely to wish to embrace new methods of information-seeking behaviour when they consider their existing methods work well and answer their needs.

Once an academic has a history, a personal collection of literature sources, a network of contacts, and a memory full of theoretical ideas, research and information-seeking stop resembling the simple model. The academic's approach will also depend in part on personality factors, on the preferred research methods, on degrees of ambition and stage in career, on external pressures... (Barry 1995, p. 130).

As Barry (1995, p. 112) points out, much of the knowledge of academics regarding their information and research skills is implicit. They have been doing research for several years and their recollection of their information activity is not necessarily easily retrievable to consciousness for discussion in an interview situation. Another problem is that activity may be available to consciousness but not seen by the participant as information.
...much information acquisition is informal, like chats over lunch with colleagues...or leafing through papers on their desks, and is not seen as "information gathering" but as an everyday part of their working life.

In the present research some participants experienced problems in recalling their information-seeking behaviour, with one responding to a question relating to barriers in his information seeking that he did not have any barriers because he probably now subconsciously found his way round any that might have existed. However generally speaking it was thought that most participants did have a clear idea of their information-seeking activity.

Resource accessibility as a motivator/demotivator

The following sections discuss the accessibility of various resources used by academics in their information seeking.

Limited library resources

Comments such as 'we [the CSU Library] have such a limited collection' were common. One participant thought that the reference material in the library was out of date by the time it hit the shelves and that he had more current information sitting on his own shelves (Participant 18). A combination of factors of the library buying fewer resources, greater amounts of non-subscription material being available on the 'Net, and administrative pressures were creating a greater reliance by academics on their own personal resources. Personal libraries were often seen as resource havens and are discussed later in this chapter.

With cutbacks to materials budgets and increasing prices it has not been easy for academic libraries to fund resources but some academics in this study had an unforgiving attitude to this situation. Comments like 'they may short change their client base by not having subscriptions' and 'it's not good enough to say to the client, well it costs us too much', were made. Another comment from the same participant was 'That's not the client's problem. The client has paid for a service...'. (Participant 19)
The limited range of journals available through the Library does have an effect on participants and their ability to use information. The time lag between requesting inter-library loans and articles and their arrival can interrupt the thought patterns of the information seeker and discourage information seeking. In the words of one participant:

I would be really hot on something, or finish something, and it wasn't there... so I would have to wait and two weeks later it might arrive and ... it would take me time to reconstruct why I wanted it... (Participant 20)

Although the lack of journals, available in print and electronically in the Library, was a concern for most participants, some thought it was the major problem for them in their work as an academic at the University. One was prompted to say:

sometimes it makes me wish I was in another university... because there's nothing worse, being an academic, than having a library which is almost of no use to you whatsoever... What an academic needs is a constant supply of the latest journals, top journals, in his or her discipline, and I haven't got that here... that's how academics nourish themselves, by reading journals and keeping abreast, and that information's not just for research but its also for teaching... (Participant 24)

Another participant referred to the library as 'totally useless' and, when questioned why, he said:

It's useless because we're always told that they've only got a certain amount of budget and so if you put in suggestions for five books, you may get one. And because of that unreliability and uncertainty you can't be unreliable or uncertain... you have to have a certainty when you are writing courses and needing to produce readings... (Participant 26)

Because CSU is a multi-campus university the problems of accessing resources held on other campuses are a major concern for many academics. While the dramatic improvement, in recent years, of electronic access to full-text materials has eased the situation, the problem remains. Material that participants in this study wanted students to have access to was often not housed in the campus library from where the initial purchasing order was made. The expectation on the part of academics that if they ordered material it would be readily available to them and their students was not met.
In the case of journal literature the impact of non-availability of hard copy at the Wagga Wagga Campus had implications for those academics wishing to browse through recent copies of journals. Not only was browsing not available, neither was the checking of bibliographies in the journals, a popular method of finding references. For some academics this necessitated finding alternative means of access which although not totally satisfactory did assist. For example:

that's something that I resent about our library collecting policy...some of the journals that I would most like to have there are actually at another campus...again there are ways around...but it's not always the most easy way...With a cooperative liaison librarian, you can get copies of contents pages...(Participant 3)

But some others did not see such alternatives and resorted to building up and relying more on their own collections. Nevertheless they found access to journal literature frustrating, especially in terms of obtaining ready access to material for their students. Problems for students were often seen as frustrations for academics as the following comment indicates:

I tend to rely more heavily on my own library because it is fairly comprehensive...it is far more accessible when I've got it...it is exceedingly difficult to get stuff on campus here in our library for what I want, without being told it's in Bathurst...it frustrates me beyond belief and the students get really cranky. (Participant 8)

The University Library 'policy' cited by participants that if you wish to add a journal title to the collection you must suggest one to be removed, caused considerable irritation amongst academics. One participant felt moved to comment that this policy does not 'recognise the fact that we never take our courses off, they still run...'. (Participant 4). Another thought that it was a prohibitive process and that they could not devote themselves to reviewing the complete list of journals in their area to get one cancelled. This policy also had ramifications for those academics setting up new subjects, and one participant indicated extreme frustration with the policy:

I had to set up a new course in conjunction with lecturing in electronic commerce, and I wanted to get the new journals that were happening...and there were electronic journals...but you had to
Although some academics had tried at some point in the past to get the journals' collection rationalised in their area, it was thought little success had been achieved. In one example, a substantial attempt to rationalise the serial selection held in the library with those held by other staff members and those held in a neighbouring library, resulted in considerable frustration. A list was produced, presented to the library, and enthusiastically received. But no further response was made and the participant thought '...what's the point of trying this one-way communication, so I just gave up' (Participant 27). Unfortunately these reported responses to such important issues not only influenced the level of coverage of new journals but also may have influenced the perceptions of the library by participants; knowing that specific resources are not available is a psychological and physical demotivator (walk to the library) to information seeking.

Especially vulnerable to resource deprivation were those academics working alone on the Wagga Wagga Campus, or collaboratively with perhaps others in their area working on another campus. One participant reported that he thought there were no journals in her teaching and research area available in the Campus Library or, if there were any, they had gone to another campus.

one of the downsides of being here is that you are information starved in certain areas, certainly in mine you are. You are not able to just literally walk to the library, which you should be able to and source journals, so it makes it difficult to be an actual scholar. You've got to plan ahead differently to other people... You have to send off for them. Sometimes keep a track of the ones you sent off for in case they don't all come back to you, in case they get lost in the post, or they've gone missing, so it's a bloody nuisance at times. (Participant 24)

Not surprisingly most participants complained about the limited resources available from the University Library, believing other university libraries were much better endowed. Inter-library loans were certainly well used and while the participants in this study identified library staff as useful and helpful, those in inter-library loans were rated most highly: 'The only people I use are inter-library loan people' and 'without the people in inter-library loans tracking things down for me, I don't know how I would subscribe...this is ridiculous, there is not enough there in the first place... (Participant 20)
have found them’ and ‘I find our inter-library loan service is just terrific’ (Participant 28). This may be a reflection of the resource deprivation many academics thought they suffered and the relief they felt at being able to rely upon a good inter-library loans service.

Information access and the academic library

Not all academics who have taken advantage of online electronic access to library resources use the library, in person, any less than they did before; their pattern of use has, however, changed. One participant who made extensive use of electronic access, when asked about her current frequency of physical use of the library, replied:

That's probably changed a bit. I still go to the library quite often, but actually no, I don't think I am a less frequent visitor. I think that the time I spend accessing resources from here is an add on. I think I probably visit the library as much as I used to in the past, but I do give more time now to trying to identify things through the computer. (Participant 3)

When asked if she was spending more time searching for information than she did five years ago the response was:

Yes, I think I am. Partly because of the changing nature of the work that I am involved in too. Because I have moved into doing a lot in the online environment, that's been an add on and to some extent it's been at the expense of my research activity, but my research activity hasn't disappeared entirely, so there is probably a greater total of information-seeking time being spent. (Participant 3)

Another participant who considered herself an active personal user of the library thought that ‘certainly in the last 2 years, my work, using the library, has definitely increased, and that really is because of the number and type of documents that I'm able to locate’ (Participant 11). A participant, who again reported greater library use now than 5 years ago, said ‘I am one of the staff from our Faculty who has used the library fairly often. I get books from different campuses ... inter-library loans and journal articles’ (Participant 14). For another participant, reasons for an increase in visiting the library over the past five years, were related to browsing: ‘I like to go at least twice a week to look at the new magazines, new journals and new textbooks’ (Participant 12).
There are many motivators and demotivators that influence whether or not academics will personally visit a library for information-seeking activities. Some of these have been outlined above and others include: seniority of position, whether they are involved in formal study and/or research, the physical distance their offices are from the library; their predisposition to browsing; degree of reliance on journal literature for information; and whether or not they are primarily involved in book-based research.

In relation to seniority of position one senior academic used his secretary and postgraduate students for retrieving library material. He commented that: ‘Occasionally I end up in the library myself, but very occasionally these days’ (Participant 2). This is, of course, common practice, especially with those academics who have access to research assistants.

When academics are undertaking formal study, library use appears to increase and then decrease again when study is completed. As one participant commented:

When I am not doing that sort of research ... I am spending ... a lot less time in the library; ... I have always been a fairly active user of the library, and I guess that stems from the fact I’ve been studying for 12 years... I have to confess that now that I am no longer a student, my time spent in the library has drifted away again; ... I use it about the same as I used it five years ago physically. I had a really intense period of using it for those three years while I was doing my Masters, I used it heaps ...but outside of that, I haven’t done much since. (Participant 5)

Another admitted:

I was in the world of doing a research Masters, and that sort of influenced my whole thing of libraries because all of a sudden I needed to use it a lot more ... I was here to teach ... I didn’t seem to think I needed the library as much because I had my standard texts for my subject, and I had my own personal subscriptions in my practitioner journals and things ... I would refer the students to the library, but I didn’t seem to use it much myself. Then once I started doing my research, that really opened up the world... (Participant 20)

Information seeking using the library, for many participants, was primarily related to information seeking for research; information seeking for teaching was generally more limited. Use of textbooks, one’s own library, one’s colleagues and the Internet would
probably be the extent of information-seeking activity for many academics. As one participant put it:

I would probably call on textbooks to start with and textbooks, which I have set, which I have here in my office or I go to the library to extend that and go into book sources. Then I look at articles depending on the specificity of the issue, how special the issue is, but the tendency is for more books, textbooks and then to articles, and then probably to URLs. (Participant 30)

Some academics are so heavily involved in undergraduate teaching that they have little time for research; there is little motivation for access to material beyond that existing in their personal library.

When information seeking for research is considered the library assumes a more important role; academics are more motivated to use it. Another comment from a participant illustrates this: 'In terms of preparation for the classroom ... I don't use it as much for that purpose as I do for my own research' (Participant 11).

Some participants gave the impression that use of the library was an exception and took place when they ordered texts occasionally and when they were writing a mail package, once every three years. For example:

Due to admin pressures and not having a major research project on at the moment, I tend to only use the library if I've got a mail package to update or research project that I am doing, or I am teaching in an area that I don't know much about. (Participant 22)

Libraries maintained in offices, including personal subscriptions to journals and conference proceedings, usually supplemented most academics information-seeking activities. These sources are discussed below.

Information access and non-library sources

People use a wide range of sources to gain information, and academics are no exception. In addition to use of personal stores of knowledge, the Internet, the news media, the invisible college, and personal libraries are common sources used by academics to seek
information. While this research is interested in the ways academics use non-library sources, it is especially interested in the reasons for these choices and the role of motivators and demotivators in their selection.

For many participants personal libraries were very often used to commence information seeking, before moving on to another source, if necessary. But depending upon the need, the starting point sometimes changed, as with this participant:

there's three mediums I use. One is just using the references contained in existing literature...the first thing I do is go down the bibliography and see what's there ... I would also do a Web search and then the third thing in the process would probably be then to go to the library... The other thing I do a lot of, is browse because ... sometimes I don’t even know what I am actually looking for. (Participant 15)

And rather interestingly this particular participant accessed the library electronically from home rather than from the office, and if in the office, tended to ‘...walk over there rather than use the Web’. In some ways this seems bizarre behaviour but it reinforces the individuality of information-seeking behaviour. The motivation for a walk, to get out of the office, as much as to fulfill an information need or to engage in information-seeking behaviour may be the catalyst for the choice made. The existence of one motivating or demotivating factor often cannot be identified as the main reason influencing the path information seeking may take. Various factors may act together with different intensities.

As already indicated, many academics do not always know what they are looking for and resort to browsing with resultant serendipity (discussed later in this thesis), either on the Web or in person through a personal visit to the library. In one case, a participant said:

Probably my first source would be the Web ... I would jump in there somewhere. Can I find an article on X or Y or Z, or will I just jump into Yahoo? (Participant 19)
In another case the following comment was made: 'I have found a lot of things very fast that way [browsing in the library] ... as opposed to sitting down doing big searches and things on databases' (Participant 20).

**Use of personal libraries**

Incredibly important as a source of information to most academics and as a motivating factor in information seeking, are their own personal libraries. This is because of their convenience of access and familiarity. For many academics it is their primary source of information, which is not surprising, as a key principle of information seeking, given by Harris and Dewdney (1994, p. 125), is that 'people tend to consult sources of help that are close by, convenient and known...we all have a tendency to use the 'easiest' rather than the 'best' resources'. Additionally the personal library also tends to have many of the motivators that Leckie, Pettigrew and Sylvain (1996, p. 185) refer to as influences that may determine the path that information seeking will take; these are familiarity, packaging, timeliness, cost, quality and accessibility.

The nature of personal libraries has however changed from a collection of books and journal subscriptions surrounding academics in their room; the personal library now goes far beyond an academic's four walls. Rather ironically, the personal library, for academics in this 'information age', appears to be taking on a new meaning. It is becoming more virtual as online access to local and international databases and catalogues, and the World Wide Web, personal subscriptions to online journals, information services and journal content alerting services becomes common place.

The personal library is also the first source, and possibly often the only source, for many participants in information seeking:

I tend to rely more heavily on my own library [for information seeking] simply because it is fairly comprehensive, and I've built it up over time ... it is far more accessible when I've got it... I spend a lot of money on my own resources, but I am more than amply repaid in what I get back from the material. (Participant 8)
over the years you build up a pretty fair library of stuff ... so I know what I've

got and I use that quite a bit and continue to add to it ... for teaching ... I guess I

keep up to date by actually writing books. (Participant 2)

Especially for the experienced academic the personal library often naturally represents
the most comprehensive collection of material about an academic's teaching and
research interests. It provides:

material for teaching... It's there. It's been built up from experience and
practice ... If I want new or additional information then I have to go and
look for it. (Participant 8)

and

there's not a great deal in many of the subjects on new material that I'm
teaching, and I usually have quite a range of resources that are readily
accessible in my own library ... (Participant 21)

Personal subscriptions to journals are also a major part of the personal libraries of
academics:

subscriptions to journals and therefore societies...and the journals that
come with that... is very important...It mightn't be if you're in a big city
but I find it's important here. I don't feel isolated. (Participant 28)

As academic libraries have shed journal subscriptions through the 1990's many
academics appear to have responded by deciding to increase or at least maintain their
personal subscriptions and initiating their own means of keeping informed of the latest
information. Increasingly they are a necessity for many academics given the limited
budget available to the CSU Library for journal subscriptions and the desire of many
academics to personally hold copies of the key journals in their area. This is illustrated
by one participant's comments: 'the journals that are most important to me, I subscribe
to, or in some cases, are still physically present [in the library]' (Participant 6). Another
reported that he subscribed to two of the top journals in his field because they were not
available via the Library (Participant 24). This finding is not in keeping with other
studies in which few academics were currently found to hold personal subscriptions to
top journals or personal subscriptions by academics had decreased (Brown 1999, p.
Additionally if participants acted as referees or members of the editorial panels of journals this often meant that complimentary copies of journals found their way into their hands. Overall the academics in the present study were generally adept at identifying what they needed and at getting hold of it.

The use of the term ‘subscription’ should be clarified to distinguish it from the traditional meaning attached to it, discussed above. The word ‘subscription’ has taken on an expanded meaning, embracing as it does now services such as advance notice from publishers, via the Web, which identify the contents of forthcoming journal issues:

you get advanced wording of the contents of the journal ... I read those as they come through and then target specific articles ... Now some of those articles I can access because they are online ... if the library doesn’t subscribe to the journal and ... you want the whole journal, you’ve got to purchase it. (Participant 18)

Also worth noting, as creating opportunities for academics to easily increase their own book collections, is the generosity of publishers in supplying desk copies of texts, especially in the health services area; this enables some academics to have good collections of texts on their shelves. One participant, whose priorities were teaching and administration, was very reliant on texts for information:

I’ve got a lot of new current books over the last six months in the medical ... area, and they just go much broader than what you might deliver in a lecture, but having read the book you are able to elaborate or see where things are going ... as against having read one article. (Participant 13)

While receiving ‘desk copies’ of books from publishers was not a new phenomenon it was an important part of ensuring the currency and usefulness of the personal library.

Extensions to the personal library were the libraries of colleagues available through personal contact. Access was sometimes even extended beyond a colleague’s library to the availability of a wider range of current journals which had been placed by individual academics in meeting rooms where morning/lunch/afternoon breaks were held. One participant spoke of this as something new and exciting:
There's three of us sharing these journals for example, and I think we are going to do that a little bit more. People have been known to throw their journals in the tearoom - on the table in the tea room - so that we've got access to more hard copy journals. I still think a lot of people like to read that way but it costs money...it is interesting to see the number of staff that just sit and browse the journals that are down there over lunch or when they are having their coffee. (Participant 13)

while another lamented the past:

the journal came into the tearoom and so over lunch or morning tea, you said, Oh, there's a new journal, I wonder what's in that? So you'd do that because it's good use of time. When it wasn't there, then the only way you could access that journal was to go to the library which is actually a commitment of time; a much greater commitment than was previously the case, and so you put that into your priority list of whether you went or not. And if you had more urgent things to do or you know, you weren't that fussed about looking at that journal, and you didn't know when it was coming in anyway, then ... you went to the library when you had specific needs rather than really as a browser...that system doesn't exist any longer. People just don't read a lot of the stuff that they used to read. (Participant 2)

But they now see the Web 'as starting to replace that and probably replace it much better, so that you can do it in your own time and not when the journal is there...' (Participant 2).

In summary the shape and role of the personal library is evolving and books still remain as the cornerstone of many collections, especially for those working in the social sciences and humanities areas. Personal journal subscriptions have generally become more important as the amount of information grows and libraries have cut their own journal subscriptions and the need to be up-to-date is even more pressing. Trade information remains important for many groups, such as agricultural scientists, and educationalists who rely on policy documents and curriculum statements and much of this is increasingly available on the World Wide Web. Personal subscriptions to private information companies extend the range of material available, as does the increasing availability of material on the Internet. Government documentation, advance content notification of journals, online journals, often available for no cost, and company trade information can also be retrieved. The power of the academic to obtain more information more rapidly, with little help from intermediaries, cannot be disputed. If one
reflects upon this scenario then it could possibly be deduced that the academic library for academics, as we know it, will continue to serve a more limited, book-seeking clientele, act as a document delivery and supply agency, and maintain access to electronic databases.

This changing role of the personal library has, to some extent, influenced concepts of university libraries. The concept of the university library as holding a store of knowledge has become, for some academics, more one of the accessing library, a means of accessing a store of knowledge; the academic has lost confidence with that surety that used to exist in terms of libraries physically holding what they wanted. As a result, perhaps unconsciously, the academic has sought to become a more independent information seeker. For some such as Lancaster (1999) there are serious downsides to this. Lancaster (p. 50) refers to the academic library as becoming dehumanised and suggests that the 'more specialized the library becomes in the academic world, encouraging remote use, the more dehumanized it becomes'. Coinciding with what could be called the dehumanisation or depersonalisation of library services, has come the increasing ability to access material from one's own office electronically, thereby further adding to the concept of a depersonalised library. In reality this may be an overstatement of the situation but once an information seeker tends to rely more upon their own resources the library, which may indeed still be providing many of these resources electronically, it becomes insignificant as a primary provider of information. The librarian becomes a phantom in a phantom library.

As we have already seen in this chapter a range of motivators and demotivators will influence how the individual will seek information and what sources they will use. In this next section the place the invisible college, another non-library source of information, plays in the information-seeking process for academics at CSU will be discussed.

