

**The perceptions of liaison librarians, at a New
Zealand academic institution, on the role of
researchers in the electronic journal environment.**

by

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Victoria University of Wellington
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Dedicated to my parents, Judith and Denys Partner.

VICTORIA UNIVERSITY OF WELLINGTON
School of Information Management

Master of Library & Information Studies

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'The perceptions of liaison librarians, at a New Zealand academic institution, on the role of researchers in the electronic journal environment.'

(hereafter referred to as 'The MLIS Research Project')

being undertaken by

Brent Partner

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Table of Contents

Section I: Data Collection and Methodology

1.	Introduction	1
1.1.	Problem Statement	1
2.	Literature Review	6
2.1.	Introduction	6
2.2.	Citation and Use	6
2.3.	Scholarly Communication	8
2.4.	Type of Publication	10
2.5.	Conclusion	11
3.	Theoretical Framework	12
4.	Research Questions	15
5.	Research Paradigm	17
5.1.	Paradigm	17
5.1.1.	Ontology	17
5.1.2.	Epistemology	18
5.2.	Research Population	19
5.3.	Interview	20
5.3.1.	Open Coding	20
5.3.2.	Axial Coding	21
5.3.3.	Selective Coding	21
5.4.	Definitions	22
5.5.	Delimitations	23
5.6.	Limitations	23
5.7.	Assumptions	23
5.8.	Independent Audit	23
5.9.	H.E.C Approval	24

Section II: Data Analysis

6.	Communication	25
6.1.	Direct Communication	25
6.1.1.	Access Issues and Search Methodologies	25
6.1.2.	Disciplinary Trends	30
6.2.	Indirect Communication	37
7.	Scholarly Communication and Bibliometrics	39
8.	Licensing Agreements and Copyright	45
9.	Institutional Repositories and Open Access	47
10.	Conclusion.	50
	Bibliography	53
	Appendix A	58
	Appendix B	59
	Appendix C	60
	Appendix D	62

Abstract

The objective of this project was to examine how liaison librarians perceive the role of the academic researcher in the electronic journal environment. An interview process was undertaken with twelve liaison librarians from the Arts, Business and General Science disciplines, at a New Zealand tertiary institution, to elicit their views in this regard.

Interviewees were questioned on the researcher/liaison librarian relationship in terms of their interaction involving direct and indirect forms of communication, on the topic of electronic journal publications. The direct forms of communication examined in this study, included e-mail, phone interviews and face-to-face interactions. The material placed on the Library subject resource web pages, concerning electronic journal publications, encapsulated the indirect method of communication between liaison librarian and researcher. This study was conceptualized with Anthony Giddens' "Structuration Theory" as a contextual basis.

Continuous access and search methodologies were discovered to be the predominant themes between liaison librarians and researchers engaged in direct communication, on the topic of electronic publication. Access to available information found in electronic journals proved to be the most critical factor for researchers engaged in information retrieval and dissemination. Search enquiries amongst researchers were generally found to be more about ratification of their methodologies rather than a didactic engagement on how to carry out a particular search. Though these themes were found to be universal across the disciplines, variances between the faculties examined and between academic departments within their respective faculties were discovered.

Input from researchers, concerning information on issues surrounding electronic journal publication, which is published on library subject resource

pages has been found to be negligible. Although some academic departments do have certain researchers who do engage in the publication of these pages, they are situated in a distinct minority. Information on bibliometric measurement, copyright, and licensing are placed on these pages predominantly on the initiative of the liaison librarians examined.

Issues surrounding scholarly communication, bibliometric measurement, open access platforms and institutional repositories have been found to be a part of the liaison librarian/researcher interaction, in this study. Whilst researchers do engage in these topics on a collegial level, they are also engaging with liaison librarians to better educate themselves in these matters. The principal influence on researchers, asking about these topics, is Performance Based Research Funding (PBRF), and most lines of questioning involve this facet of academic research.

It can be said that liaison librarians believe that researchers play an active role in their relationship with the electronic publication environment. The role of the liaison librarian can be seen increasingly as that of facilitator rather than educator and this role is readily accepted by researchers.

This study involved only a small research population, at one New Zealand tertiary institution and as such the findings cannot be regarded as universal to all researchers. In addition to this, the findings are based on the perceptions of liaison librarians and not researchers and although these perceptions offer a useful and unique view, it cannot be described as definitive. However this study can be utilized as a starting point for further research that examines both the views of researchers and the study of other academic institutions.