Use of the invisible college

The term, the invisible college, refers to that amorphous invisible entity that is used to describe the informal and formal networks that connect academics and researchers for exchange of information. Traditionally, interpersonal communication, personal correspondence, telephone calls, conference attendance involving listening to papers and
informal and formal interchange with colleagues, made up the invisible college. More recently the introduction of electronic communication such as email, discussion groups and listservs, has broadened the understanding of the term and enhanced its potential. Katz (2002, p. 31) outlines today's 'invisible college' in the following way:

Thanks in good part to the Internet, and low-cost communication by email, today's "invisible college" is most likely to be through a network channel. Where heretofore one might chat on a phone, now one talks person to person over the Internet, or uses a Listserv or the ubiquitous Usenet discussion group. Meetings are arranged without benefit of conferences; and papers and findings are exchanged without print publication.

This research indicates that the invisible college, in its traditional sense, is still a major force in encouraging academic discourse. Academics still attend conferences and discuss and exchange ideas with fellow delegates at these conferences. They still seek out colleagues for advice and exchange of academic papers. The extension of electronic communication channels into the world of the traditional invisible college has meant that, theoretically, academics have more channels of communication and potentially richer channels of communication, although some of the participants in this research do not appear sure of this. When the information-seeking possibilities of the potentially more dynamic invisible college are combined with the information-seeking possibilities of the potentially more dynamic nature of the personal library, discussed above, the academic could be said to be arguably more self-sufficient in terms of information seeking than ever before.

These channels and the ways they were found to be especially important for academics to communicate with each other, and with personnel in other areas such as industry and government, to obtain information and exchange ideas, are discussed in the following pages.

**Attendance at conferences and meetings**

Most academics manage to attend at least one conference a year and possibly several meetings/workshops. Depending upon academic discipline, some academics are more locationally advantaged than are others and, therefore, more motivated to attend meetings and workshops, especially if local knowledge would be informative to the
academic. For example, those working in agriculture and related areas are more likely to be motivated to attend conferences, workshops and meetings because of the rural location of CSU and the greater likelihood of their availability. But for others the location of CSU was a demotivator and was often expressed as a real problem: 'this is a regional institution and you do feel or find isolation from meetings that are held...' (Participant 28). This issue of isolation is further taken up in Chapter 6. Related issues of cost of attendance and accommodation were also demotivators. Academics working in areas such as marketing, with its international focus and small numbers of academic staff at CSU, in combination with working in a rural area, may have less choice of conferences, workshops and meetings, available locally. For example, one participant, working in the agricultural area, felt able to say, about communicating with colleagues and others:

we meet regularly anyway in conferences and workshops...I use a lot of local knowledge links with...other people...and sort of keep abreast of what's actually going on... (Participant 2)

while, for an academic working in the management area, it was not nearly so easy: 'I can't go to conference every year. It's quite a luxury in this place' (Participant 24) and for a participant in the health services area: 'I attend conferences possibly, probably, less frequently than one a year now' (Participant 23).

The same management academic did manage to often obtain papers presented at conferences by use of his invisible college network. In one case this was by using conference prospectuses to email presenters, and asking for copies of their papers, and in another case:

my colleague from Monash [University] went to a conference in America this year and I got him to send me...a copy of papers from that conference. (Participant 24)

For the academics in this study, virtual conferences and use of other electronic means of communication do not appear to have supplanted the desire to go to 'regular' conferences and meetings. For many participants, conference attendance remained one of their main sources of information for teaching and research. For one participant, it
was valuable as she made contact with publishers' representatives, networked with people and then followed up contact after the conference with emails. For this particular participant, this avenue for information seeking was made especially important because she had often encountered demotivators in previous bouts of information seeking and had chosen this alternative means of finding information (Participant 26). This finding supports the views of Chen and Hernon (1982, p. xiii), also referred to in earlier chapters, who suggest that the consumer of information '...should be viewed ...as an individual, with an information need, who moves fluidly through a variety of information providers until, his or her need is met, or he or she gives up trying'.

For many participants who perceived that they were working in relative isolation, with no other or few academic colleagues working in their area, attendance at conferences provided the best sources of interaction and conference dinners facilitated the creation of some very good networks. For one participant workload increases had contributed to her working less with colleagues as the following segment from her interview relates:

we used to have meetings two or three times a week as a team, and we worked very much as a team. But now half that team are gone and not been replaced, and we are all absolutely flat out just surviving and very often we're taking, rather than two or three of us taking a subject, there's only one of us...So before it [information] was very much from my colleagues. Now only in passing...(Participant 8)

While not a new phenomenon, attendance at conferences and meetings to exchange ideas and information is taking on a new importance, as attendance at such gatherings is becoming less frequent due to variety of reasons, such as cost and electronic communication alternatives. Face to face communication with peers is still seen as an essential part of academic discourse, especially for the academic working in a rural university, as the following indicates:

Talking to each other... is critical, and that's where I try to regularly go to conferences...more of the time is generally spent focusing on some of those issues with people in non formal times at the conferences than what you get out of the formal part. (Participant 4)
Use of electronic communication

Besides contact between academics at conferences, other forms of cooperation between academics at different institutions occur, especially networking electronically and exchanging of information and ideas. Membership of discussion groups, listservs and use of email are widespread, over all academic groups, and the academics in this research found that the electronic communication tended to help reduce feelings of geographical isolation and the resulting intellectual isolation discussed in Chapter 6.

Some of the more imaginative ways in which electronic communication has been used include the case of academics preparing to publish and seeking some international input into their research: 'It's also been useful to bounce the ideas that we're preparing to publish off some of the other experts around the globe, and that's all done through email' (Participant 2). Discussion lists and listservs also appear to be useful for obtaining new information, exchanging ideas and seeking answers to questions. Many academics in the study got a lot of information from membership of a few discussion lists and listservs while some academics used them to pose questions: 'I have used one of the discussion groups I subscribe to...with a general message for information: does anyone know about ...' (Participant 21).

But while the interviewed group found discussion groups and listservs sometimes useful, continued long-term use of them does not appear widespread. Listservs seem often to be enthusiastically embraced and then, as the amount of information obtained becomes redundant (Kuhlthau 1999, p. 6), use tends to taper off. Listservs may initially serve to introduce an academic to a number of people with similar interests but as the benefits of remaining in the listserv are evaluated they may be used as a way to switch the initial contact from the listserv generally to a few people who have been identified as key or useful people.

Typical of the use of discussion groups by academics in this study is the following experience reported by one participant in his use of discussion lists:

When I first joined I probably read it fairly regularly and contributed to a couple of discussions. Probably for the last year or two I would just look at the topics and file it in the delete bin because there's nothing there that really interests me, or it's something that's been discussed before or I've never got the time to get involved. (Participant 23)
This confirms the findings of Barry and Squires (1995, p. 185) who found that:

There seems to be a honeymoon period where the novelty of talking to researchers around the world is exciting. However, increasing frustration with the large daily quantities of (mostly) not very stimulating discussion tends to result in a backlash, often resulting in the academics unsubscribing from the lists.

Some academics in this research were reluctant to use such discussion lists more than infrequently:

sometimes if I have a particularly thorny issue...I have actually put a question to academics on the list...and say does anyone know of any literature or of any information on this particular area. And many people do that, and I've done it say once or twice. I don't like to do it too often because I think that too often is a bit lazy, asking people to do your work for you. But occasionally you just don't know the answers, you need to ask other people and being in Wagga...I am very isolated... (Participant 24)

This expression of a feeling of isolation was made by several participants and was an important motivator and demotivator influencing their choice of sources in information seeking. The issue is further developed in Chapter 6.

Use of personal communication

Personal communication between academics, either face to face, by the telephone or personal correspondence, or through electronic communication is a major means of information seeking, of interchanging ideas, and, as Barry and Squires (1995, p. 181) say, of being creative. Use of email and reading information on the screen, are generally not seen as replacements for face-to-face engagement with colleagues, although the use of discussion groups, for example, goes some way towards engendering creativity. It is well-documented that most people prefer to go, in the first instance, to other people whom they know, to seek information (Chen and Hernon 1982, p. 52-53; Harris and Dewdney 1994, p. 20-27). While much of the information-seeking behaviour carried out by academics in this study can be identified, in Wilson and Walsh's (1996, p.23) terms, as the result of an active or ongoing search for information, ‘it is also found where it is not specifically sought, as an accidental concomitant of routine activities with other purposes or as pure accident’ (P. Wilson 1977, p. 36).
Incidental information acquisition arising from interpersonal interaction with colleagues is important. It assists with the satisfaction of dormant or deferred needs, those needs that arose at some time in the past but had not yet been satisfied. Krikelas (1983, p. 9) refers to this as ‘stimuli are accepted and held in storage to be recalled on demand’. Casual conversations with colleagues seemed to be a useful source for satisfaction of these dormant or deferred needs as well as probably sowing the seeds for such needs.

The academics, in this study, while not generally seeking out other academics as their primary information sources for research and teaching, nevertheless relied on immediate colleagues for information. The incentives to approach colleagues for information varied with need. Some participants placed a heavy reliance on colleagues as key sources of information with one stating:

there are also sources of information in colleagues. I go to my colleagues...I think I feel my colleagues are going to have an answer to something that will take me 10 or 20 minutes to find by going through a computer or going to the library...I go straight to a colleague, because that’s much quicker and easier. (Participant 7)

Another said ‘I use people a lot...sometimes I will just ring somebody I know that knows a fair bit about something and say, where would you suggest I go, what do you think is the best, most recent material on...’ (Participant 8). But a small number of participants were less effusive about using colleagues in information seeking. These responses ranged from ‘If it’s an area that I am pretty familiar with, then most of my information seeking is with other people in the field’ (Participant 2) and ‘Among the [name of specific subject group] as a group, there’s a certain amount of exchange about interesting new titles or what someone’s read in a review journal that someone else may not have seen, so we collaborate in that way’ (Participant 3).

Time and source

Any attempt to understand the selection and use of sources in information-seeking behaviour needs to consider the influence of time. Time plays a multi-faceted role in motivating information-seeking behaviour. In the context of this study time often acts as an independent influence, consciously or subconsciously influencing source use giving
rise to feelings such as 'I do not have the time to do this'. It is also influences what source is used. Some sources often are considered negatively because they are associated with being time-consuming to use. If a particular source is perceived as time-consuming to use or quick and easy to use, this may be enough to motivate or demotivate information-seeking behaviour. This next section evaluates the place that time played in this study in relation to motivating/demotivating information-seeking behaviour.

The concept of time is well understood as a motivator and demotivator of whether an activity or task will be undertaken or not undertaken. Role and task priorities that are often set in the work and home environment, consciously or subconsciously, are usually motivated, to some extent, by time considerations, e.g. can I spend the time or do I have enough time? Time considerations can also be demotivators (Brown 1991, p. 13) to approaching or completing the tasks implicit or inherent in roles. In an academic environment, teaching and research are considered essential roles and, with experience, administration and consulting, are additional roles developed over time. In the work environment, sub-roles and tasks associated with these major roles are often well-defined. But it is also often left to individuals to assign their own priorities depending upon personal preferences and the individual's perceived organisational and personal objectives. Prioritising is very much a part of daily life. It gives it some degree of order and is very much influenced by time. For example, one participant, when asked about his use of the news media on the Internet, which was a relevant question given his subject expertise, replied:

You make a mental list of things you would like to do if you had the time...But I don't think I have time; it's not a very high priority. It would be nice to be able to spend an hour a day reading...but I just don't have the time to do that. (Participant 6)

Within the context of the work environment of an academic perceptions of time can be expected to be a motivator and a demotivator regarding the decision to seek or not to seek information. The extent to which the consideration of time plays a part in prioritising roles and tasks is based upon an individual's internal and external constructs relating to their perception of their work roles and tasks. Internal constructs, for example, might be the personal belief that the University believes that the key activity of
an academic is research and day-to-day activity should be primarily directed to undertaking research. An external construct might be that the University has issued a directive to academic staff to primarily concentrate upon research. Westbrook (1997) suggests people evaluate information in the process of information seeking, most notably in terms of cost, measured in terms of time and money, and effort, measured in terms of convenience and comfort. This measurement of cost may affect a decision to undertake, or once commenced, continue a search for information, i.e. motivate or demotivate the initiation of information seeking.

Missingham and Warne (1999, p. 275) refer to some of these demands, for example, pressures to obtain information faster, and suggest that they may be linked to 'the changing pace of business, study and life, or ‘(mis)perceptions’ about the value and immediacy of information on the Internet'. Time might be perceived as an external factor beyond the control of the user, for example, what are perceived as unreasonable time constraints placed on marking of assignments. It may also be perceived as an external factor that is somewhat in control of the user. For example, an information seeker needs to search for recent information for a new subject and has several weeks to do it. An individual’s personal internal constructs about time is another intervening factor, but it is difficult to evaluate.

The increasing teaching and administrative load identified by many staff, in this study, has seen the amount of time allocated to information seeking and personally visiting the library diminish. Barry and Squires (1995, p. 183) also found this in their research:

All participants report the increasing teaching, administrative and publishing pressures on academic staff, leaving less time for their research (and information) activities. These pressures diminish opportunities for information seeking and force the academics to make do with whatever information is already to hand. In preparing a research proposal, the information need is more likely to be met within the academic’s own collection or that of an easily accessible colleague and less likely to involve formal literature searching, for example on databases.

In this context Barry and Squires also refer to the reluctance of academics to allocate time to learning about information technology. Both the immediacy of fulfilling essential teaching and administrative responsibilities, with one of the participants in the
present research indicating a 20% increase in teaching over the past three years, has meant that his time to control his roles and associated tasks is often driven by other people. As another participant said 'because of the time taken with administrative tasks, the actual amount of time one has to look for information to back up research and teaching is very small'. For some participants, in the present study, the perceived lack of time to allocate to information seeking, while acting as a search demotivator, has also acted as a search motivator. For example, one participant made a conscious decision to allocate time to visit the library and search for information:

You ... are trying to fit in the time to search for information because literally your time is consumed by too many committees and other administrative duties, so you have to kind of put days aside and say, that day I am not going to answer the phone or something, or I am going to go to the library...(Participant 24)

For other participants, visits to the library have been curtailed and are made when time allows. Additionally, the previously more general focus of such visits, which included browsing and more specific planned activities, has altered, as the following indicate:

I had time, locked in one afternoon, once a week,...And by doing that on a regular basis, you kept up and you read, and you saw what was new on the shelves...I haven’t done that for 5 or 6 years because I can’t consistently do that, so often when I go, the library is a bit like the Internet, I mightn’t go to the library for 3 or 4 weeks, then I might go there for half a day or 6 or 7 hours, and so you grab time in quality chunks when you can. (Participant 4)

and

I think five years ago actually, I went then more frequently because I had more time. I used to go in there sometimes to read the newspapers, read magazines, business magazines ... but now I don’t have the time to do that, so I only go in there now for specific purposes which is either to find the article, ask for inter-library loan, or some extra links for students. (Participant 24)

Instant access to many library resources from the office was not an alternative to physically visiting the library for the former participant as the library provided a haven where he could not be reached (Participant 4). Others found visiting the library time-
consuming, given online access from their office and resented the waste of time walking over to pick up requested material. Another saw searching in the library quicker than using the Internet and he preferred to go 'to the library rather than sitting in front of the computer all day' (Participant 14). In general, online access from offices to the library was generally seen as a motivator to information seeking because of the time saved although the system was considered slow at times: 'it's the immediacy of doing that rather than ask someone [in the library]... I can sit down and probably pull it up as quickly as that person can...' (Participant 18). Another participant relied on her 'big pool' of books in her office saying that she tended to 'dive into those first, mostly because of time restraints' (Participant 5). When referring to obtaining papers found on online databases the same participant gave the following comment, 'I guess I just haven't come to the point where I've had the time to get them anyway or that I need to'. In fact the motivation to search has not been strong enough.

Many academics also felt frustrated that they do not have the time to develop database access and Internet skills and had to spend their time just keeping up with teaching:

I feel frustrated, that the time for me to pursue my own scholarly interests and those things seem to be getting less and less and what I am doing is keeping – trying to keep abreast – of my teaching materials and those sorts of things... (Participant 8)

Others found the constant change in systems frustrating and potentially time-consuming these days the library catalogue just seems so complicated and the CD-ROM seems so huge and it takes me so long to sift through them. I think my search strategies still aren't very sophisticated, but it is actually easier to use a person to point me in to some key words that help me think through my search strategies rather than spend six fruitless hours trying to sort things out...I am always forgetting where I've got to put the password in, and what I've got to do here or there or how to print it out...If I don't do it for a couple of months, I am back to square one...(Participant 22)

and

I don't have the time to learn myself yet into another database and how to use it and things like that. I struggle even to sit down at one of the library
computers and play around with databases there. Every time it's an effort. (Participant 27)

Barry and Squires (1995, p. 185) seem to agree when they suggest that a bibliographic database is 'often seen as time consuming to learn and use'.

Some participants restricted their use of listservs. As one participant said, 'it does get time-consuming, and you do have to make some hard choices of which ones you will be involved with...' (Participant 7). Again other participants would not commit themselves to subject-related listservs or withdrew from membership of listservs or usually deleted most messages because of time constraints. For example another participant said 'if you commit yourself to that sort of thing it's more time out of the day...Since I don’t have enough time in the day as it is...I don’t want to do that' (Participant 6).

Time, then, influences choice of source, whether information seeking will take place and the path information seeking may take. It is irrelevant whether an academic's constructions concerning time as a motivator or demotivator to information-seeking activity is accurate or not; it is the perception (constructs) that influences the activity. With increasing administrative and teaching demands being made on academics, there is less time available for information seeking. This situation has forced many academics to focus very carefully on what roles and tasks will take precedence. The influence of time in the daily lives of academics is helping them to reconfigure tasks within their roles, to meet their responsibilities.

In addition to consideration of time in relation to chronology a consideration of timeliness of information is also relevant here. Leckie, Pettigrew and Sylvain (1996, p. 185) refer to timeliness as one of several influences that may determine the path that information seeking will take. Questions such as: 'Is the material up to date?', or, 'Did it come to me just when I wanted it?' may or may not relate to time in a chronological sense. The influence of post-information-seeking demotivation may lead to a perception that the information-seeking behaviour needs to be modified. For example, one may consider the limited relevance of an inter-library loan that arrived two weeks after it was required. Time in this context, if it is a consideration, acts as a demotivator to information seeking, of using an inter-library loan service in the future. CSU Library
was sometimes not chosen by interviewees as a supplier of inter-library loans. This was due to perceptions of the length of time such a loan would take and the potential of using another supplier who it was thought would offer a quicker supply. One participant made this very clear when speaking of efforts to secure a thesis on loan:

I went to the source and had it next day. I think if I had gone through the library, it might have taken maybe a few days, a few weeks, to achieve the same thing...that was an example of something that I knew I wanted and where I could get it, and where I could get it quicker. The alternative is if you don't know who the person is or where they are located, then obviously you go through the library to get access to the thesis and that will, you know, take its course in time. (Participant 2)

The participant in this case may or may not have experienced a delay in inter-library loan service. Alternatively one may consider an inter-library loan that arrived two weeks after it was requested but it arrived at an appropriate time for it to be useful; in other words its arrival was timely with the inter-library loans service in this case acting as a motivating factor in future information seeking.

Another participant lamented the time it took to order and get new material on the library shelves: 'If something is new, especially if it's an Australian publication, I order it for the library, but it is quite a delay in ordering before it hits the shelves, and I've had often the stuff sitting on my shelf for 12 months before we get copies in the library' (Participant 11). With CSU's library collection spread over three campuses the time taken to retrieve material available on the Albury or Bathurst campuses also provided some frustration: 'You make a decision...well, I don't really need it...I tend to just do without, rather than pursue it...' (Participant 23). But this situation may also stimulate greater use of databases to identify resources, 'increasingly I'm just downloading files, collections of abstracts, researches and things, just using those as resources in some instances' (Participant 23). To obtain recent material many participants have bridged time and access to resources factors by obtaining articles by email contact with authors.

Conclusion

One recurring observation is that, on the one hand, there is increasing availability of electronic means of communication – email, discussion lists, listservs and telephone/fax and mobile phone – but on the other, fewer colleagues to discuss ideas with, less
opportunity (because of financial reasons) to attend conferences both in terms of restrictions on time due to increased workloads and of availability of personal and institutional money. The result is that less-directed, serendipitous information-seeking behaviour is giving way to purposive information seeking that is directed, organised. Electronic forms of communication are enhancing information access, although this does not appear to be a universally-held belief, as Lancaster (1999) indicates above. Online resources are becoming more expensive, although there is an increasing amount of free refereed material on the Internet and journal subscription costs have increased along with book prices. There appears to be no way of generally replacing books electronically. Those academics more dependent on books have to rely more on document delivery services, which are hampered by rising delivery costs, as faculties increasingly do not have the money to pay for them, and delays in receipt.

While patterns of information-seeking behaviour have changed and are changing, when we consider the influence of combinations of such factors as those discussed above, it is difficult to predict how quickly the seemingly inexorable push towards primarily electronic information-seeking behaviour will occur. The importance of interpersonal relations in obtaining information cannot be disputed. It is uncertain whether the increasing reliance and push towards an electronic ‘invisible college’ and use of electronic information sources will be sustained at the same rate.

In the following chapter perceptions of library and librarian image and how they act as motivators/demotivators on library use are discussed.
CHAPTER 5

MOTIVATORS/DEMOTIVATORS INFLUENCING INFORMATION-SEEKING BEHAVIOUR: IMAGES OF LIBRARIANS AND LIBRARIES

the importance of image lies not so much in its truth as in its consequences (Grimes 1994, p. 3 cited in Jackson 2000, p. 94).

Introduction

It is perhaps easy for those involved in or connected with what is loosely called the ‘information professions’ to have a view of an academic library as the central hub of an academic community. This was perhaps more true before the impact of technology started to change the emphasis from storage to access. Academic libraries have tried to change their image to their user population in line with the technological changes that they have embraced. This chapter is devoted to consideration of the creation of an image of libraries and librarians. In one way it is not the central focus of this thesis on information-seeking behaviour of academics, but in another way it is similar to the focus on technology that weaves its influence through almost every activity reported by participants in this research. To discuss information-seeking behaviour without discussing the role of libraries would be almost impossible. The very experience academics have had with a library over their lifetime may have influenced their pattern of information-seeking behaviour. Experience of sources, as outlined in Chapter 4 influences use made of other sources. Libraries are one of the sources available for selection by academics. A discussion of how they are perceived by the members of their community is important to the understanding of their role in the information-seeking process.

Considerable attention over a long period of time has been given in the literature to the image of librarians. For example, Jackson (2000, p. 95), in relation to academic librarians, referred to the concern of librarians about their status, their feelings of being undervalued and ‘characterized as “passive gatekeepers” and guardians of books’.
Potentially disturbing, in the light of reports of the image of librarians changing from custodian to technologically aware and active partner in the education process (Schmidt 1999a, 1999b; Missingham and Warne 1999), is Jackson’s (2000, p. 95) comment that

It does not follow that because librarians consider themselves to be in the cutting edge of developing and applying new information technologies that the old image has automatically changed.

Biddiscombe (2000, p. 63) suggests that 'on an individual basis the work may be appreciated, but the sum total of individual user satisfaction over the centuries has not added up to a public perception of a dynamic profession'. Todd, Houghton and Poston-Anderson (1997), in a consultancy report to the Australian Library and Information Association on image of library workers and libraries, point to the negative image portrayed of them in the literature. They suggest that:

The literature provides evidence that perceptions of the image are born in people’s interactions with librarians, whether these experiences are real, or vicariously experienced through media and literature portrayals, or through social learning (p. 3).

Rather less attention has been given to the image of libraries, which has been largely defined, in general terms, according to what has been seen as their major role, notably storage and preservation or access. Nitecki (1993, p. 272-273 cited in Jackson 2000, p. 96) found that faculty took a 'myopic view of the library as a location, a storehouse collecting and preserving information and providing access to information for their own research'. The librarians were not found to be visible. Academic librarians have been convinced of the need to educate users in the use of the library and the role of the librarian in the educative process. However it appears that only a minority of academics are supportive (Biddiscombe 2000, p. 73).

Much has been made of the new information technologies as the catalyst for launching librarians as knowledge navigators, recasting the academic library from a storehouse into a dynamic institution bringing academic and librarian together as essential ingredients in an equal education partnership. But Jackson (2000, p. 99) questions whether this 'info-tech' model is enough to facilitate this change. Biddiscombe (2000, p. 70) thinks it is and says:
The traditional library and information skills were rarely acknowledged because of their unimportance economically, but now they have been transformed by IT, their value is more evident... the stereotypical image of dowdy librarians should be set to improve.

This chapter reports upon the image perceptions of the participants in this study regarding libraries and librarians. For all participants interaction or lack of interaction, over a lifetime, with libraries and librarians, in addition to other factors, constructed their current image. The extent to which their library or librarian image reflected their experience with CSU Library is impossible to know. The construction of the image is complex and the result of a range of experiences, old and new and their interplay. Nevertheless from the comments most participants made regarding their use of CSU Library, as indicated in this chapter, their current image relating to libraries and librarians was strongly influenced by use of CSU Library. The image of the library as an important institution in an academic’s information-seeking process remains.

Taking into account the foregoing there does not appear to be a clear picture as to whether the introduction of information technology will improve the image of librarians in the way they would like to be seen in their new roles, as no longer guardians of collections, but providers of ‘the interface between the information and those who need it’ (Schmidt 1999b, p. 20). In this thesis technology is seen as a significant intervening influence that affects image creation but it is not the only one. There are several other intervening influences at work.

The construction of the image of a library may be influenced by experience with libraries and/or librarians. The affective realm as it interacts with library/librarian experience creates new image constructs which in turn motivate or demotivate information-seeking behaviour. The stimulus to image creation may not have been the result of direct first-hand contact with a library or a librarian, it may have been constructed from a secondary source such as the media, colleagues, and friends. These motivating/demotivating experiences help to create an image. They are also likely to be linked to library use as it changes over time with each new experience.
Construction of a library image

Positive or negative experiences of an institution such as a library will influence construction of an image of that institution. Experience has a strong effect on creation of personal constructs (image formation) and the creation of motivators/demotivators to information seeking. However these constructs are forever changing as new experiences change and create new personal constructs and alter the personal constructs individuals have. This research found that the attitude of academics towards the CSU Library and libraries in general was embedded in experiences, both past and present, and that, while this was the major motivator in terms of if, how and when the library was used, or the path information seeking might take, other motivators also played a part. Personality and preferred learning styles of the participants might also influence whether information-seeking behaviour was commenced or not. Additionally the strength of the information need was important. If it was seen as important to satisfy, this may act as the strongest motivator overriding any other demotivators. An information need that was seen as less important to satisfy may not be activated because the demotivators were too strong. The decision whether or not to activate an information need was influenced by the perceptions of the academic of their roles and responsibilities in the University.

In addition, with change in role expectations of academics, as the University has begun to orientate itself towards a more intensive research culture at the same time as declining resources and increasing student workloads for staff, there appears to have been a change in the intensity of information-seeking behaviour. As one participant commented:

from about 1990 onwards, we had a frontal lobotomy or something and off we went doing research and it just sort of boomed and to do that you’ve got to gather all this information and the library had to change and the data gathering changed and technology came in with all the computers and so on, and it all started to come together. The last 10 years have been absolute mayhem...no research was done until I did one paper in middle 1983 or 1984, and then nothing through to 1991...In that time it [has] just blasted off...20 something [papers] (Participant 28).

This change in research culture is not unique to CSU. According to Biddiscombe (2000, p. 77): ‘The pressures on all academic staff to improve their research performance at a
time of increasing numbers of students and reduced levels of resources makes further reliance on information professionals inevitable. A whole variety of factors play a part including these other factors mentioned above.

These include many characteristics internal to the participant such as personality (Heinstrom, 2000) and preferred learning styles. Todd (1997, p. 354-355) refers to these as ‘frames of reference’ and talks about them as contributors to information utilisation. Included as frames of reference are internal influences such as:

attitudes, values and norms; goals and commitments; dimensions of the information concern; cognitive style; motivations; assumptions; conventions, and premises; personalities and dispositions towards certain rules such as truth tests and tests of relevance.

and external influences

such as situationality; qualities of information and characteristics of sources of information such as credibility of source, authority or tradition; and relationship of information to established attitudes and situations.

Some of the motivators and demotivators influencing the path information-seeking behaviour may take have already been discussed. In relation to library use various factors sometimes appear to combine to motivate or demotivate people to use the library. For example, for one participant, previous experience, technology, time and physical location of the library appeared to combine to influence the following attitude:

The facilities sometimes don’t encourage you to seek information. So I will try and find a quicker, shorter - a short cut - rather than be exposed to having to go all the way down to the library, or I persuade myself that it’s not terribly important sometimes...you think, well have I really got an hour to spend. I want to go down there, I want to look up these three books and come back. And you get down there and you find that the books either aren’t there or something happens or that machine doesn’t work today, or they’re having problems with something else, or something happens, and that’s really awful. I hate that. So you try and avoid that...the rate of technology is off-putting too, because just when you think you’ve got that wrapped up and you can do that, it’s changed, or they go about it in another way. (Participant 26)
Library/librarian images

In an attempt to help understand the motivators/demotivators influencing the use or non-use of libraries the participants in this research were prompted during their interviews, if their general responses did not cover the area, to discuss their image of libraries and/or librarians. Although not specifically identified as a focus, participants generally assumed that discussion should centre on CSU Library. The responses represented a wide spectrum of experiences, and provided an indication that images, for most participants, were not immutable but subject to change based on new experiences.

In general an image of libraries as places of learning, providers of access to a range of material, and helpful staff seems to have been generally accepted. The image of a library as primarily a repository, which goes back to ancient times, was very prevalent. As the following indicates, formation of this repository image, for some, goes back to PhD days. One very self-sufficient information seeker offered the following reflective image of libraries:

as a PhD student back in the late seventies doing it what I now call the hard way, which is file cards, going to the library, searching through indexes, photocopying books, things like Dissertation Abstracts International...really spending considerable time doing that, and then abstracting information out of that...I spent the best part of a year doing that for my Doctorate before I could do empirical research assignments. And I look back on that now, and it's probably given me an appreciation of libraries in the sense that just the repositories that they were and how you can garner information and how valuable that information was, but also an appreciation of how much time...you actually spent, where these days I could probably do what I did then in the space of two weeks, where it took me a whole year. (Participant 18)

To the same participant, the term library now also conjures up an image of a physical or electronic repository where electronic access is available. That repository may take the form of a library, a book shop such as Amazon.com, or a place where online journals are available privately because of personal editorial responsibilities, or through commercial subscriptions, or through access to a library with its own subscriptions. The 'library' is, in the mind of this user, synonymous with the term repository. For some participants the CSU Library is just a place to access local or remote collections of material via the
home page with a ‘library’, defined as a place, holding details of collections or collections themselves. The image of the library as a repository is still a strong one, even if this is now in more abstract terms because of the extent of electronic access now possible, although ‘the weight of the research collections are still measured in tons rather than megabytes’ (Biddiscombe 2000, p.65). For many, the image of CSU Library is seen in a variety of contexts, both electronic and physical, in terms of access to resources. It is, however, also seen in other perspectives such as somewhere where help can be obtained, browsing can be done and an escape from the office can be achieved. For participants, the library is both a repository and an access point to a repository.

Another participant, who also referred back to the days of his PhD candidacy, said ‘I don’t really have so much of an image of a library per se, rather an image of librarians’. As a student

you could just about get anything you wished ... there was a librarian that had been there for 25 years and she knew just anything and she could get me reprints of journals not even the main libraries in the major cities would be able to get... (Participant 27)

The image held by this participant seemed to be constructed out of experience with one librarian who was able to retrieve for him what was wanted. Librarians are still judged, by this participant, by ‘their ability...to get the things you want...’, although the ability of librarians to suggest different search strategies was also considered useful. The image seems little changed from the repository idea expressed earlier, even though the focus was the person not the institution.

A wide range of views was obtained representing a whole spectrum of attitudes, feelings, and beliefs about what a library, in an academic setting, was and/or should be. The following discussion focuses upon those factors identified in the research, which assisted in formation of image constructs regarding the library and librarians. The experience of technology, in recent years, appeared to be an important influence on whether participants formed a current image of libraries, while other experiences, gained especially during a period of study were also significant. In response to a prompt, ‘Has your image of libraries changed say over the last five years from what it might have been?’, some participants indicated either no prior images of libraries or weak images.
One participant said ‘I don’t know because I didn’t have an image of libraries’ (Participant 27). But, for those who did have a prior image, perhaps the most obvious influence is technology in changing that earlier image of librarians and libraries in the minds of users. Sometimes it was not easy to separate images of library from images of the librarian. It should be noted that the view of technology is as it is in the 1990s not as it was in the 1970s and 1980s with OPACS and CD-ROMS.

Technology and library image transformation

Libraries, for most participants, appear to have moved from a sometimes inaccessible repository, pre-1970s image, to an institution still providing a repository but dramatically increased accessibility because of the World Wide Web, and the Internet; there does not appear to have been an interregnum. For participants the library has changed:

it's changed from what I think of as a much more traditional print based place, to one where electronic resources are incorporated and students have easy access to online resources and Internet, and certainly as far as library staff are concerned and the people I have contact with, that change has been reflected there too. (Participant 3)

A perception that the Library now had users searching for information and that it was recently transformed into a place of activity, was also held:

the difference between now and five years ago, is that there are people actually using [the library]...There’s activity around the computer terminals. I mean people are searching. Five years ago...the searchers just weren’t there... (Participant 15)

It was now more than books and journals:

I think probably when I was an undergraduate student, you sort of tended to view libraries as being collections of books and journals...and not so much on searching, using databases and so on...I think with the increasing use of the Internet...I am looking forward to the day when a lot more of our journals are accessible online... (Participant 23)

But perhaps a more crucial question is: Has this change in image, either of librarians or libraries prompted a change in use of libraries or librarians? One participant, who was
not a less frequent library visitor than before, saw the ability to access and identify resources from his/her offices as an add-on and gave ‘more time to trying to identify things through the computer’ (Participant 3). The same participant saw it as important that the liaison librarian keep abreast of technological change, incorporate it into supplementary teaching, and give help in identifying valuable resources from Web sites. But the fundamental way in which she viewed libraries had not changed:

There is no great sort of gap between where I think they should be and where they are. If that hadn’t happened and the library hadn’t incorporated the technological change then my view might be very different. (Participant 3)

Libraries, for this participant, had changed with the times and the positive way in which she had always viewed them had not altered, although her means of access had changed. ‘Access’ was a key word used in discussing how libraries had changed, with increasing use of technology, over the past 5 or more years. One participant in fact talked about the ‘accessing library’. But technology, although facilitating access to resources not otherwise obtainable, had not necessarily changed, as one participant said, ‘my view of libraries per se’ (Participant 19). Other participants saw technological developments in library services as not especially dramatic; they were seen as ‘an additional add-on rather than a fundamental change to the nature of libraries’ (Participant 4). The library was ‘still the place with the books and the journals and the newspapers, and the staff to help you to find them...’ (Participant 9). The advantages of accessing hard copy were especially important for other participants as well and seemed to be considered more important than improved technological access by some:

I have the same amount of respect for libraries and technology has not changed my attitude towards the library. The library has always been a critical source of information to me...it provides a hard copy...which you can take home and read while you are lying on the bed, or on Sunday afternoon or Saturday afternoon while your kids are playing sports... (Participant 14)

It seemed all of the academics interviewed were impressed with the changes technology has made to the provision of information services and resources. But it seems that for at least a half of the participants technology has not played a major role in changing personal images of libraries. Technology was perceived as important but not as the sole
influence in changing their image of a library. The following section discusses the extent to which librarians influenced image creation. As with libraries, it was hard to find any shared image of librarians amongst the responses. To some extent the traditional image of librarians as keepers and controllers of the books remained.

Librarian images held by participants

For some participants technology, as discussed in this chapter, has seen improved access to resources with improved image of librarians as a concomitant. For others, their image of librarians has not changed. The following images of librarians were identified, and are discussed in more detail below:

- Librarian as Keeper of the Collection
- Librarian as Creator of Independent User
- Librarian as ‘Knowledge Navigator’
- Librarian as Information Technician
- Librarian as Document Deliverer
- Librarian as Educator of Academics
- Librarian as Educator of Students
- Librarian as Interactive Partner – filterers and evaluators
- Librarian as Information Provider

Images of the librarian as organiser of collections, including facilitator of electronic access, and collection developer were hardly mentioned by participants. This study did not establish whether or not these roles were considered, or whether they were roles that were taken for granted. Librarians, however, were seen as responsible for collection maintenance, i.e. as keepers of the collection.

Librarian as keeper of the collection

As mentioned above, the academics in this research seemed not to separate easily ‘librarian’ and ‘library’ in the discussion of their perceived image of either. The storehouse/keeper images were alive and well in the minds of several participants, as the following comments illustrate:
Basically the problem I have with some librarians is that [they] have the view that people coming to libraries is actually just a pain in the neck. Libraries are great places to store and catalogue but not necessarily for people to use too much, because it messes up their shelves... (Participant 4)

There is a stereotype alright of a librarian which goes back a long way, and so people might still be around who are off putting... their primary role is just to guard the materials and not let any of those bloody clients use them. And they do exist. (Participant 9)

It's almost like crown land... where you come and look at the stuff and admire it, but for God's sake don't touch it... it's almost like a sanctuary, a shrine, rather than as a place for accessing information... a place of information and learning. (Participant 19)

These comments are more surprising when one considers that the academics behind them are active users of libraries and their collections, both in person and through electronic access.

**Librarian as creator of independent user**

Views of libraries and librarians, such as those referred to above, have most likely been in some way responsible for demotivating direct physical contact with librarians and libraries. However it is obvious that, for many academics, the need to physically use a library to access resources has been reduced because of a gradual increase in the ability to access library resources from their offices. The increased emphasis by librarians on becoming more central to the teaching process, e.g. by expanding traditional reader education classes, conducting classes on Internet and World Wide Web use, also appears to have increased the number of library users. For these, especially those working in the science area, improved access is associated with increasing independence in accessing resources, and the relegation of more routine activities to non professional library staff, perhaps bypassing the professional librarian. The following responses reflect an increasing self-reliance on the part of academics and an increasing degree of confidence with their own ability as information seekers, without requiring the input of an intermediary such as a librarian.

The approach of this participant, an older academic working in the science area, has changed:
library would have been the first port of call for information; probably your only port of call other than colleagues... Now it would become... the final port of call. There are so many other things, which you try first because you can access it faster, more easily sitting at your computer. There are many journals now that I can access online, so if I know what I am looking for I will go straight to that. If I want to browse, and I have less and less time for browsing – it is now much more focused and directed – then it will be the library. (Participant 7)

The following participant, a confident and relatively young academic working in the health area, related the following experience:

I suppose when I was first here at the University I wasn’t very information literate as far as my ability to find information quickly... so I used the librarians to help me find, do searches... probably a half a dozen times. But now I find it relatively easy just to use the Web browsers, to use the telnet applications and things... that I need to do the searches myself, so the only things I really use the library staff for are when I’ve got to check stuff out of the library... I mean these days with the technology, you just do it yourself, so their role in probably finding information for me is not necessary... (Participant 23)

These two participants, working in areas where information access is well developed and comparatively easy, probably represent the archetypal independent user.

Librarian as ‘knowledge navigator’

The introduction of technology appeared to have influenced some respondents in constructing and reconstructing their image of a librarian and library, and many academics viewed librarians as more ‘professional’. In the minds of some participants technology appeared to have given librarians a new respectability; their reason for existence was now thought to be clearer. Technology provided access to resources and librarians had come to be seen as the facilitators of that access. The following is representative of this view:

I often sort of wondered what they did... I guess it was almost a matter of cataloguing and filing before with a little bit of accessing information. Now it’s more to my mind, not just cataloguing which sounds pretty boring... they’re much more skilled if you like now, or have to develop the skills, in accessing... information electronically and they know how to locate it for you. But there are so many different places you can find it
They can develop those skills and I do rely upon them if I can't find something. (Participant 28)

The view of a library as a ‘place of information’ seems to have been transformed for many into ‘sources of how to access information’ and librarians are seen an important link in the process of identifying and gathering resources.