Keywords:

liaison librarians, academic departments, researchers, direct communication, indirect communication, bibliometric measurement, institutional repository, open access, scholarly communication.

Section I:
Data Collection and Methodology

1. Introduction

1.1. Problem Statement

The common saying, “Knowledge is power”, in what we now call the Information Age, is strikingly pertinent in the academic world. In the tertiary sector research arena, in New Zealand, a forum now based on Performance Based Research Funding (PBRF), both the way we access and the way we disseminate knowledge is now, more than ever, a critical factor. We now live in an environment where the inception of the electronic journal, as a vehicle for scholarly communication, has rapidly changed the way librarians and researchers utilize and perceive journal literature. In this new medium, the relationship and the means of communication between publication, researcher and the liaison librarian has changed and broken off in new directions.

The role of the liaison librarian in an academic library can be described as someone that “builds and maintains a relationship with their assigned academic department” (Shortridge, 2008, p. 1). The needs of each academic department and the researchers that work within them are different according to their specific discipline. Liaison librarians communicate with their researcher clients either directly through verbal means or indirectly via such vehicles as e-mail or internal memorandums. Traditionally, it could be said that the duty of the liaison librarian is to serve this relationship whilst the researcher utilizes this service to efficiently carry out their work.

In the conventional form of print journal publication, the relationship between researcher, publication format and liaison librarian can be seen to be very well established since the introduction of the “earliest scientific and technical journals, *Journal des Scavans* and *Philosophical Transactions of the Royal Society* in 1665” (Mahesh & Gupta, 2008, p. 59). Besides assisting the collection

development team in providing pertinent new titles for acquisition, the role of the academic liaison librarian was to act as a bridge between the publication and the researcher providing services that can be summarized in the following way:

- Contents Service: provide researchers with copies of table of contents of available journals periodically as they became available.
- Routing Service: circulating selected periodical titles to researcher end users before they were housed permanently in the library.
- Abstract Service: provide prepared abstract bulletins based on the library's resources and disseminate it to the users.

(Mahesh & Gupta, 2008, p. 60-61)

The academic researcher would then deal directly with publishers in order to communicate with their colleagues from other academic institutions.

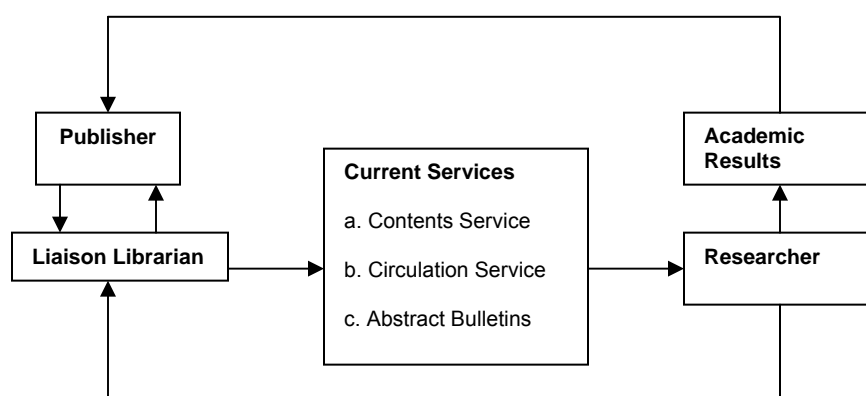


Fig. 1 Traditional relationship between print publisher, liaison librarian and researcher

In the contemporary environment of e-journal publication, the publishers themselves and the vendors that act as intermediary agents on their behalf now supply these services that were provided by the liaison librarian. Electronic packages now deal with clusters of titles that may indeed duplicate those that are provided by other vendors. The current services that were presented by liaison librarians via a standardized means of delivery are now different according to which vendor provides them (Mahesh & Gupta, 2008, p. 63-64). Liaison

librarians now have a new role in providing services that they never had to before such as to:

- “▪ liaise between user support services and researchers
- promote the transition to e-journals
- ensure that access is maintained by support services
- communicate and translate the different types of access according to a package’s type of licensing agreement
- assist researchers’ copyright concerns in the digital environment
- communicate and translate the implications of new and traditional types of bibliometric measurement to researchers
- assist users to publish their research output.”

(McKnight, Yu, Harker, & Philips, 2000, p. 124)

In addition to this, the creation of institutional repositories in New Zealand academic libraries, places the library in the position of possible publisher for researcher output. This means an additional role for the liaison librarian to act as a form of publishing agent in assisting researchers to publish by alternative means.