Some participants saw librarians as being much more ‘information literate’ and ‘technologically literate’ than previously; librarians appear to have become useful. The following comments are representative of that view:

I have a perception of them changing in the sense that they are simply much more information literate themselves whereas in the past I suppose my impression of librarians was basically they were the staff that put the books on the shelves ... Now we have an expectation that they would know how to access the information for me. (Participant 15)

I see librarians as much more expert now than I did once...as professional people who are technologically literate in ways that I am not always technologically literate, so it increases my sense of the professionalism of libraries...libraries are changing quite significantly, visibly and significantly, in terms of providing access to encourage greater use of electronic networks and information retrieval systems...I think that in the past, I mean it may be five years, this might be a fifteen or twenty year perception, I thought of librarians as kind of custodians and largely sort of passive, where I am less inclined to [now]. (Participant 21)

Others see librarians as much more ‘professional’ and libraries as being designed for people now, although for one participant his/her view of libraries and librarians had not changed:

I don't think it has changed terribly much. I've always been positive around people who were interested in ideas and particularly words, books, documents...the person. (Participant 30)

Another participant put it more succinctly ‘...I see them more in my eyes now as not someone that I go over and visit, but someone who sort of seems to seek out information for me and provides it to me and advises’ (Participant 20).
Librarians are increasingly seen as the creative link between users and the sources of information:

...technology's changed that perception...they are more professional, or they appear to be more professional now than they would have been five years, or 10 years ago, which I suppose presumably is what comes of librarianship coming into the higher educational arena. (Participant 15)

I thought librarians were pretty boring people doing very mundane tasks but now I realise that their job is quite dynamic...They must be at the cutting edge in this information revolution ...the culture's changing whereby the library itself is being designed more...for people...the librarians seem to look a little bit more friendly at times...they are trying to be more customer focused. (Participant 24)

On the other hand, among some very independent and experienced electronic searchers there appeared to be emerging a preference to consult people with technological skills in searching rather than professionals with information-seeking skills:

It's probably got to the stage now that if I've got a problem or an issue I wouldn't consult a librarian...What I would do is try and solve it myself in terms of either accessing another database...or probably accessing someone with a kind of info-tech background as opposed to a librarian, someone who kind of surfs the net every day sort of thing and says, look, have you seen this or that resource. (Participant 18)

Nevertheless the librarian has been seen to become more of a knowledge navigator, identifying, filtering, evaluating and adding value to information for many participants. An image of them as assisting with technical skills is also prevalent.

**Librarian as information technician**

The improvements in interface design, in conjunction with developments in electronic access, could be said to have reduced the need for the librarian to act as an intermediary (see ‘Librarian as information provider’ below). Nevertheless, this role is still an essential one and it has become multi-faceted with librarians now sometimes also seen as information technicians, who have ‘technical’ access to resources as a major function, rather than as a knowledge navigator. The following excerpts from transcripts give some insight into these perceptions:
Now you need so many of these extra skills besides being able to read and have an idea of where to go... You need so much more than that if you are going to get the amount of information that seems to be expected in a lot of areas...they have to spend so much time developing their skills, so that they are becoming very skilled at what they do...the skills are about processes of doing rather than necessarily the skilled knowing. (Participant 8)

Perhaps in sympathy with this participant the following participant’s view of change illustrates how the library has moved, for some, from a place of culture and learning and academic dialogue to one where access to information is its primary raison d’être:

their lives are very much driven by technology and they tend to rely more now on the Internet, contact with other libraries... But I think it is very much a technology driven system. Probably 5 years ago I think we had more time to chat with the librarian and to work through some strategies. It was probably more casual, there wasn’t the speed, the demand to get things done quickly. There’s a rush, rush, rush with the current system. It means now you don’t have time to sort of sit down and talk through the issues in any ways. We just want this done, and I want it done now. I think the time’s just a big factor. Work pressures have meant that the library is rarely used now...it’s a giant computer, where previously it was probably a meeting place for discussion. (Participant 30)

**Librarian as document deliverer**

A strong image of library service for some participants resided in the staff and services of document delivery:

The staff has been so good and without the people in inter-library loans tracking things down for me, I don’t know how I would have found them. (Participant 11)

The most positive comments regarding librarians were about the librarians in document delivery. This high degree of satisfaction seemed to be linked to what was seen as ‘helpful’ and ‘friendly’ staff and satisfaction of requirements, that is delivery of material into the hands of the academic within a timeframe deemed to be excellent. This high degree of satisfaction may also be related to the fact that at times there were low expectations of actually being supplied with the required documents in an appropriate timeframe.
Librarian as educator of academics

In addition to the creation of independent users who may not need the presence of an intermediary to access information, many participants discussed what they considered to be the role of the CSU Library in information provision and educating users. They were also prompted to discuss the ways in which the CSU Library could better serve their needs. Instruction on the use of the library and its collections, through workshops, providing resources, accessing electronic databases, informing of the existence of resources and use of the Internet were all seen as important roles of the library staff.

I view the librarian as someone who’s on top of the service...by providing resources and helping those who aren’t familiar with how a library works...making sure we know how to use it properly and efficiently and...its potential - and I don’t think I am probably using it to its potential - and in providing a service and being there to support our information seeking. (Participant 17)

However some participants, whose access to library-based information was intermittent, wanted help when they needed it, rather than to be educated in library use.

When I get into the library I don’t want to spend my valuable four hours spending an hour and a half on trial and error trying to find stuff. I would go to a librarian and say tell me how to get what I want as quickly as possible thanks...I don’t use it often enough on a regular basis to know the routines and the more sophisticated ways of getting into databases. (Participant 4)

On the other hand about half of the participants saw librarians as part of the educative process and seemed to appreciate the attempts to ‘inform’ the users:

I go to most of the workshops which are run by the library, particularly those involving the Web...I think that’s one of the good things libraries have done...I actually see them as part of the education process. (Participant 15)

He or she may inform me. I may not know it’s there, but once I know it’s there, then I can go and do it. I don’t expect someone else to go and do something that I am capable of doing myself. (Participant 19)
It seems open to conjecture, however, as to whether many academics see the librarian as more of a knowledge navigator, as discussed earlier, or 'someone who is probably more skilled, more rounded and has that sort of mechanical, technological skill' (Participant 30). One participant put it this way:

The role of the librarians [I believe] are new technologies and to provide concrete ways in which the new technologies have relevance for the disciplines...there's a very clear educative role now because technology is changing so rapidly, that part of the information sharing is not just of the resources, but the processes for retrieval and ways in which things can be done in that sense...(Participant 21)

Another participant who was motivated to seek assistance from someone with a knowledge of technology first rather than a knowledge of library science first, said:

I have confidence in going to people who've got a good grasp on the technology because that's where my queries usually are, but it's not a kind of technical issue in terms of how to work the computer; it's really saying people who've got a background in knowing what is available in relation to say, access of things from information technology. (Participant 18)

This participant, very much an independent user and a voracious information seeker, viewed the technological knowledge of librarians as inadequate. But a more prevalent view was the one where technology in libraries was seen by many users to be the catalyst for needing assistance with information provision and education in library use: 'maybe it makes me less reliant on them and I can bypass them more effectively, but I still need them because with changing technology I need somebody that knows' (Participant 26).

**Librarian as educator of students**

Almost a quarter of participants saw the use of the library primarily in terms of what their students needed to know and their formation of library image was influenced by how the library was perceived to be servicing students. The technological expertise of the librarians was seen to be crucial in teaching students how to use the library as the following indicates:
The information is now mostly electronic and I don’t have the expertise to teach my students how to use that nearly as well as what the library does. So it is better if the library does it... (Participant 22) with the development of information technology, a librarian should be central to the teaching process... librarians should essentially be involved in the whole process of encouraging, creating information literate students. It’s not just simply an academic’s job. (Participant 15)

I found myself turning into an instructor on how to get information, and that is not my expertise... students who did have problems with that particular technology or information searching area, she [the librarian] took over for me... that was good from a teaching point of view... (Participant 20)

Interestingly the way students were treated by the library staff influenced the view of academics towards the library. The following is representative of some of the views of the academics in this study:

students have often found librarians very impatient and unapproachable and that I find disappointing because I am always encouraging them to go to the library and I am always saying how helpful the librarians have been and how helpful they are, and that is not the feedback that comes back from students... That is disappointing because we are trying to encourage information seeking in students and make it a positive experience, and if it’s not a positive experience then I can’t really blame them. And I think student support is probably just as, if not more, important than staff support in the library... Probably the students that have struck me as not using the library, have been sort of uncomfortable with using the library... when I’ve asked someone who didn’t know me [in the library], I assumed they thought I was a student, I didn’t get the same sort of treatment, no. (Participant 17)

*Librarian as interactive partner – filters and evaluators*

There was a mood among several participants that the library/librarian had moved from ‘a passive resource that I went to get information for my teaching and my research’ to ‘a much more active partner in that process’ (Participant 22). The following is an excellent example of this ‘interactive partnership’ embodying the essential responsibilities of a librarian towards their users, as seen by users.

They are always giving me – sending out information to me, which is great, about how I can connect things online for my students. I seem to be working a lot closer with them now... not necessarily just giving me some inter-library loans for my research... I see their role not as sort of a
separate distinct thing that I will go to when I feel I have the need to. It’s more of an interactive partnership where they push out...information to me...they are making me aware of new services and things that are available, and teaching me, giving me some instruction on how to access...and also being a bit of a sorter of information for me...(Participant 20)

Others referred to the role the librarians played in filtering information on the Internet:

That would be an important role for the librarian because there’s so much information, so much knowledge out there, that no one person could be expected to hold or have access to it all. You’ve got to be able to circulate it, disseminate it. (Participant 19)

Another participant considered that ‘The more time they can give to that [filtering information] and provide me with appropriate material, the better’ (Participant 3). But perhaps more telling is the recognition given to library staff ‘they have just more of that systematic expertise in processing information which I don’t think I have...’ (Participant 20). It was also accepted that academics have to filter information themselves: ‘I suppose in some degree I have to end up systematically processing information to achieve my ultimate goals...’. Nevertheless, there was also an acknowledgment that librarians did it better (Participant 20).

**Librarian as information provider**

When participants were asked what they thought the information role of the library was most were unclear and had only a very vague perception. An examination of the Mission Statement of the Charles Sturt University Library provides little direction other than some general goals (Charles Sturt University, 1999c). Jackson (2000, p. 93-94) in an article on the image and status of academic librarians, refers to this lack of role definition and suggests that if ‘academic librarians do not define their profession and mission, others – university administrators, politicians, public interest groups – most assuredly will do the work for us’.

The view of the role of a librarian as a proactive partner, mentioned earlier, in the teaching process is not a universally held one. A majority of participants could not agree on the extent of assistance that should be provided to users. The following view was held by about a third of participants: ‘the librarian is there to open the door, not
necessarily to hold the person by the hand and walk them through all the shelves’ (Participant 19). Perhaps this lack of role definition can best be illustrated in the range of opinions expressed by academics relating to the nature and extent that information searching should be provided to them. Several participants would like the library staff to undertake their literature research for them, but there was a feeling that library staff were too busy and that it was not their job. Two responses indicate this:

I probably have the impression they’re too busy to do that specialised job for an individual person. It wasn’t really part of their job. They were there to facilitate...not carry out the task for the person. Well that might be wrong, it might not be the policy for that library. (Participant 16)

I don’t use the librarians a lot...I expect mainly I suppose that they are always busy...with students. I think they are a bigger client of the students rather than to people like me who ought to know better anyway...I don’t particularly see librarians as research assistants... (Participant 15)

About a quarter of participants would welcome the library of the future becoming more of an information provider rather than just identifying sources of information, their availability and provision of them through document delivery services. As the following participants put it:

that’s one of the things not defined in this place. What is the role of the librarians in the library? ...I don’t know that I would get a very brilliant reception from the librarians down here if I asked them to do sort of, essentially do a literature search on something that I was wanting to write about. They would see that as my role. Well I actually see that as their role because they have better skills at that than I have. (Participant 4)

I feel more that I should be the one doing research but they should be guiding me on how to do it. I would love it if they would, but I don’t feel I have really got the right to ask them to...So actual searches would be fantastic...because...we can access all this from our desk... but the message I am getting is that we’re supposed to do that ourselves. (Participant 22)

Persuasive arguments were put forward regarding the advantages to academic staff of development of library services in literature searching. These are summed up most eloquently by this participant:
It would be really terrific to be able to go to a librarian whose got all the skills of finding the stuff and probably do it four times as fast as I can...and she would save me...the leg time where I can read the important stuff because for me sometimes the leg time takes longer than the reading really, and that's a waste to me...with the explosion of information, what is actually happening, is you can spend more and more of your time actually finding the information and less and less time actually interacting with it and making sense of it. What I would love is someone who can actually do that leg time for me so that I can do the reading and thinking. (Participant 4)

Academics would like to be relieved of some of their increased responsibilities, with literature searching perhaps being one. The extent to which academics find this task onerous, difficult, or confusing, appears to relate inversely to their desire to find someone else to undertake it. The range of skills, tasks and responsibilities that academic staff are expected to have, within, and additional to, an academic’s teaching and research roles, gave rise to some frustration. About one third of participants felt especially strongly about confronting many roles on a day to day basis to point to increasing role conflict. This occurs in the guise of multiskilling but because of decreasing expertise in specific roles because of multiskilling there was not enough time to become expert in anything. One participant put the dilemma this way:

one thing we need to debate and discuss and really come to terms with, is the notion of multi-skilling versus specialisation with referenced information because there is so much information, and I believe that if you are a specialist person, very focused, then I think retrieval of information, developing expertise will be easier. But if you are a multi-skilled person, and that's the way universities are going, then to what extent can you be an expert in a number of skills? That is the big question you have to ask. (Participant 12)

In a discussion on the roles of academics and those of librarians another participant was very concerned about maximising efficiencies in role tasks:

This is what traditionally academics have done...they find the information that other people have written as well as their own and they put it together. But given the increasing complexities and the increasing volume of information, is that the efficient model of doing it? If the librarian has a traditional job, and the academic has a traditional job, what is the bridge in between? I think that's not been sorted out. (Participant 4)
This point is further developed by the participant below, and is symptomatic of the role-definition problems that have been discussed earlier. The question is also raised of the extent to which the librarian can be an educator in a world of increasing access to information, more rapid access, and decreasing time to find it. One participant talked of the kind of answer he received when he asked librarians the following question:

well what is your role? And they really say well you know our role is to maintain the library and maintain the sources of information, let people know what is there, provide training where people don’t know how to get something, but... we haven’t got the time or the resources to actually do it for people. (Participant 4)

When prompted with the ‘If you teach academics how to do it then they will be able to do it?’ he was rather sceptical, as shown by the following response:

That’s if you are sort of saying what I access is relatively contained, but that is less and less the case...that’s a view that [was appropriate] when disciplines were pretty narrow things. We are increasingly into multi-disciplinary research, I mean I’m in that area where you are synthesising...and..., trying to bring all that together...But we have to change the way in which information is coming to us and the breadth to which it is coming to us. That and the rate at which it is coming to us. And yet we are still saying, well teach an academic how to do it and they will be able to fossick around their discipline and so on, but in the long haul that’s a very inefficient way of looking at it. (Participant 4)

Westbrook has sympathy with the plight of those involved in undertaking research that moves over more than one discipline area. In research on interdisciplinary information seeking in women’s studies she found that ‘such scholars face substantial barriers and obstacles in their information seeking’ (1999, p. 2). Conducting such research creates special difficulties for researchers and presents problems and complexities in designing service helps for information providers, such as librarians, in areas like user education.

The role of the library has been defined in the past and for many participants use of the word ‘library’ was synonymous with that of librarian. The use of technology gave a new raison d’être for the use of the library and librarians; technology seems to have prompted a new perception of the library by some academics and perhaps provided a way forward for future use and direction. But what happens for academics when a
certain level of knowledge of libraries and sophistication in library use is reached; what then is the role of the librarian? Does the library's main role become one of collection maintenance and current awareness advice or a place for academics to gather when they need a change of scene, to borrow or to browse the newspapers and serials and new books? Some of course may ask: ‘Will a point be reached whereupon the user of a library and its resources reaches an appropriate level of sophistication and knowledge?’.

There are many questions relevant here regarding the likely future pace of change in libraries and need for increased access to more and more information; we simply do not know the answers. The following section takes up this issue of image of library as place and discusses its relevance to the participants in this study.

Library as a place

Images of the library as a place to go were also raised by some participants as important determinants of using them in person. For some, libraries were a haven from the office; for others they were alienating places to be avoided; reasons were many and varied as the following illustrates:

going down there imparts a pleasant escape and interlude. It’s a quiet place where you can actually go and do that whereas if I am here, this thing is going to ring every 2 minutes, someone is going to be at my door every 5 minutes. (Participant 4)

compared with

I think partly through tradition, libraries for me in terms of just their current design and layout...are now somewhat alienating sort of places...(Participant 18)

This last participant, an experienced remote user of electronically available resources, who defined virtual libraries in terms of databases, libraries, bookshops, institutions that he could access from his desktop, proffered a further view of how libraries should be developed in the future:

[There can be]...a continuum from having the traditional conservative book, serials library that you check in and check out through to a kind of cafeteria type thing, where you might go and have a cup of coffee, mix with colleagues, in a kind of unstructured sort of way. But while you are
there you might be accessing resources, you might be meeting, and as part of that meeting process, access resources electronically...I can understand the kind of strictures in relation to buildings we call libraries has taken, because they were never designed for those sorts of interactive purposes. (Participant 18)

In response to questions about the role of the library in educating users and providing information, this same participant saw potential in breaking down what he identified as:

an us/them mentality where we have most or all of the librarians located in the library and all the academic staff located in the academic offices, but it just begs the question as to whether that's a facilitating way to do it. I think there may be a better way in fact to have some of the librarians located working alongside and next to academic staff to appreciate what they bring in relation to them, in relation to their academic roles. (Participant 18)

This was a sentiment echoed by other participants, one of whom reflected on her experience with another academic library:

they were in our School one morning a week, actually in our School in the office so that they were sort of more attached to us than up here [at CSU]...there was also a weekly newsletter that was over and above the general information that was coming out of the library. They highlighted things that they thought that we might be interested in, that were particularly pertinent...new books, just with an educational context...[There were questions such as] Did you know that and I've found this beaut way to do this...it gave me a feeling that there was someone there who might actually be interested in education...who would help me in that particular field. (Participant 26)

This concept of personal contact between librarian and staff meant a lot to this participant and the value of such feelings, attitudes generated by such contact were important to her in the construction of an image of a library and librarians. This is also obvious in the following comment, even though the sentiments expressed are initially negative:

communication is sometimes a little bit glum that we have been given this contact person but that contact person is so busy with other things that it's not really a contact at all...either they have to think about having these contact people and give them time available to discuss things with us or then do away with them... (Participant 27)
The changing image of the library – from a storehouse to more of an ‘access’ institution – emerged clearly in this research. But the storehouse library of the past was associated with being less accessible whereas it seemed to most of the participants in this study that the library was still a storehouse but more accessible because of remote access. Despite this, the importance of the library as a ‘place’ remains as indicated in the following:

I think of libraries as it were having changed from being reading rooms and kind of museums of information in a way, to providers of access and a place where access is opened up. And I don’t think that takes away at all from the traditional function of the library as a place where a whole range of knowledges and discourses are opened up to people... I think in many ways a library is a place whose value and meaning is defined by the users and whatever it might want to be, whether it’s used in a certain way, a library is still a meeting place, it’s still a stepping off place into other things. (Participant 21)

Conclusion

A number of factors are converging to reposition the role of the library in the information chain and to influence changes in the information-seeking behaviour of academics. Central issues include: changes in scholarly publishing with the increasing availability of online material often instead of hard copy; the impact of the Internet and its end-user searching facilities; changes in user expectations; new roles for information professionals; and changes in database publishing (Missingham and Warne 1999, p. 266).

Immediate gratification, often at the expense of waiting for what may be more appropriate material, is certainly important to many participants as the following illustrates:

What I need now is the library to be able to access everything I need as rapidly as possible, and that might mean me saying, I need this journal article, get it for me quickly... I think it is very much a psychological thing. We are now attuned to the fact that things happen quickly. (Participant 7)

The role of the librarian as electronic, technical navigator rather than as knowledge navigator may well become the image in the minds of most academics. The evidence from this study shows that this has already started to occur.
In the research carried out, there is not a general picture of a confident, all-knowing information or library user; the picture is much more complicated. There are many typical library users. A complex mix of motivators and demotivators influencing information-seeking behaviour was found. Each of these factors combined intricately and differently for each participant, and resulted in different information-seeking behaviour. These motivators/demotivators are labelled differently by different researchers, e.g. Todd (1997) who spoke of frames of reference, Kuhlthau (1991), whose focus is the information-seeking process and affective aspects influencing its progress, Westbrook (1997) who spoke of internal and external factors and Wilson (1981) and Wilson and Walsh (1996) who mention barriers/intervening variables. When the context of information-seeking behaviour is taken into account, the work environment of the academic, an additional set of motivating and demotivating factors affecting information-seeking behaviour is introduced. Perceptions of role, duties and responsibilities relating to role and actual information-seeking experience are further complicating factors.

Unlike the examination of more structured information-seeking behaviour, as with Kuhlthau (1991, 1993) in her study of school students and assignment preparation, this research did not focus upon any specific and individual information-gathering exercise. Participants were asked to speak generally about their information-seeking behaviour and specific searches for information were on the whole not recalled. In this way a different picture of the motivators and demotivators affecting their behaviour and the image of libraries on which they were based was obtained. Image was examined in context as participants were constructing it through their interviews. It was not the result of one specific information-seeking exercise but the result of an amalgamation of information-seeking experiences, their experiences to date.

Todd, Houghton and Poston-Anderson (1997, p. 1) suggest that the "importance of image, rightly or wrongly, as a factor in identifying a profession or an organisation cannot be underestimated". Interestingly for librarians it seems that there is some belief that the problem of image is a problem of self-esteem (Fleck and Bawden 1995). As outlined in Chapter 6 self-esteem is also a problem for the user and this is discussed in
addition to a consideration of the influence of affect in image creation of libraries and librarians.
CHAPTER 6

MOTIVATORS/DEMOTIVATORS INFLUENCING INFORMATION-SEEKING BEHAVIOUR: AFFECT

You could always go and get your information, but it wasn't a stressful thing to do, whereas now you need so many of these extra skills besides being able to read and have an idea of where to go... You need so much more than if you are going to get the amount of information that seems to be expected in a lot of areas (Participant 8).

Introduction

A major concern of this research was to investigate the role played by the affective realm in influencing and driving information-seeking behaviour, with the contribution of several investigators in this area, Dervin (1973), Dervin & Nilan (1986), Wilson (1981), Wilson and Walsh (1996), Kuulthau (1991), Westbrook (1997) and Julien (1999c) identified in Chapter 2. The affective realm or ‘domain’ is seen as pulling together ‘into one powerful category the entire motivational and emotional involvement of searchers’ (Nahl and Tenopir 1996, p. 277) and recognition that ‘crucial to system efficacy is a willingness on the part of formal helpers to offer concern, support, and respect to the help-seeker’ (Harris and Dewdney 1994, p. 131-132).

Some of the findings of this study, as they relate to the influence of the affective realm, are presented in this chapter. According to Harris and Dewdney (1994, p. 22):

Given a choice, people tend to prefer to find a solution easily, without a great expenditure of time or effort and without loss of self-esteem or other emotional costs. This might explain, then, why people sometimes accept information from more convenient, although possibly less reliable, sources, and why they may abandon the search if it becomes too costly in terms of time or trouble.

Self-esteem, information overload, geographical and intellectual isolation and browsing and their connection to the affective realm and image creation are considered in this
Information overload, geographical and intellectual isolation are closely related to personal constructs and the ability to cope while browsing is important to consider because it is a primarily self-directed activity in the control of the information seeker.

Harris and Dewdney (1994, p. 22) also point out that this principle of ‘least effort’, enshrined in Mooers’ (1960) law: ‘An information retrieval system will tend not to be used whenever it is more painful and troublesome for a customer to have information than for him not to have it’, does not account for the many situations in which there is considerable persistence in searching for information. ‘This type of persistence … may depend on factors such as the perceived importance of that information, the urgency with which it is needed, or the perceived severity of the consequences of not having that information’ (Harris and Dewdney, 1994, p. 23). An expansion of Mooers’ Law to three laws has recently been proposed by Austin (2001, p. 609) and addresses some of the concerns of Harris and Dewdney. Mooers’ original law remains but is joined by:

In an environment in which it is absolutely critical for a customer to have information an IR system, no matter how poorly designed, will tend to be used.

and

In an environment in which the trouble of having information vs that of not having it are fairly evenly balanced, system design and performance tend to be the deciding factors in whether or not an IR system will be used.

As discussed in Chapter 4, the catalysts for a ‘least effort’ or ‘most effort’ search lie in the influence of motivators and demotivators on behaviour.

In this chapter the influence of the affective realm on motivation for information-seeking behaviour is focused upon, although terms used to describe the ‘affective realm’ and what it represents in a practical sense are difficult to identify. For the purposes of this research, Julien’s (1999c, p. 588) definition, which is defined in Chapter 1, is perhaps the most useful where ‘affective’ covers all of those terms that refer to feelings, emotions and beliefs. Participants in this study expressed and/or indicated a variety of preferences, evaluations and emotions.
One of the most common affective responses, evident in the interviews with participants with regard to seeking help in their information-seeking behaviour, was that of a desire not to show what they considered was their incompetence, by asking for help in libraries. Most people do not like to ask for help (Broll et al. 1974 cited in Baron and Byrne 1984, p. 302) and feel that they will be viewed as less competent if they accept it (DePaulo and Fisher 1980 cited in Baron and Byrne, 1984, p. 302). Additionally it has been found that ‘feelings of embarrassment and incompetence probably explain why help is more likely to be sought when the problem has an external source (‘It’s not my fault’) than when it is internally attributed’ (La Morto-Corse and Carver 1980 cited in Baron and Byrne, 1984, p. 302).

In this study views such as the above appear to arise from the context of the work environment, the work role of an individual and how the individual perceives this role, in addition to their feelings about asking for help, as in the case of the professor who responded, when discussing use of the library:

I guess you do not like to ask for help, you try and solve it yourself before you ask for help... as Professor you are expected to know these things, and you are probably looking around to see who is looking, and you pretend that you know what you are doing. (Participant 2)

In the work environment of the academic, this reluctance to ask for help may be more pronounced given the ‘knowledge’ status often afforded to academics in society and in an academic community such as a library. This view is reflected in Barry’s study, carried out in an academic environment, which found that: ‘Those used to their academic status and positions as experts find it difficult to reveal lack of knowledge or difficulties in learning systems’ (Barry 1995, p. 117–118). In the case of an academic, the role forms (the written or unwritten expectations of that role), shapes (by experience) and patterns (there are ways of doing things) their daily life (Berger 1966, p. 115). The professor, in the above example, has an idea of the expectations of his role (he should know how to use the technology in the library), shapes it (by acquiring sufficient knowledge of the technology in the library to feel confident enough about using it) and creates or provides a pattern for carrying out the task (or does not). It is not seen as appropriate for the professor, who does not perceive himself/herself as competent in ways of using the library, to ask for help in this context; ‘the role provides
the pattern according to which the individual is to act in the particular situation' (Berger 1966, p. 112-113). Asking for help may threaten his self-esteem.

Perceived loss of self-esteem in information seeking can be a very powerful demotivator when considering source choice and can lead to changing sources used in information-seeking behaviour, especially when faced with having to use the same sources again. The affect on an individual’s self-esteem of asking for help is difficult to measure but it becomes self-evident through action, or the lack of it. It may not be the sole factor affecting action. Self-esteem may act in concert with, and be acted upon by, a range of other factors. In the following pages the influence of self-esteem as motivator/demotivator in information-seeking behaviour will be investigated.

**Role of self-esteem as a motivator/demotivator**

The potential loss of self-esteem, ‘a belief about one’s own worth based on an overall self evaluation’ (Wood et al. 1998, p. 127) was too great for the professor, discussed above, to seek help (Berger 1966, p. 112). Although he knew what had to be done, for some reason, maybe time pressures, he was not able to get himself into a situation to do it. Additionally Bandura’s (1977) concept of self-efficacy, a more specific version of self-esteem, is useful to consider here: ‘it is an individual’s belief about the likelihood of successfully completing a specific task’ (Wood et al. 1998, p. 127). Someone could be high in self-esteem yet have a low self-efficacy about performing certain tasks. The role, the manner in which the individual perceives that role, the situation and the context provide the motivation for action or inaction, or whether an information need is going to be resolved. At times the performance of a particular task may be perceived as such a threat to self-esteem as to delay, postpone or abort the task. This task may be seen as needing to be done, but intervention of a motivator or demotivator, such as a perception that an information provider is unsympathetic, may see information seekers change their minds about continuing.

As mentioned above, this concept of self-esteem is linked to help seeking and, if it is perceived to be threatened, it can be a powerful demotivator to engaging in information-seeking behaviour. The work of social psychologists is useful to consider in this discussion as it provides a framework with which to explore the reluctance of
academics to seek help with their information seeking. Fisher, Nadler & Whitcher-Algana (1982 cited in Baron and Byrne 1984, p. 302) suggest that:

When self-esteem is threatened by aid, the victim responds with negative feelings and dislikes the helper as well as the aid, but there is a strong motive to help oneself in the future. When self-esteem is not threatened, the victim has positive feelings and likes the helper and the aid, but future self-help becomes unlikely.

Once help has been sought it may or may not be sought again from the same source, depending upon the initial response; the original source may be displaced by another source or the information need may be tucked away. There is some evidence in this research that academics, drawing upon every experience, had internalised their information-seeking behaviour. As part of this internalisation (Berger 1966, p. 140) the ways of doing things may change. As reported in Chapter 4, Barry (1995, p. 130), suggests that once academics have an established pattern of information-seeking behaviour their information seeking stops resembling the simple model (e.g. checking catalogues, seeking the help of intermediaries). They know how to find what they want to find and they use their established methods of information seeking to do it. Established method may mean contacts with other researchers may be the primary method in which they find new information. For example some participants, when questioned about barriers to their information-seeking behaviour suggested that they had internalised whatever barriers had existed and now merely found ways around them; they were in fact oblivious to the existence of barriers because of this. This was also mentioned in Chapter 4.

It appears possible, although difficult to prove, that the past has very much influenced the current information-seeking behaviour of academics. However, motivators and demotivators influencing past behaviour cannot always be consciously recalled; they remain latent.

As in the case of the professor, discussed above, many academics in the present study saw the action of seeking help as damaging to their self-esteem. There is a reluctance to go and seek assistance. This manifests itself in a range of feelings, from concern about displaying ignorance, discomfort about asking for assistance and waiting for a friendly face. There were numerous examples in the current study:
I mean I get concerned about displaying my ignorance...and what the rights and entitlements are...but mostly not quite knowing what is available...(Participant 5)

I am not always comfortable in the library. I take that on as something that I’ve been inadequate in keeping up with...I don’t think libraries are probably the most helpful institutions...a lot of comments slip out of students’ mouths now from time to time...there is a lot of this emotion in terms of not being comfortable...you do get put off...(Participant 13)

it being an academic library, most of the staff would assume that you already know how to search effectively for what you want and I go there and find it a bit difficult to get somebody to help me. If there’s somebody there I know...I don’t mind asking but some of them sort of look you up and down as if well, you’re an academic, you should know...some people have been incredibly helpful...some people who are just a bit forbidding so you don’t just ask...you hang around until you find someone who looks a bit more friendly. (Participant 25)

One participant said that she felt quite intimidated using the library in relation to searching electronically and commented:

I thought I should know. I really thought I should know, and I kept putting off thinking I will do that...but there were always other things and I never got around to it. I thought I had the [confidence to search electronically] problem, so I should do something to overcome it...I felt in terms of going to the library that really they are pretty stupid questions to be asking, but I would hear the librarians say things like, students have to have this, they have to be able to do these searches, and I would think, God, how can I expect the students to do it and I can’t, and, how can I go and ask this [question] and the students [get this treatment], what must they think of me? (Participant 8)

For this participant her information-seeking behaviour was displaced by these ‘other things’; her motivation to find out was not strong enough ‘when you really need to do something, that’s when you learn best…’ and the strength of her demotivating feelings was strong enough to prevent her from trying. The perceived threat to her self-esteem was too great for her to try. This is supported by Mellon (1986) in her research on students and their information seeking.

Perceived lack of threat to self-esteem, which may be linked to such activities as academics attending user education classes in the confines of their own office or general environment rather than in a library environment, can also be relevant in influencing the
path future information-seeking behaviour may take. For example some schools within faculties in the University have been proactive in seeking help from the library regarding electronic access. Library staff were asked to present workshops on electronic access in all of the Schools on the Wagga Wagga Campus, to which they agreed. This approach to user education, in the working environment of the academic, was considered preferable by several participants to:

sitting in on big classes in the library...I would think there’s a lot of people hiding behind doors that aren’t altogether comfortable with the expectations of how to access, in a very efficient way, all of the information that they may require. And it’s far less intimidating in doing it that way. [i.e. in the School environment rather than in the Library]
(Participant 8)

Also referred to in Chapter 5, Participant 18 referred to an us/them mentality between librarians and academic staff:

where we have all of the librarians located in the library and all the academic staff located in the academic offices...I think there may be a better way to have some of the librarians located, working alongside and next to academic staff to appreciate what they bring in relation to them in their academic roles.

Library buildings were variously described as not user friendly, overwhelming, inaccessible, with facilities poorly signposted and access to computer terminals difficult.

There was a strong view among many participants that the library was there primarily for the students and that academics should know how to use it. For example:

I think they are a bigger client of the students rather than to people like me who ought to know better anyway. The barriers are not from other people or things, it’s me. I would say it would be my reluctance to go and seek the assistance...But I wouldn’t say they’re barriers, they’re...not a conscious sort of thing. (Participant 15)

As discussed in Chapter 4, the views and comments of students regarding the library also contribute to formation of a lecturer’s image of a library. When lecturers perceive
that their students find librarians 'impatient' and 'unapproachable', it also may affect a lecturer's own feelings as the following indicates:

we are trying to encourage information seeking in students and make it a positive experience, and if it's not a positive experience...that's quite frustrating because I think I am doing a good job in trying to get them to go there. (Participant 17)

In addition to consideration of research in the social psychology and library and information science areas, it is useful to draw on the management literature relating to motivation. Shamir, for example, in research related to self-esteem, draws attention to the influence of self concept and product choice. Behaviour is not always considered to be 'goal-oriented, instrumental and calculative but is also expressive of feelings, attitudes and self-concepts' (Shamir 1991, p. 411). This links into Julien's (1999c, p. 588) belief that affect is a major driving force in information-seeking behaviour. Additionally Bandura (1986, cited in Shamir 1991 p. 412) distinguishes 'between self-esteem stemming from evaluations based on competence, and self-esteem based on the possession of attributes that have been culturally invested with positive or negative value'. A driving force for motivating behaviour is then these internalised standards 'and self-evaluative reactions to their own actions'.

In considering this, and in the light of this research, an individual's self-esteem can be affected, firstly, by feelings or fear of looking incompetent in undertaking a task or action and, secondly, by internalised attributes attached to positive or negative values. It is this latter perception of self-esteem that may inform attitudes and feelings towards technology as much as the linking of self-esteem with feelings of incompetence. On the one hand, individuals may react to perceptions that they might look incompetent seeking assistance or help. On the other hand, internalised 'standards', attributes or views towards a source used in information seeking may influence whether the source is chosen and approached. An individual may feel that their self-esteem could be affected if they asked how to use technology to look up databases because they do not feel competent using technology. They may also feel this threat to self-esteem because of their internalised views towards a source because of some prior experience with it. New images are constantly being created and personal constructs are being changed.
But self-esteem is only one aspect of the affective realm, a range of other aspects can be considered as linking to motivating and demotivating behaviour. This is done in following paragraphs, using technology as the focus.

**Role of affect and technology as a motivator/demotivator**

Information providers need to be aware of the various ways that affect influences and drives information-seeking behaviour, including source choice, as well as prevents its genesis. A key concern for participants in this research was their perception of their ability to use technology and to use it to gain access to information. Using the technology and using it to obtain access to information are two different things but were often combined in the minds of participants.

The challenge of technology, of keeping up-to-date, of knowing as much as one’s colleagues, was as much a catalyst for motivating information-seeking behaviour for some participants as for demotivating information-seeking behaviour for others. Confidence and competence in use of technology varied among participants. For several it was not yet fully integrated into their ‘established’ pattern of information-seeking behaviour or their associated constructs. This could relate to a disturbance of their sense of meaning which had been derived from ‘a sense of unity of their self-concept, from continuity between the past, the present and the projected future ... and from the correspondence between their behaviour and self-concept’ (Shanir 1991, p. 412).

Sever (1994) in an interesting article entitled ‘Electronic information retrieval as cultural shock: an anthropological exploration’ suggests that the concept of ‘the electronic library is so different for people without computer knowledge that it is like encountering a totally new culture where norms and customs are not understood’ (p. 336). The way to approach this problem, according to Sever, is to allow people to grow into the electronic library environment through socialisation (internalising information) and education over a period of time.

It is possible that some end users of computers cannot become proficient unless they internalize the use of the new technology, and their education and training will have to occur over a considerable period of time... Information retrieval, even when the program is user friendly, is much more complex, as it expects the user to make knowledgeable choices...Faulty decision making resulting from incomplete information...
is not likely to be successful. The result is that the user, through incomplete mastery of the process and the information necessary for selection, ends up either doing much less than is possible or retrieving the wrong items (p. 340).

Although Sever wrote this in 1994, there is still some truth in her argument, and in the present study technology was a problem, to varying degrees, for many participants. Approaching information providers such as librarians was not seen as a threat to self-esteem for some participants who relied upon library staff members to help them through the technology ‘hump’:

I much prefer to do a search with an expert there who I can call on when I get stuck as I invariably do...I will go to advanced search strategy type workshops and then I will actually lose it out of my head and have to go back and look it up and practise and practise it. If I don’t do it for a couple of months, I am back to square one and I’ve almost got to ring...in the library and say, look I am really embarrassed about this but what was that? I don’t have the sort of memory for detail in that area that I think would be very handy to have. (Participant 22)

As already indicated, for others technology also added to insecurity about their knowledge, as the following comments indicate:

Technology is always an issue...there’s the means, the avenues, faxes, and data can always change a little bit, so that you just sometimes feel that you have to get through a little hump to get through stuff quickly...(Participant 5)

and

that’s also a bit of a hindrance, changing technology...unless you are using information seeking very regularly, if you leave it for a few weeks you can be sure it’s going to be different. You can never be confident in what you already know. (Participant 26)

Lack of confidence in approaching and using technology was also identified in Barry’s research (1995, p. 127) where it was found that:

academics have tended not to expect to go through a learning process, but to be able to use the systems immediately, and so they haven’t made allowances in terms of the time, commitment, and patience required to
learn. Often not knowing what they do not know, they have been unable to account for their feelings of frustration and inadequacy. Their limited information about systems, coupled with failure to expect a learning process, has resulted in some of the academics rejecting systems based on poor perceptions of their usefulness... There is a reluctance by the academics to admit to a lack of knowledge about IT, as they all assume their peers know better how to handle the system. This situation seems to have led to strong feelings of inadequacy...

In discussing bibliographic and user instruction Biggs (1995 cited in Todd, Houghton & Poston-Anderson 1997, p. 22) suggests that much of it is isolated from meaningful application which may be connected to the confidence of users in information seeking. It is:

presented as accommodating rather than assertive, supplicant rather than collegial, reactive rather than proactive; and too much instruction begins and ends with the technicalities of using reference works, electronic or print, rather than actually helping people create their own meaning. There is a mismatch between mission statements of meeting users information needs and the day-to-day actions in libraries.

Affect and interaction with information providers

Perceived negative interaction with information providers also resulted in participants' information seeking being altered. At times the process of information seeking appeared to come to a halt due to 'unpleasant' experiences with information providers; this is defined by Julien (1999c, p. 588) as the 'preferences aspect of affect'. Several participants reported positive experiences with library staff only to 'run into' unpleasant experiences at a later time.