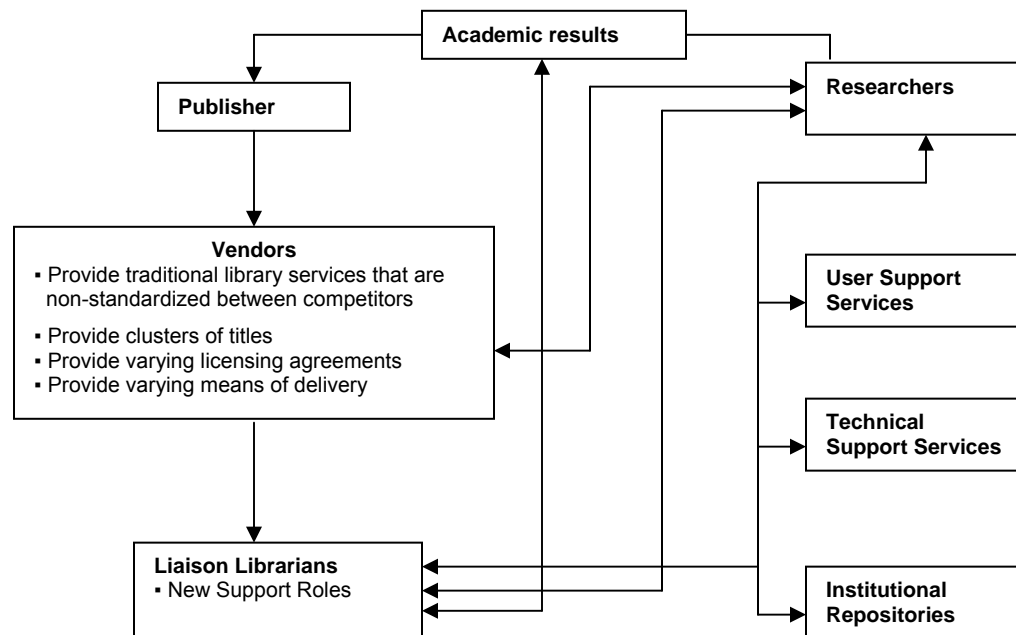


Fig. 2 Changing relationship between publisher, liaison librarian and researcher

By comparing Fig. 1 with Fig. 2, where the lines and arrows represent lines of communication and the diagrams as a whole being a form of social networking then it is easy to see that an evolution is occurring in the relationship between researcher, publisher and liaison librarian. The most obvious difference is the addition of a fourth agent, namely the vendor, that acts as a sort of mediator in the lines of communication between the original three agencies, taking the burden of the original liaison duties off the librarian and presenting it to the researcher with newer supplementary services such as the provision of citation impact and user group statistical data.

The vendor can be seen as only a possible fourth agency as in some cases publisher and vendor are the same entity. For example, Informaworld is a vendor that is managed by the Taylor and Francis publication house. The titles it offers are entirely those that Taylor and Francis offered or are still offering in print form. By comparison EbscoHost is a vendor that operates independently of original publishers and sits independently as a fourth agency offering clusters of titles from various publishers. In both cases, publisher and vendor interests are commercial, their objective the provision of information and services at a cost in contrast to academic libraries that offer information services to their user group within the same organization.

As publishers and vendors operate commercially, other agencies are now operating to provide librarians and researcher with independent usage data. Independent organizations set up with guidelines laid down by initiatives such as COUNTER and SUSHI (Morrison, 2006; Pesch, 2007) provide usage data services to library organizations of all the vendors that provide services to them. They deliver their service in a standardized format that is separate to publisher commercial objectives. These agencies are commercially motivated however providing an objective set of results motivates their profit margins.

Under PBRF requirements in New Zealand academic institutions, the researcher too is now bound by commercial considerations. The researcher functions in two ways that is at times at odds with each other. As authors they function in the commercial sense. They need to publish the work they have done in order for their academic departments to be successfully funded in the future. They do not always directly profit from this funding, however their respective departments need to be successful in order for their salaries to be assured. However, researchers also operate as information gatherers and readers and this function is not necessarily commercially motivated. This side of their work is motivated by enhancing the canon of knowledge specific to their respective discipline and can be seen as more service orientated.