They came here and introduced themselves, they would maintain regular contact... If the librarian was really keen and enthusiastic and working in with us and sort of discussing with us what we thought was best for the students and what we would like them to do. That was really quite an enjoyable task and then I came across one that was a little bit stroppy or felt that we were imposing too much work I felt ... that that wasn't such a pleasant experience... because of that I probably don’t ring that person as often if I would have another librarian to ask for something... I always had the feeling that that person would much rather not be involved... several experiences like that would cause me not to ring up in the future; I'd try and find another way to get the information. (Participant 17)
The effect of geographical and intellectual isolation on motivation

Rather demoralising and frustrating for many academics was geographical isolation. It was most evident with regard to physical isolation from major city universities, their academic staff and their library collections. The potential intellectual isolation that resulted was also perceived as damaging/detrimental. While geographical isolation is relative and each academic perceives it differently, it is likely that the academic in a non-metropolitan university may feel this isolation more than their capital city counterparts.

Geographical isolation was perceived by many participants to be a problem that affects their research and teaching. Working at a rural university nearly three hours drive from the closest metropolitan universities in Canberra, and five to six hours away from large metropolitan campuses in Melbourne and Sydney respectively, should not present, one would think, many difficulties given the widespread availability of, and academics' use of, electronic communication. A number of factors, however, when combined, appear to suggest that there are many difficulties. University budgets are falling thereby influencing such things as availability of library resources and ability of universities to fund staff to attend conferences.

As mentioned above many participants saw the journal collection available to them, especially at the Wagga Wagga Campus, compared to Charles Sturt University's other campuses, as not very good and had resorted to travelling to other campuses to browse collections and seek out specific material. The cost in terms of stress, accommodation, travelling costs and time of using libraries in the capital cities to copy material was considered less stressful and financially cheaper than applying for inter-library loans or copies, waiting for them to arrive and paying for them. Basically choice was reduced for academics in this study. As one participant said: 'If you were in Sydney, Melbourne...you have several libraries you can go to, but we can't do that here. That's a particular problem of being in the country' (Participant 28). Inter-library loan did provide some relief from the need to travel but was not considered a substitute.

Geographical isolation, whether this is caused by distance from large city-based universities, or distance from colleagues on other campuses in the same university, or by a reduced ability to fund attendance at conferences and meetings, can give rise to
intellectual isolation. The need for academics to be creative, to engage in social interaction at work is accepted as necessary by Barry & Squires (1995, p. 181), and by more than three-quarters of the academics in this study. As one participant said 'in any form of learning, we have to have interaction and reflective thinking and critical thinking' (Participant 12).

Another participant was especially concerned at what he perceived as a reduction in academic interaction on a face-to-face basis:

peer review... peer interaction before information seeking...and also... after the information seeking activity has taken place. We don't have enough of that. (Participant 12)

For many academics it is immediacy of contact and geographical proximity to colleagues they can communicate with that reduces feelings of intellectual isolation. The following words illustrate this:

Occasionally they [other academics] might email me with a question or a comment and vice versa. I might use them, or [we might] telephone each other occasionally about certain issues in the discipline. And in the course of the conversation they may say, have you read that paper...if you haven’t, you say, no, can you give me the reference, and I will go and get it. And sometimes if they are really nice, they will actually photocopy it for you and send it to you in the post and vice versa...I think that’s a part of normal academic discourse. In that case that’s a sense of isolation at CSU-Riverina. If you were in a metropolitan university you could probably walk to the office next door and speak to the same colleague and have a broad discussion...being the only...academic on this campus [I cannot do that and]...I don’t really work with any of my colleagues...at other campuses in this institution. (Participant 24)

These sentiments were also echoed by other participants who were the only full-time persons in a subject area which made them ‘often feel quite isolated...I wish I had someone to run ideas by, and I often don’t have...’ and

I don’t have a lot of contact with other colleagues...I really love it when I am doing my research and I am up at [University of] NSW, because I can talk to a whole cross section of people that have similar interests and, just even over a cup of coffee, sometimes it is amazing what you get...like resolve issues, or points in another direction, or give you a
contact, and I think that's really important. We don't have a very active seminar series in our School... (Participant 20)

The fact that there were too few academics to provide support, for example in exchanging ideas, clarifying thoughts and using colleagues' resources, was a powerful motivator to seek sources outside the University. The following comment is representative of many academics in this study:

in the sense that not many people are doing research in my field or not many people are teaching the discipline which I teach... therefore I have no interaction, but I do speak to colleagues from other universities... (Participant 14)

This situation can also act as a stimulus to finding other sources but such activity may contribute to feelings of inadequacy about their own institution's ability to service what might be considered normal teaching and research information needs. It is not easy for many academics to simply substitute a personal form of interaction with colleagues with an electronic form.

An additional contributing factor to the availability of kindred academics with whom one can interact has been the reduction in the number of academic staff in some subject areas. Staff numbers in terms of staff/student ratios, are declining, especially in some discipline areas. As one participant said: 'These days it is very common to be the only full time academic involved in a subject...' (Participant 23).

The problem of resource deprivation, caused either by lack of funds for the university library collection or by geographical isolation from other large library collections, and the resultant intellectual isolation was of major concern to nearly all participants in this study. But rather ironically too much information, or information overload, was also a concern. Toffler (1970) refers to this 'information overload' as causing cognitive overstimulation and affecting our ability to think. To some extent this perceived problem of information overload refers mainly to the large amounts of information coming from membership of listservs and discussion groups and to filtering required material from Web resources and database searches. There seems to be less time to seek information and, although there is improved access to information, there is much more information.
Information Overload

In modern society just about everything seems to be required without a wait; we need more information to cope with more information, greater amounts of computerisation and competition. At the same time the means for accessing information have dramatically improved. This research suggests that obtaining access to information is not a problem but that there are motivators/demotivators affecting certain methods of access, as discussed throughout this study. At times the amount of information accessed is overwhelming leading academics, who rely on colleagues for a quick response and who generally spend time in extensive filtering (e.g. for currency, authority) of information once it has been obtained. This situation often leads to demotivation to access, for example 'I’ve got a particularly heavy load this semester in terms of doing the email, voice mail, commitment to students...I really don’t have a lot of time to just sit at the computer...' (Participant 8). There is considerable support for this complaint from the literature.

Since Toffler wrote his bestseller *Future Shock* in 1970, information supply has increased dramatically and information overload is more prevalent. Most probably:

the real problem for most people is that they are inundated with information and they have little chance of getting through it. Information is no longer difficult to come by. Rather than providing users with information maybe we should actually be sheltering them from it (*Journalism and the Internet*, 2000, p. 4).

Lancaster (1999, p. 49) points to the problem of not enough filtering of information in this age of increasing access to information rather than to the need for better physical access:

librarians have little justification for claiming that technology has greatly improved access to information...it has produced huge improvements in physical access to published text and graphics. However, intellectual access to the contents of this text has improved very little, if at all.

In the landmark study *Dying for information*, conducted by Reuters Business Information (1996), on the effects of information overload, the resultant generation of stress was considered a major problem. The report’s findings are relevant to research on
information-seeking behaviour in a number of ways. For example, the creation of stress caused by information overload was especially insidious. Major factors here include:

- threat of being overwhelmed by the sheer quantities of information that must be mastered if we are to do our jobs efficiently...not knowing whether crucial information exists or if it exists, of not being sure where and how to locate it...frustration stress caused when we know where some essential information is located but are not sure how to access it (Reuters Business Information 1996, p. 2).

A factor underlying and intensifying this information stress, the study found, were time pressures where the 'more information there is, the less effectively we take it in' (p. 2).

For the participants in this study very active listservs, discussion lists and routine university-generated emails, whose benefit was often considered dubious by participants, and by Barry and Squires (1995, p. 185), were key triggers of feelings of information overload. For some it related to information coming from everywhere and an inability to control it. One academic, for example, said: 'I actually delisted myself because I was getting swamped with so many hundreds of e-mails that I just couldn’t keep up' (Participant 22). Pressure of time was a key reason for deleting listserv subscriptions with a participant saying: ‘I have never found a lack of information to be a problem, it is always a problem getting the time to make use of the information’ (Participant 6). Others found the information on listservs repetitive and often comprising low interest material and gave this as a reason for lack of use.

Many participants found the amount of information available on the Internet overwhelming, were frustrated in identifying relevant material, and were concerned about the refereeing processes. Discussion on listservs was seen as often irrelevant or marginally relevant to main areas of research and teaching.

One participant reporting on use of email and listservs, as an example, found that:

it...stresses me out just to have to read all the information...it is probably too convenient, people overuse it and I don’t want to be overloaded that way...You had too much information that was irrelevant and I don’t consider it worthwhile at the moment to be on one, to have information, get stressed having to read it all...(Participant 17)
The Internet was a major contributor to participants feeling a sense of information overload, of having yet another access point for contact and information. But ‘using the net’ was now a necessary part of their every-day working life; the University required it for teaching and research; and it had the potential to be a remarkable resource. The question could be asked, however, if the initial impetus for becoming Internet literate came from the academic or from a combination of pressures from the University administration, introductory classes offered by the library or students in class. For example by putting into place several online initiatives, such as the use of forums in teaching, the University administration forced academics to post messages to and read messages from students on the forum. Failure to do so would reflect poorly on the academic’s teaching practices. Library classes, especially for new students and research students, have become dominated by instruction in using the Internet to access catalogues, databases and the World Wide Web. With pressure from students, who incorporate material from the World Wide Web into assignment and class discussion presentations, the academic must at least become more aware. Obviously many of these initiatives are necessary to keep up-to-date and relevant but some stresses are attached to them.

Waddington (1998) suggests that:

> Technologies for managing information are often the problem, not the solution...more lanes just means more traffic. People create and distribute because they can, not because it’s useful. Intranets can become like the internet - full of homemade pages and dead links.

Information overload created stress for many academics in the present study with reactions often personal perceptions of inability to cope. The following types of comments were made: ‘I need to reduce the amount of information coming to me. How do I know what is important? How do I manage all of my other duties if I read all of this?’

Although the amount of information is more difficult to control with listservs and discussion lists, a discussion of all of the potential contributors to information overload must include all of the sources of information to which an academic has access. Academics discriminate between sources depending upon the type of information required and their relative levels of motivation/demotivation towards different sources. When there are pressures, such as time constraints academics are further encouraged to
discriminate. Perhaps because of the relatively recent nature of communication exchange through listservs, and subsequent lack of familiarity with this source, demotivation is stronger as appeared in the present study and this source is more likely to be bypassed or not used. It may be that in times of information-seeking stress, there is an automatic reversal to more familiar and therefore personally justifiable means of information seeking.

While access to a greater range of material was welcomed sometimes, such access also led to frustration. For example, even though one participant was delighted to have access to online versions of international daily newspapers, for personal as well as work reasons, he considered it was a lot easier when he didn’t have access to it.

Now you’ve got it you think you should be using it. If you are not using it every day there’s something wrong. Those things build up and then if you are not looking at that newspaper, you are not looking at this newspaper and so that builds up a level of expectation on yourself and you just have to say, just forget about it. (Participant 9)

Other important sources that were seen to lead to information overload were databases. They have been especially valuable in providing some sort of control for academics over the vast amounts of information with which they have been faced but at the same time they can present a problem of information overload and monitoring of continually new information falls behind (Barry and Squires 1995, p. 179). Sometimes time pressures and the expectation of having to undergo a potentially non-productive search on databases acted together to demotivate information-seeking.

I might have only two hours to prepare a lecture and I need to be able to go straight to the source of what I want at the library...if I am just mucking around with key words in the CD-ROM I am lucky to get ...3000 articles on this or even 250. [It] is just too many for me... (Participant 22)

This is what Bandura (1977) refers to as self efficacy (or sense of personal mastery), discussed earlier in this thesis, where:

The strength of people’s convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations. At this initial level, perceived self-efficacy influences choice of behavioral
settings. People fear and tend to avoid threatening situations they believe exceed their coping skills, whereas they get involved in activities and behave assuredly when they judge themselves capable of handling situations that would otherwise be intimidating...Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. (p. 193-194)

The increasing pressure on an academic's time, referred to in Chapter 4, created by administrative duties, has seen the amount of time devoted to information seeking for research, especially, but also for teaching, decline (Barry and Squires 1995, p. 183). Just at a time when there is much more information that is accessible, there is decreasing time to access it and undertake research. The result is increasing feelings of information overload. For some academics it was found that this situation created frustration and time:

"to pursue my own scholarly interests and those things seem to be getting less and less..." and ‘time is consumed by too many committees and other administrative duties...that does prevent me from doing research.

(Participant 8)

For those involved in interdisciplinary research there were further pressures to narrow down the area of expertise lest the amount of information coming from many different subject areas became too overwhelming (Westbrook 1999).

One method of information seeking, firmly in control of the information seeker, which has always been used by academics, is browsing; this is discussed in the next section.

**Browsing**

Nearly all information-seeking behaviour, whether purposive or passive, involves browsing at the least — a physical activity such as looking through Web sites, or checking book shelves. Browsing can be considered a search strategy. It is essentially looking for something — in the context of this research, looking for information. Because it involves unstructured searching it is usually non-threatening to self-esteem and it can give rise to unexpected finds and stimulate creativity and ideas, triggering further exploration. Results can be perceived as a personal achievement and instantaneous. All searching can do this but the ‘cost’ seems less with browsing than
other more structured searching methods. Browsing can of course be tedious and unfruitful but this can be considered more the user's fault than the system's.

With browsing academics have freedom to choose what they will look at and for how long they will look at it. Because academics have less time available for searching, especially because of increased marking loads and administrative responsibilities, browsing in libraries is one activity that appears to have declined in frequency over recent years. To some extent the ability to browse the World Wide Web, although specifically mentioned by only a few respondents, has also probably had an influence on reducing the need to browse in libraries. But it remains an important and desirable information-seeking activity. Browsing remains a relatively independent, non-directed and non-confrontational activity. It is measured by participants by what it achieves in terms of obtaining the 'ideal' article, the 'book that one has been waiting for', or by being an 'idea creator' allowing a higher sense of satisfaction to the browser than more directed information-seeking. For the information seeker browsing often acts as the motivator or demotivator of more directed information-seeking behaviour.

Westbrook (1997, p. 319) says, ‘Individuals who consider or act upon a consideration of identifying or locating that which has the potential to modify their internal knowledge structures are engaged in information seeking’. Browsing for information is one method of information seeking and is common amongst academics; it is no less important a method for finding information than using a highly structured search strategy.

Hildreth (1982 cited in Poulter 1998, p. 56) identifies the following levels of browsing:

- Directed/Structured in which the desired goal and its location are known.

- Semidirected which is 'a loosely structured periodic activity involving repeatedly visiting locations and sources because they may contain new material of interest'.

- Undirected/unstructured and 'almost random activity, in which there is no goal or known location, but rather a vague wish for such'.

Even the most purposive information seeking involves looking through or glancing at what one has identified in a database, on the Web or on one’s own bookshelf, especially in the early stages of a search. Poulter (1998, p. 55) sees browsing as almost
synonymous with searching. Its essential features involve interactivity and lack of consciously structured queries or explicit goals (Toms 1999, p. 191). However Poulter (1998, p. 56), suggests confidence in the user's ability to consciously know what he/she is doing when he says that it is not necessary 'that a query must be formulated in advance by the library user...’ to recognise relevant material. Users may have trouble formulating exactly what they want, ‘lack the specific vocabulary to articulate their need or may not have a need to articulate, but can recognize something relevant as soon as they see it’. The information seeker interacts with the information, sums up its potential and immediate usefulness and takes a physical copy or mental note of it. Each part of the browsing process may inform the next, alter the direction of the search until some conclusion to the information-seeking occurs.

Toms (1999, p. 204) paints a picture of typical browsers as ‘passive gatherers of information who opportunistically respond to the cues presented by the environment and accumulate information as they are exposed to it’ and people who:

immerge themselves in a topic of interest and meander from topic to topic while concurrently recognising interesting and informative information on the way. They seem to seek and gather information in a purposeless, illogical and indiscriminate manner...Often the result is the acquisition of new information, the rejection or confirmation of an idea, or the genesis of new, perhaps not-wholly formed thoughts about a topic (p. 191).

Additionally Toms (1999, p. 204) suggests that browsing can simply be information gathering and exploring that is 'more connected to satisfying human curiosity than to resolving a predetermined information gap or information need'.

The type of browsing activity represented in this research does not closely parallel the concepts of Toms (1999). The participants interviewed for this study, in many cases, deliberately chose to browse because of the likelihood that they would be successful in meeting their information need. Although, in Wilson and Walsh’s terms (1996), their information seeking was not purposive, it was often a planned activity to answer their information need. Browsing does present possibilities for interacting with information in creative and active ways (Barry and Squires 1995, p. 180).
Browsing, in the context of this research, is often planned, not as directionless as Toms (1999) indicates and regularly takes the place of more directed searching on databases, catalogues, especially when the information need is not clearly formulated in the searcher’s mind.

For the majority of participants off-line browsing was confined mainly to physical use of the CSU Library or other libraries. Browsing online appeared to be confined to the Web or databases. This is understandable as currently browsing across networks and on OPACs is difficult (Poulter 1998, p. 55). A number of reasons for the browsing behaviour of academics were identified:

**Current Awareness**

Browsing journal articles on the new journal/book display in the library was the most popular form of browsing among academics in this study. According to one: ‘With the selection of journals, and there’s not many, most of them come in monthly or quarterly and I go over to the library and just have a look through their indexes [table of contents] and if there’s anything that takes my eye, I photocopy’ (Participant 11). Apart from the obvious potential of finding useful articles, the bibliographies attached to the articles were considered invaluable. Dealing with actual books and journals allowed a more creative type of thinking than looking at information on the screen (Barry and Squires 1995, p. 181). Unfortunately the perceived lack of journal titles available in the Library was seen to reduce the effectiveness and extent of browsing, with one participant commenting that the Library was not worth browsing in. To some extent browsing of material available on the Internet replaced the need for some to physically visit the Library. However academics do appear to discriminate between browsing for specific topics where the Internet is used and more broad range ‘grazing’ where the Library is preferred.

Finding a specific title on library shelves, for many academics, involved bypassing the catalogue and going directly to the shelves where you thought the ‘item’ was going to be because ‘sometimes you find other things you didn’t know were there’ (Participant 2). The act of browsing often occurred as an additional activity to purposive information seeking. The Library was visited for a specific purpose and then the opportunity to do some other things was taken.
Pre-Purposive Search Initiation

For researching new areas and preparing distance education material, browsing was often chosen as the preferred starting point:

I would probably browse in journals looking for material that was related and then I would start to get a feel for who the authors were and where the information was based...find out what the most recent books were in the library and usually browse the shelves in the right area. (Participant 5)

and

I do like to browse along the shelves and I know this probably isn’t a recommended way of doing things but often just by browsing into different areas I will find books, chapters...journals which I probably wouldn’t come across if I’d just been trying to look on the databases of the library...that’s a real action thing, browsing. I know I am not supposed to browse, I’ve been told that by librarians. But I do find it quite efficient really. (Participant 28)

Other catalysts to more purposive information seeking were obtaining guideposts from catalogue searches, newspapers and electronic media. Once potentially relevant material had been identified in catalogues, newspapers and the electronic media, the next step was to revert to more purposive information seeking.

Personal Control of Information Seeking

Browsing for information represented for academics more self control over their information seeking than going through an intermediary or searching purposively for information from databases themselves. As Poulter (1998, p. 55) says: ‘In browsing, feedback is incremental and under the user’s control in that the user determines what individual item should be examined at any one time’. The words of Shamir (1991, p. 411), referred to and quoted earlier in this chapter, are also relevant here: behaviour is not always considered to be ‘goal-oriented, instrumental and calculative but is also expressive of feelings, attitudes and self-concepts’.

For some participants there were some cognitive advantages in browsing for information. They found searching for them was more focused and they were able to
identify potentially useful material that could be used in the future and the breadth of what they were exposed to was wider than would be the case with more purposive information seeking. Purposive information seeking, often defined by participants as searching using keywords, was seen as more limiting, less interactive, stimulating and rewarding than generally browsing. One participant reported that physical browsing in a library was more likely to lead into other avenues than browsing electronically. Browsing for some, especially when conducted at a more resource rich library than the CSU Wagga Wagga Campus Library, was also considered to be faster in retrieving information when compared to retrieving information from databases.

Additionally browsing was seen to be linked with a range of other activities such as the physical activity of walking to the library to escape email and telephone calls and other interruptions, to clear and/or refresh the mind, to relax with colleagues by browsing through shared journals in the tearoom and to be mentally stimulated. The ease of access to multi-disciplinary journals, lying on a table in a tearoom, appeared to be seen as exposing one to potentially relevant material that would not be obtained by more purposive, directed searching. Because such information-seeking activity was away from the office it was often seen as a good use of time and was able to take place between meetings and lectures. This was compared to more purposive seeking requiring more preparation and organisation, use of computers, which may or may not be available, and directing a search with a limited time frame.

As discussed earlier in this section browsing is a non-threatening form of information seeking; self-esteem, feelings and emotion are not threatened because the only participant is the browser. Compared to more structured searching, the outcome of browsing was, at best, seen as successful and stimulating and, at worst, a decision by the browser that the browsing was a poor choice. Because browsing is often conducted in conjunction with other activities, there may not be such a heavy reliance on a successful outcome.

Serendipity

Perhaps more so than browsing on the World Wide Web, browsing in libraries was seen as likely to be serendipitous. It enabled material to be found that normally would not be found.
Part of my serendipitous way in which I acquire information, I don’t know whether it is going to interest me until I’ve actually seen it, every now and again [I] work through the journals and pull something out—library journals, bioscience journals. I will look at the headings just to see if there’s something there that is related to something I am interested in. I like the environment of a library. There are a lot of intangibles there that I would be bitterly disappointed if they took it away. (Participant 15)

Schmidt (1999a, p. 93) also found this in research carried out at the University of Queensland: ‘resources discovery for all is still serendipitous in many instances and does not use all of the structured approaches available’; browsing is still a significant component of the search process.

The participant above saw the Web, in comparison, as controlling, organized and directing the user through pre-defined pathways:

So while there are a lot of possibilities with the Web you do not have the same sort of control as you do when you go into a paper based environment...I feel directed sometimes...I don’t feel that in the library...there are certain choices that have already been made by librarians about what material is there, but it is not so overt. It’s very different control over what you access. (Participant 15)

For a few participants browsing, either in the Library or on the Web, was seldom done, usually because of time pressures or because searching was directed more towards specific subject areas. But browsing in the Library was becoming a less frequent activity for most participants with less time available because of extra administrative activities, lack of relevant material available to browse, and the increasing potential of browsing the databases available online and the Internet. Browsing on the Web also suited browsers who were able to follow one link to another link.

**Browsing and the connection with specific subject areas**

Some subject areas seem more suited to browsing than others and browsing in these areas seems quite purposive. For example for the literary bibliographer looking through hundreds of references, the search is not looking for specific items but looking for anything that could be potentially useful where ‘you are not quite sure until you see it, whether it’s going to be of any use or not’ (Participant 9).
But for the academic working a more defined area, such as chemistry, the identification of the usefulness of a reference is probably easier.

Conclusion

Affect strongly influences motivation, and motivation drives behaviour. The idea of motivation influenced by affect and a range of other influences can be seen in the work of social psychologists such as Fiske and Taylor (1991), whose ideas were introduced in Chapter 2. The discussion in this chapter on self-esteem, geographical and intellectual isolation, information overload and browsing is related to the concept of affect. It is a persuasive influence helping to direct the path information seeking will take.
CHAPTER 7

CONCLUSION

In some cases IT-assisted literature access is seen as a more efficient way to operate. However efficiency is not the only parameter. Academics still want to have access with people, libraries and books...an academic is someone who reads, goes to libraries and interacts face to face with other colleagues in the field...academics still need to interact with people...creativity is relevant (Barry 1995, p. 180-181).

The major aims of this research, to explore the information-seeking behaviour of university academics in a changing technological environment and to identify the role motivators and demotivators played in influencing this behaviour, were realised. The study was very much focused on examining the information needs of academics at a rural university in a variety of disciplines.

The major findings, discussed below, may be encapsulated in the following statements:

- Information-seeking behaviour is very individual.
- Technological change was a strong underlying theme in this research, but it was not the sole change agent.
- Affect associated with personal constructs strongly influenced source selection.
- From personal constructs a range of motivators and demotivators in a dynamic interplay became associated with sources.
- Attached to library and librarian image are motivators/demotivators and these act as major influences on source selection and use.
- Images of self are important influences in information-seeking behaviour.
- The role of the invisible college in intellectual discourse has changed but remains important.
Information-seeking behaviour

The following figure (see Figure 2) represents the information-seeking behaviour of university academics as identified in this study. While the results of the study cannot be generalised, the steps in the figure represent what each academic who decides to engage in information-seeking behaviour experiences. It differs from existing models of Information Seeking Behaviour (ISB) in its emphasis upon the dynamic nature of motivators and demotivators influencing whether or not the process will commence and, once it has commenced, what direction it will take.
Personal constructs of academic in situation (work environment)

Demotivators

Motivators

Information Need

Demotivators

Motivators

Information Seeking Question

ISB—Information Seeking Behaviour (Including Source Choice)

Motivation (Motivators and Demotivators)

Towards ISB

Personal Constructs

INTERNAL AFFECT
(e.g., personality, attitudes, emotions, self-esteem)

EXTERNAL SOURCE
(e.g., image of source)

TIME
The figure represents academics finding themselves in a work situation where information was needed to solve or address what became an information need. The combination of an academic in a work situation and the need to know (cognition) is the catalyst for creation of an information need. As reported in Chapter 2 cognitions provide interpretations of the situation (Fiske and Taylor 1991), but motivations decide if behaviour is going to occur. An information need may be consciously activated by the formulation of an information-seeking question or it may remain at a conscious or subconscious level until it is activated. Motivators and demotivators relating to the need for information determine if an information need will be formulated and then activated, that is an information seeking question activated. Motivators and demotivators will again influence whether, and which source is chosen to continue the behaviour. The remaining step in the ISB is selection of source. The selection of source was determined by perceptions of time, image of source, source characteristics and feelings, attitudes, emotions towards the source (ie, motivators/demotivators).

In practice ISB in this study seemed to often involve a combination of sources as experience with each source during ISB informed the information seeker about the direction of the next step in the process and the next source selection.

**Individuality**

The strategies used by academics in their information-seeking behaviour in each case are unique and individual. The results of this research closely follows that of Reneker, Jacobson & Spink (2000) who found ‘analysis and understanding of ... needs and barriers to successful information searches can inform an organization of methods of improving the information environment’ (p. 13). Their research results indicated:

> The importance of the context of the information search, the fundamental role of the environment in shaping the information needs of the seeker, and the perception of the information seeker of his or her information environment’ (p. 14).

The quotes below made by participants in this research point to the individuality and uniqueness of information seekers who participated in this study. The first quote indicates how the pressures of everyday work and learning new ways to use the library are forcing a reappraisal of what it is possible to achieve and how, when the information-seeking task becomes too ‘hard’, the established way of information
seeking takes over. The second example represents a confident user whose information-seeking needs are greater than they used to be and who recognises the role of the library as very much one of providing access and rapidity of satisfaction of information need. The third example represents the confident seeker of information who probably uses the library little as his information needs are largely satisfied through his personal networks.

the changes that the library is being forced to accommodate are forcing me to change my habits of information retrieval and attitudes to what's possible, and on a given day, if life is very full and busy as it is almost every day, I feel that I can go back to my own resources more, or as much as I used to. (Participant 21)

a library now to me would be that final thing that I go to when I get stuck, so library staff have to be much more skilled I think, because I am going to come and say, I'm stuck. You solve the problem. You tell me where to go from here. Whereas once where you would probably have gone to a library with much simpler questions, we are now going in with much more complex issues we want solved...I do want rapid access to information...rapidity is the thing which has changed so much in the last decade. (Participant 7)

I'm just in this little niche now where I am looking for similar sorts of things all the time. Maybe I am cutting myself off from other areas but I don't think so. I think I've got pretty good access to what I want. Yes, that's probably a good point. I got rid of all the peripherals and I now know the area I want and how to get what I want very efficiently and that's it, you know. I don't need to do much more. (Participant 28)

Many more examples from the research could be used to indicate the individuality of information seeking behaviour. Recognition of this individuality is the first step in attempting to improve information services to academics. It cannot be assumed by information providers, such as librarians, that the academic as an information-seeker is confident about library use, computer literate in terms of electronic access to information and does not need to move outside his/her office environment to find the answers to questions. Academic information seekers move between sources until their needs are met (Chen & Hernon 1983). There is often no allegiance to a particular source but rather a use of the sources most likely to provide the answer; each information-seeking experience requires a different strategy. There is a challenge, especially for the providers of information services, to present a service to users that goes beyond a simple linking of question with answers in the form of World Wide Web sites or references from a database. The information service provider needs to engage with the user and be a partner in the information-seeking process. Not all users will require this,
some users see themselves as independent and competent seekers. But to all users an opportunity must be given by their information providers to assist them personally in their information seeking in a more proactive way.

**Technology and information-seeking behaviour**

The role of technology in influencing information-seeking behaviour was found to be important as a change agent. But, in this increasing technological environment in which academics were finding themselves, other change agents or drivers of change were also observed. These included the following:

- pressure on academics to become more involved in research and intensive competition for reduced amounts of funding
- decline in university budgets and resultant reduced funding for conference attendance
- decreasing numbers of academics in some discipline areas
- reduced library budgets and cancellation of serial titles and reduced monograph spending
- higher student/staff ratios
- increased administrative loads
- increasing requirements for academic staff to be multiskilled, for example to teach, to research, to administer, to participate in committees, to be active in their academic community.

It is extremely difficult to separate cause and effect in considering the influence technology has played in changing the information-seeking behaviour of academics in this study. One could ask, for instance, what came first at CSU? : An imperative to undertake more research and publish results? Or technology making available greater access to information?

**Affect, personal constructs and motivation**

The role of affect in information-seeking behaviour was found to be more persuasive than first thought. Kuhlthau (1991, 1993), for example, emphasised its role in stages of information seeking relating to an imposed query as the seeker traveled through a series of mood, attitude, emotional changes in their information search. Wilson (1981, p. 9)
acknowledged its role in motivating information-seeking behaviour as the seeker in a situation ‘coupled with the individual’s personality structure’ created affective needs such as the need for achievement, self expression and self-actualisation. In Wilson’s view ‘the individual would be perceived not merely as driven to seek information for cognitive ends, but as living and working in social settings which create their own motivations to seek information to help satisfy largely affective needs’ (p. 10).

The research for this thesis indicates that the affective realm is often at the root of choice of source and determines if the cognitive need will or will not be met. Information-seeking behaviour is very individual and has been personally constructed through a combination of motivating and demotivating influences. Academics in this research have their own unique approaches to their information-seeking behaviour fixed in their personal constructs. Each approach has been constructed and is in a continual state of reconstruction. The affective realm has been shown in this research to be a powerful influence on personal constructs relating to an academic’s role in seeking information for research and teaching. It plays a major role in creation of attitudes, feelings, beliefs, perceptions about technology, choice of source and image formation relating to source. For example, as mentioned in Chapter 6, Participant 25 found some people in the library a ‘bit forbidding’ so questions were not asked of them. The affective realm lies at the root of motivation to engage in information-seeking behaviour and is largely based in experience.

As discussed in Chapter 2 experience is embedded in personal construct formation and is the single most powerful determinant of the direction information seeking will take. Each academic has been exposed to a variety of experiences that make up individual information-seeking experiences and influence the direction information seeking will take in the future. It is too simplistic to suggest that recent experience with technology is responsible for most of the changes to an academic’s information-seeking behaviour over the past five years. Technology may have changed personal constructs relating to source selection but other change agents, discussed in earlier chapters, have also played a role. An academic’s subject discipline is another powerful predictor of what sources will be selected in information seeking. There are numerous studies documenting the different approaches of subject disciplines to information seeking and, within these disciplines, there are different approaches relating to specific subjects. There are other complicating factors such as the complexities of source selection in multidisciplinary
studies, as Westbrook's (1999) work illustrates. The work situation of the academic interacts with the need to know, cognition, and motivation to initiate information-seeking behaviour. But without motivation there can be no behaviour. The strength of motivation is shaped by the balance between motivators and demotivators that are attached to personal constructs. Motivators and demotivators are vital ingredients in understanding the reasons for source selection towards the satisfaction of an information need and a successful approach to information-seeking behaviour.

Typically an academic in this research had pre-existing personal constructs relating to information seeking, built up over years of experience and changed by new external influences such as source use. Internal influences such as feelings, emotions, attitudes towards these new experiences acted on existing personal constructs. The resultant personal constructs formed, for example, about use of databases, give rise to motivators and demotivators. For example Participant 22, as reported in Chapter 6, found technology a problem. She was motivated to undertake database and other online searches with experts because as an independent searcher she thought she would invariably get stuck.

**Electronic source selection**

Electronic sources of information are also very important in information seeking. When electronic source selection is considered, experience also is a strong influence and there is a range of motivators/demotivators influencing which choice is made. Choice of electronic sources is again made depending upon prior experience with it and upon the information need. This is confirmed by Kuhlthau (1998) in that:

> Users predict from constructs formed through prior experience what will be useful and expedient in information seeking. The predictions determine the sources that are used, the sequence in which they are used, and the information that is selected as relevant from within the sources. Conversely, users' predictions determine sources, information, and ideas that remain unused or are discarded (p. 365).

New sources, not previously experienced, are also chosen at times although the tendency is for continuation of prior habits of information seeking and hence use of the same sources. Sometimes new sources are chosen but the pattern of searching remains the same. New methods are gradually incorporated into existing patterns rather than exchanged for the established methods of information seeking.
Electronic source availability has increased dramatically over the past decade. Sources previously only available in print form, and difficult to access, are now available electronically. Considerable amounts of full text government information, information from international organisations, not available previously, are now available through the World Wide Web. Electronic availability for academics from the CSU Library and from the libraries of the world from their own offices has reduced the necessity for many academics to visit the Library in person. Even with problems regarding packaging of some of this material reported by academics, electronic access has been welcomed.

This research found that, while academics' information-seeking behaviour had changed, the change had taken place over a very long period. Currently, and most likely to a greater extent in the future, academics with an information need satisfy more of that need by direct interface with computers. Librarians are increasingly answering questions electronically without any face to face reference interview, and users are becoming more independent and answering questions by use of the World Wide Web and databases. Nevertheless the extent of reliance upon electronic sources of information in information-seeking behaviour is very much dependent upon discipline and subject studied within that discipline. Academics interested in the health or business areas, for example, are well served by a small number of specialised databases. Those academics involved in the humanities areas generally have access to less well-developed databases and have to rely upon a wider range of sources to satisfy their information needs. Recent qualitative research into attitudes to, and use of, electronic resources also suggests different responses depending upon discipline studied and library used (Australian Library Collections Task Force 2001a; Australian Library Collections Task Force 2001b). This is supported by Frank et al. (2001, p. 95) who suggest ‘Scholars fall into a number of varied research disciplines, cultures, and generations that require distinct information services delivered in a variety of formats’. The perceived quality and availability of electronic access to sources can motivate or demotivate information-seeking behaviour and it did for academics in this research.

Only a small number of participants indicated little contact with the library and librarians. Of these academics some had well-defined approaches to information seeking which may have involved using resources online which had been subscribed to by the library while others did not seem to engage in any information seeking using the library. It is thought that for these participants the library was often not consciously
recalled as the source of resources online. Part of the reason for this may be the increased availability of resources via the World Wide Web which participants did not distinguish from resources provided by the library.

**Images of library and librarian**

Images of the library and librarian were created by many experiences and acted as motivators/demotivators influencing information-seeking behaviour. There was no one image identified of libraries or librarians. Images were often based on prior experiences and perceptions of resources availability and accessibility, which were particularly found to be important in image construction and the resultant motivators/demotivators to using library services.

The vast majority of academics held positive images about the role of the librarian and library. There was no suggestion of the librarian as a 'trump with a bun' as often portrayed in the literature. Importantly, participants identified a number of roles, summarised below and outlined in Chapter 5. This is important because these roles encompass functions the librarians are generally thought to perform or which academics would like to see performed. They could be used as motivators relating to library use.

- Librarian as keeper of the collection
- Librarian as creator of independent user
- Librarian as 'knowledge navigator'
- Librarian as information technician
- Librarian as document deliverer
- Librarian as educator of academics
- Librarian as educator of students
- Librarian as interactive partner
- Librarian as information provider

There was far from universal acceptance among participants about the degree of importance that they would ascribe to each role. There were also varying degrees of success attributed to the librarian's ability to perform each role. Some roles attracted positive and negative feelings, as well as a diversity of views as to what should be the role as compared to what it was. It was a positive sign that participants identified key
roles for librarians in this technological age. There needs to be more research carried out into ways of linking the roles of librarians as defined by library users to the roles that librarians define for themselves. There are also many types of library users, with different approaches to information-seeking behaviour that need to be recognised; no one type of service fits all. As Barry (1995) says:

So often, training and support is offered from the perspective that everyone has a need and is motivated to find out about the tools and learn how to use them. It would seem that only if training and support can be targeted in response to meeting the perceived needs of the user, will they be successful (p. 186).

The dilemma for the service provider is how to tailor services to suit different types of information-seeking behaviours, information needs and perceptions of librarian role.

While academics still need to interact with each other to exchange ideas and to stimulate ideas it could be asked: Does the academic still need a librarian to ask for assistance in satisfying their information needs? For the academics in this research, the roles identified above suggest that some degree of interpersonal interaction between librarian and user is a given and is necessary. In the paper by Frank et al. an increase in this interpersonal interaction was proposed as a way to increase the meaning and relevance of the library. For example:

While traditional in-person visits to libraries continue and electronic information resources provide libraries and their respective clientele with innovative and effective access mechanisms, libraries cannot ignore the possibility, and in some cases reality, of becoming passive providers of information. The net result is that librarians need, and must embrace the opportunity, to engage scholars with innovative and effective services that stretch beyond traditional library boundaries. Essentially, the move to electronic services and information provision reduces the physical role of the central academic library and drives librarians to adapt library-bound services, transcend traditional boundaries, and move from reactive to proactive service models (Frank et al. 2001, p. 91).

Nevertheless it is difficult to assume that the degree to which librarians and libraries have been relied upon in the past to satisfy information needs is the same today, especially with the potential for a higher degree of independent information seeking. The extent of librarian-user interaction in the past, however, is difficult to assess. We simply do not know what it was beyond statements about the central role of the library.
in a university. In terms of this research there seems little reason to question Taylor's (1968, p. 82) comments in his classic paper on information seeking, and referred to in Chapter 2. He concluded that whether or not a librarian is asked for assistance is based upon factors such as 'the inquirer's image of the personnel, their effectiveness, and his previous experience with this or any other library or librarian'.

Librarians will need to find out more about what their users think of their roles and how they perform them. It is not enough to expect resources availability, information filtering and user education to be the catalyst for library use, in person or remotely. It may be that too many assumptions have been made regarding the needs of users and the services users demand.

The power of the academic to obtain more information more rapidly, with little help from intermediaries, cannot be disputed. But academics need to be creative and a part of the development of this creativity is the need to be information seekers and to interact with those who provide information, including colleagues and librarians. If one reflects upon these scenarios then it could possibly be deduced that the academic library for academics, may

- exist outside of the library's walls in the academic's place of work
- continue to serve a more limited, book-seeking clientele
- continue to act as a document delivery and supply agency, and maintain electronic databases for access
- continue to provide user education classes and play a proactive role in filtering and evaluation of resources
- become largely irrelevant for some academics as they use their own sources for information seeking

Recent literature focuses upon the increasing need for librarians to play a role in interpreting, analysing, selecting relevant information for their users. For example Griffiths (2000) suggests that 'The creation of validated collections of digital materials and their relationship to validated non-digital materials will offer a significant value-add to the serious information seeker'. Others, such as Tenopir (2001), refer to the increasing need to provide instruction in digital library and World Wide Web use to users. Herring (2001, p. 217), on the other hand, suggests that academics 'do not
consider the Web to be sufficient as a sole source to deliver the type or quantity of research information they need...'. But if these tasks are to be carried out then there is a need for human interaction with users if the best use is to be made of the increasingly sophisticated and numerous means of access to information that are available. Many participants had feelings of inadequacy about searching and wanted assistance, for example Participant 22 said: 'I much prefer to do a search with an expert who I can call on when I get stuck as I invariably do...'. Participant 26 felt changing technology was a problem for him in undertaking his information seeking:

that’s also a bit of a hindrance...unless you are using information seeking very regularly, if you leave it for a few weeks you can be sure it’s going to be different. You can never be confident in what you already know.

This researcher believes that there is a real challenge for the library profession here. The information professions have a human services orientation and we know that people prefer to get their information from other people. But at the same time library services to users, especially to academics, are increasingly being seen in terms of remote access, often with potential for online user education rather than face to face instruction.

The academic library will need to more carefully define who its core users are and what its core role is. It may be that, apart from some general key roles that it must perform such as supply of databases, that it can target user populations who are in most need of assistance and concentrate on services to those user populations. One way to do this is to become more proactive and take the image of the library via the librarian out into user populations.

Images of self

At least one third of academics interviewed indicated that they were concerned that they might appear to library staff as being unable to use, or having difficulty in using, the library. Some participants avoided library staff so as to not appear out-of-date or unable to navigate the OPAC or databases. This avoidance behaviour took many turns; for example browsing on the shelves was seen as non-threatening and potentially rewarding, and was engaged in in preference to seeking advice from librarians about using the catalogues, especially if changes to the interface had occurred since the last time it was used. As Palmer (1996 cited in Spanner 2001, p. 359) noted 'The potential
for discovery was great enough to make browsing worthwhile. Browsing was essential
to the gathering of information and the probing of new and peripheral areas’.

The negative image some participants held of librarians and/or libraries and the
potential threat to their self-esteem when asking a question is another example.
Perceptions of being faced with information overload if library staff were approached
for assistance also led to browsing or often frustrating searches for information through
the World Wide Web and databases. Whether or not library staff were approached for
assistance also depended upon concepts of self efficacy held by respondents. In some
cases, if self-esteem was not considered to be threatened by asking for help then it was
requested, but protection of self-esteem was a powerful deterrent to information-seeking
behaviour in the use of libraries. Research by Hull (2000) on experience of users in
academic libraries in the UK corroborates these findings. Academics, while generally
adept at finding what they want, nevertheless experience a range of problems when
using libraries, the importance of which may well be underestimated by library staff.

According to Dougherty (2001, p. 266) ‘a disconnect is developing between what
libraries offer and what customers want’. Further investigation of user needs should
occur in order to identify service priorities. In this research there seems to have been an
assumption on the part of information professionals that the services they were
providing were the services participants in this research wanted; this was not always
found to be correct. There may well need to be a complete repositioning of ‘immediate,
interactive point-of-need service to remote users – whether they are in or out of the
library, whether the library is open or closed’ (Lipow 1999, p. 8). If the service
expectations of information professionals could be matched with what users believe
should be provided, in further research, this may lead to better understanding between
the two groups and improved services. A typical academic library user was not found to
exist in this study. There are many types of users with varying degrees of information-
seeking confidence. Supporting this finding Marie-Jose Griffiths (Hoffman 1999, p.
196) asks a question in a discussion on users and their use of information: ‘Given
different information seeking patterns, can end users be spoken of as one category?
How does one design information products that will be used by a wide range of
people?’ Assumptions for service should not be made based upon a belief that there is a
knowing, confident, experienced information seeker.
As discussed in Chapter 5 some participants saw potential for librarians and academic staff to work closely together for mutual appreciation of their respective roles. Many participants saw the potential for librarians to be ‘central to the teaching process’ (Participant 22) and part of an ‘interactive partnership’ (Participant 20). In the words of Participant 18, cited in Chapter 5, there needs to be better ways of facilitating the librarian and user relationship. There is:

an us/them mentality where we have most or all of the librarians located in the library and all the academic staff located in the academic offices, but it just begs the question to whether that’s a facilitating way to do it. I think there may be a better way in fact to have some of the librarians located working alongside and next to academic staff to appreciate what they bring in relation to them, in relation to their academic roles.

On a different note Participant 21 thought a library needs to be seen as ‘a place whose value and meaning is defined by the users’.

**Invisible college**

Information-seeking behaviour, as mentioned above, is individually constructed and the influence by other individuals upon it has been seen in this research to be of primary importance. People prefer to go to other people for information. This is not a new finding (Chen and Hernon, 1983; Grosser, 1989) but it has become more significant with the trend to non-mediated electronic access to information. To the academics in this research these points are still as relevant today as in 1989 when Grosser carried out her research. Serendipitous information gathering often needs casual, personal interaction. In the academic community it is the invisible college and its special feature of personal interaction and exchange that plays a dynamic motivating role in information seeking and the exchange of ideas.

The role of the invisible college in promoting academic discourse remains extremely important. In this highly technological environment academics still talk to other academics and use their personal libraries and share journal subscriptions. Much information seeking though, as Barry (1995, p.112) points out, may not be seen as information seeking because
much information acquisition is informal, like chats over lunch with colleagues... or leafing through papers on their desks, and is not seen as "information gathering" but as an everyday part of their working life.

Many academics have been doing research for several years and their recollections of their information activity ‘is not necessarily easily retrievable to consciousness’ for discussion in an interview situation or not seen by the participant as information-seeking behaviour (Barry 1995, p. 112). Nevertheless in this research academics were still found to attend conferences, although generally less frequently, and the personal contacts made through attendance were still considered the most valuable aspect of attending. Due perhaps to the decreasing financial ability of academics to personally attend conferences, and in some cases, reductions in numbers of their discipline group, the function of conferences as an opportunity to network appears to have grown in importance. For academics in this research virtual conferences had not yet become a substitute for personal attendance at conferences. At the same time as financial restrictions may have reduced ability to attend conferences there has been an increase in what might be called electronic substitutes for personal conference attendance. There has been a dramatic increase in contact between academics using electronic communication such as discussion groups, listservs and email. The overall result for many academics may have seen an increase in personal interaction with other academics. This has assisted in reducing feelings of geographical and intellectual isolation, although this is still a problem. Additionally the exchange of pre-prints from conferences has been facilitated by electronic access and has gone some way to satisfying concerns about inability to attend conferences.

Even with this dramatic increase in access to electronic means of communication many academics indicated that they felt increasingly isolated from their fellow academics. This situation may be unique to academics in regional universities such as CSU where academics felt physically isolated from colleagues working on another campus or in larger cities. More than half of the academics in this research felt intellectually isolated at times, concerned that there was no one to turn to for advice or with whom to engage in creative dialogue. There is a natural desire of human beings to communicate with each other and traditionally, personal interaction has been the most common channel chosen by academics. It seems natural, for the reasons outlined above, that many still prefer this channel to others. It is premature to indicate the effects electronic means of communication might be having on this natural desire for personal communication.
Once again, personal constructs, as formed through experience, provide the template for action. It may be that an academic’s experience with electronic means of communication is not yet at the stage where the templates have been dramatically altered to reflect the recent technological changes.

Methodological problems and study limitations

The research findings need to be considered in the light of the following limitations

- This was qualitative, exploratory research and as such used a relatively small number of participants limited to only one campus of Charles Sturt University. The number interviewed, when those academics working in the same school as the researcher are excluded from the total number interviewed, was approximately one in seven academics on campus. Although it was considered that information redundancy occurred towards the end of the interviewing of thirty participants the results are limited to this sample and cannot be generalised to other campuses of the University or to other settings. Nevertheless many of the findings confirm those of other research reported in the literature.

- There was potential bias in selection of participants, although objectivity was striven for. The researcher has been an academic at the University for over twenty years and most respondents were known to him, even though immediate colleagues were not included. Selection was based upon ability to gather useful data from a cross section of the academic population. This sometimes meant approaching academics who were likely to be willing to be interviewed and provide useful information. It was disappointing that several academics identified as potentially useful to the researcher, and not known to the researcher, declined to be interviewed. It seems that for many academics knowing or knowing of the interviewer was a deciding factor in agreeing to be interviewed. However it is unlikely that if a higher proportion of those interviewed had not been known to the interviewer the results would have been very different.

- Not unexpectedly the research revealed differences between academics employed in the five faculties of the university – Arts, Science and
Agriculture, Humanities and Social Sciences, Business and Health—who were interviewed. There are differences between faculties and within faculties in approaches to information seeking. Because of the diversity in subject background of participants interviewed, clear patterns of say historians, or agricultural scientists, could not be identified. Restricting the research to interviewing a few carefully selected subject or discipline groups may have realised more definite patterns of information-seeking behaviour. The results represent the overall patterns of information-seeking behaviour identified through participant responses.

- The term 'barrier' created considerable problems in trying to understand influences on information-seeking behaviour and yet it was a key term used in the literature and in the study. Participants were asked about any barriers they had identified in their information seeking and initial data analysis used the term. Examples of some of the categories identified were 'barriers-physical', 'barriers-psychological'. As the analysis progressed, and remaining participants were interviewed, the researcher became concerned about the use of the term. As is typical in an ethnographic study interviewing, data analysis, further interviewing and analysis took place in an iterative way (See Chapter 3 of the text). The literature used the term 'barrier' exclusively to represent some obstacle in the path of trying to achieve something and yet in this study this meaning did not seem to represent clearly what the participants meant. As well as discussing a range of barriers that prevented or hindered information seeking participants also pointed out positive influences that facilitated information seeking.

Motivation was considered a more appropriate umbrella term allowing use of motivators and demotivators to represent opposing forces. The use of motivators and demotivators in the literature of psychology, social psychology and management and related areas was examined. Also interviews with academics (Connors 2000; Fromholtz 2000) with qualifications in the psychology and management areas were held and their views were sought on the use of the terms related to motivation. As with the term 'barrier', little was found discussing use of these terms in the literature
but the academics consulted did not have concerns with the researcher's use of the terms.

- Use of open-ended questions assumed that participants had an accurate view of their information-seeking behaviour. However some participants experienced problems in recalling their information-seeking behaviour, with one responding to a question relating to barriers in his information seeking that he did not have any barriers because he probably now subconsciously found his way round any that might have existed. Many participants identified several information-seeking behaviours depending upon their information question. Generally speaking it was thought that most respondents did have a clear idea of their information-seeking activities.

- The primary method of data collection was interview although this was supported by data from diaries kept by the researcher of the interviews, immediate post-interview discussions, comments made on interview drafts by participants and some emails relating to initial participant commentary. Although some further triangulation of data collection methods was considered apart from use of the literature, such as a closed question survey, it was rejected because of its potential to confuse results in what was an attempt to remain as close as possible to the requirements for an ethnographic study.

Key issues

A number of key issues emerged from the study:

Technology will continue to play a key role in influencing the direction information-seeking behaviour will take. However it appears that even in an environment such as a university where staff could be considered to be knowledgeable and confident about its use, there are significant numbers of staff who feel their self-esteem is threatened when faced with needing to find information. For many academics in this study there was considerable lack of confidence in their own ability to find information, to use and access databases, to approach library staff with questions without feeling a threat to their self esteem, to generally use technology. Perceived negative experiences with sources produced a reluctance to approach the same source in the future. Mellon’s
(1986, p. 160) research on students is applicable to many of the participants in this study. She focused on the feelings of students about using the library for research and the librarian-user relationship and found that ‘...students generally feel that their own library-use skills are inadequate while the skills of other students are adequate...the inadequacy is shameful and should be hidden, and...the inadequacy would be revealed by asking questions’. This threat to self-esteem was especially applicable to participants when advice had to be sought from librarians for help in using the catalogue, databases and the World Wide Web, either in formal user education classes or in one to one situations in the library. It may be that if user education classes covering access to library mounted resources and the World Wide Web could be held in more familiar surroundings, either with peers or in a one-on one situation in an academic’s office, then such classes would be more successful. Although already a trend in some university libraries (O’Connor 2001), the practice of actively taking the library to the users is not universal and is not the case at CSU at the time of writing. Given the range of users and their differing information needs, it is unlikely that all users would avail themselves of personal assistance. Nevertheless, it may be that a more personal approach by library staff to users seeking information may create some of those personal creative interchanges considered an essential part of academic interaction. Just as the modern library is said to go beyond four walls, it may be that the library can best interpret users’ needs by taking the library to them and identifying what it is that they need.

Electronic communication has reduced the tyranny of distance for academics at CSU, although some users still considered themselves physically and hence intellectually separated from the library. In some cases this was because of physical distance requiring a drive or a long walk but in other cases it was created by lack of in-person access to print and an inability to access databases remotely, perhaps because of CSU Library policy or funding. Of greater importance was the feeling that as academics on a campus of a regional university they were geographically and intellectually isolated from colleagues on other campuses, staff in other universities and their resources. This divide has not yet been bridged by such initiatives as digitisation of serial titles and it is unlikely to be so in the near future (O’Connor 2001). This, combined with lack of contact with other academics and professionals in some disciplines, was also considered a deterrent to creative thinking so necessary in an academic institution.
The role of the librarian and user working more as partners in the learning process was considered important by some participants in this study and it is also a suggestion found in the literature. Frank et al. (2001, p. 93) envisage an information professional working on many levels – research partner, information provider and valuable resource.

Recommendations for further research

Information-seeking behaviour is both situation – and context based – and it is recommended that university libraries consider more user-centred evaluation of services focusing upon reasons for image creation. This may involve more situation based research such as development of subject orientated focus groups of users. There is a danger that, as academic libraries become accustomed to remote electronic service and there continues to be a decline in personal visits, the library may lose sight of the needs of its users.

Further research into the use of the terms motivators and demotivators in user-centred research needs is warranted. It is recommended that consideration of information-seeking behaviour in terms of a dynamic interplay between motivators and demotivators driving behaviour would be useful. We need to understand the relative importance of motivators and demotivators of information-seeking behaviour. If focus groups and case studies, for example, could be designed with these terms it might be easier to understand the relative significance of each motivator/demotivator.

The role of affect in influencing selection of sources may have been underestimated. Motivators and demotivators to information-seeking behaviour emerge from personal constructs and closely influence source selection. Further study is recommended to examine the role of affect in information-seeking behaviour and whether there is a need for professional training of librarians in this area.

Research into user perceptions of the role of librarians and libraries and comparing these with librarians’ perceptions of their roles may assist in creating greater understanding between the two. Such research would be most useful in situation specific environments. There may be potential investigating some of the trends identified in this research regarding active partnerships in teaching and learning between academic and librarian.
Information-seeking futures

Case (2000), in applying consumer research to information-seeking research, suggests that the focus must shift ‘away from viewing the consumer as a conscious, rational “decision maker” and towards the customer as an emotional, unfocused, learning human (p. 4)’. It may well be that librarians have overestimated the ease with which their average users seek information. In the words of Frank et al. (2001, p. 95):

Information professionals cannot assume that students and scholars will view libraries as viable information options. A strategic integration of librarians and libraries into the scholarly community contributes significantly to institutional success at colleges and universities.

This can best be facilitated by human-to-human interaction, between a user and a human source where ‘meaning is shared more directly with little mediation or functional limitations inherent in current automated interactions’ (Yoon & Nilan 1999, p. 872). Librarians must engage themselves more proactively and personally in the information-seeking lives of their users and seek feedback from users to better understand their concerns and needs. If they do this they will be in a much better position to forge a partnership towards providing a desired service.
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APPENDIX 1

GRAND TOUR QUESTIONS
INFORMATION SEEKING
SEMI-STRUCTURED INTERVIEW QUESTIONS

1\textsuperscript{st}. GRAND TOUR QUESTION- Information Seeking

Could you just give me a little bit of information about your information seeking behaviour...how you might go about seeking information, as you define it.

2\textsuperscript{nd}. GRAND TOUR QUESTION- Barriers

Are their any specific barriers that affect your information seeking?

Can you tell me how you have dealt with these?

3\textsuperscript{rd}. GRAND TOUR QUESTION- Image

Has your image of libraries changed over, say, the past five years?

Do you have an image of libraries that you could share with me?

Does your image of libraries affect your information seeking behaviour?

4\textsuperscript{th}. GRAND TOUR QUESTION- Information Behaviour

Has your information-seeking behaviour changed over, say, the past five years?
5th. GRAND TOUR QUESTION- Technology

Has technology changed the way you view libraries and librarians?

Has technology changed the way you access information, your information-seeking behaviour?

Are you on any list servs?

6th. GRAND TOUR QUESTION- Future

Are there ways in which the CSU Library might better serve your needs in the future?
APPENDIX 2

CONSENT FORM
CONSENT FORM

Name of Research Project: Information seeking behaviour of University academics

Name, Address and Phone No of Principal Investigator(s):
John Mills,
School of Information Studies
CSU-Riverina
Wagga Wagga 2678
(02) 69332416

Purpose of the Research:

The proposed study, my PhD research, will investigate the information-seeking behaviour of academics at CSU-Riverina. The focus will be on the information needs of academics for their research and teaching and the barriers which prevent information needs being met. The literature suggests that many information needs are not met and/or not articulated because of problems that lie in the affective realm. Reasons for the selection of, or the non-selection of, particular information resources will be identified. Ways of overcoming barriers will also be investigated.

Methodology:
Using ethnographic research techniques respondents will be interviewed by the asking of general questions regarding their information-seeking behaviour. The answers to these general questions will be used to initiate further questions in an attempt to identify richer, more detailed data than available using other research techniques such as surveys.
Requirements of research participants:

Participate as interviewees in an initial taped interview with the possibility of a further interview. Interviews may last approximately one hour.

Data collection:

Taped interviews will be transcribed and interviewees asked to check transcripts.

To comply with research protocol please read the following statements and provide your signature in the space indicated below.

1. I consent to my participation in the PhD research project titled Information-seeking behaviour of University academics.
2. I understand that I am free to withdraw my participation any time and I will not be subjected to any penalty or discriminatory treatment.
3. The purpose of the research has been explained to me and I have read and understood the information statement given to me.
4. I have been given the opportunity to ask questions about the research and received satisfactory answers.
5. I permit the investigator to tape record my interview as part of this project.
6. I understand that any information or personal details gathered in the course of this research about me are confidential and that neither my name nor any other identifying information will be used or published without my written permission.

This study has been approved by Charles Sturt University’s Ethics in Human Research Committee.
I understand that if I have any complaints or concerns about this research I can contact:

Mr Barry Yau
Executive Officer
Ethics in Human Research Committee
The Grange
Charles Sturt University
Balhurst NSW 2795

Phone: (02) 63384 187
Fax: (02) 63384 833

Signed by: ............................................................

Date ...............................................................
APPENDIX 3

INFORMATION STATEMENT RELATING TO PhD RESEARCH
INFORMATION STATEMENT RELATING TO PhD RESEARCH

Sole Investigator: John Joseph Mills

Host Institution: School of Information Studies, Charles Sturt University

Name of the Project: Information-seeking behaviour of University academics

Purpose of the Research:

The proposed study, my PhD research, will investigate the information-seeking behaviour of academics at CSU-Riverina. The focus will be on the information needs of academics for their research and teaching and the barriers which prevent information needs being met. The literature suggests that many information needs are not met and/or not articulated because of problems that lie in the affective realm. Reasons for the selection of, or the non-selection of, particular information resources will be identified. Ways of overcoming barriers will also be investigated.

Methodology:

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Requirements of research participants:

Participate as interviewees in an initial taped interview with the possibility of a further interview. Interviews may last approximately one hour.

Data collection:

Taped interviews will be transcribed and interviewees asked to check transcripts.

NOTE: This project has been approved by Charles Sturt University's Ethics in Human Research Committee. If you have any complaints or reservations about the ethical conduct of this project, you may contact the Committee through the Executive Officer:

The Executive Officer
Ethics in Human Research Committee
The Orange
Charles Sturt University
Bathurst NSW 2795

Tel (02) 6338 187
Fax (02) 6338 833

Any issues you raise will be treated in confidence and investigated fully and you will be informed of the outcome.
APPENDIX 4

REVISED TRANSCRIPT LETTER
29 September 1999

Dear

Please find enclosed a transcript of my interview with you plus a short survey which focuses upon demographic data, which may prove useful in my data analysis.

It would be especially helpful for my research if you were able to return the survey as soon as possible in the envelope supplied. Additionally if you were able to read through the transcript and make comments/changes/additions to the text and return it to me in the near future it would enhance the existing interview transcript.

The transcript represents what I think you said, after listening to the taped interview. It has some difficult to understand text and is not grammatically correct, which is to be expected.

I am happy to talk to you about any aspect of the research; my current telephone number is 69217982 or you can e-mail me.

Thank you for your assistance.

Regards

John Mills