It is a reasonable assumption to make, if the relationship and methods of communication between the original three agencies has changed, and that the technical and commercial environment is also different, that then the perception of researchers by liaison librarians must have also changed. At the most fundamental level, the vocabulary used between researcher and liaison librarian must have altered. In tune, with the different type of service that the liaison librarian now provides, it stands to reason that the themes of inquiry statements made to them, by researchers has also developed. The future development of institutional repositories as an alternative source of publishing work originally designed for the e-journal model places the liaison librarian in the role of publishing agent that must alter their perception of researchers.

This study does not measure the level of change that has occurred, it does however provide a contemporary insight of liaison librarians' perceptions of their researcher clients. Analyzing the results of their recorded views, reveals areas for future research in this field, as well as revealing more immediate contingencies that could assist and enhance the librarian/researcher relationship. The problem that this examines is how do liaison librarians, at a New Zealand academic

institution, perceive the role of the academic researcher in this relationship between agencies?

2. Literature Review

2.1. Introduction

As discussed in the last section, one of the roles of a liaison librarian, in an academic library is to service the relationship between research literature, author and the reader. It can be assumed then that one of the prime ways of servicing this relationship is to acquire the most relevant literature to service the user's needs. Traditionally, with print journals, aside from cost, the citation impact factor was a prominent criterion by which libraries chose journals for acquisition (Saha, 2003, p. 42). With the advent of electronic journals, usage statistics have become another factor to be considered and is now recognized as an "emerging area of bibliometric research" (McDonald, 2007, p. 39). Usage statistics can inform a library what is being used, how often it is being used, how a database is being used and when the content is being accessed. The predominant advantage of usage statistics over citation analysis is that it provides information of the total readership and use, not just that provided by academic authors. By analyzing current library science information on citation, usage and scholarly communication along with other literatures concerning the lines of communication between the agencies concerned, we can begin to answer the questions, in relation to the aforementioned problem statement.

2.2. Citation and Use.

In order to research this problem, it is important to understand the nature of citation and use and initially examine which studies have looked at this facet in its pure statistical form, without the context of practical application. It is important to

see citation impact factors and usage statistics as tools that can be applied to varying practical contexts. A study on the relevance and delivery of usage statistics used in 32 public tertiary institutions in New Zealand including universities, polytechnics, institutes of technology and colleges of education concluded: “different academic libraries had differing needs from vendor usage statistics” (McDowell & Gorman, 2004, p. 341). These needs varied from issues such as making collection development decisions, preference for data delivery formats, delivery methods, terminologies employed and the ability of the data sets to be compared to statistics provided by other vendors.

Eugene Garfield first introduced the idea of a citation impact factor in 1955 (Garfield, 2006, p. 90), basically an index based on the frequency with which a journal’s articles are cited and it has, as a concept, been extensively studied. Its validity in relation to the electronic journal has been the topic of various studies. Older studies (Blecic, 1999; Harter, 1998) concluded that the introduction of the electronic format had little implication on citation impact, however more contemporary research such as that undertaken by Susan Herring (2002, p. 338-340) concluded that citation impact of electronic resources has increased exponentially, reflecting the growth of scholarly communication in the electronic medium. Various studies have concluded (Brody, Harnad & Carr, 2006; Coleman, 2007; McDonald, 2007) that usage statistics can be used to predict the future citation impact of a specific journal by employing statistical regression modeling. All studies concluded that further research was required examining the relationship between citation and use.

A study by Davis and Price (2006) that collated usage data gathered from 32 research institutions in the United States, the United Kingdom and Sweden of specific journal titles and measured the ratio of HTML and PDF format downloads and compared these ratios between institutions and tested to see identical content can demonstrate different usage patterns, concluded that even locally collected usage statistics are corrupted by an immeasurable variable. It

suggests that the design, usability and access of the publisher interface can directly affect the amount of use a journal database evokes. This renders the “pure” quantitative evaluation of a journal or database as incomplete. Choices made available to the user such as PDF and HTML full text formats, the pathways provided to various formatted information, and the differing ways of access and delivery of the publisher’s content are not factored in when accumulating usage statistics.

Work has been done to ascertain the information seeking behaviour of researchers using deep log analysis techniques (Nicholas, Huntington, Jamali, & Watkinson, 2006; Nicholas, Huntington, Jamali & Tenopir, 2006). Both studies used data collected from a million users making ten million item requests. Deep log analysis uses raw server data rather than processed publisher data and can be used to form associations with search and user demographic data and whilst this type of analysis proved useful in ascertaining the information seeking habits of specific demographics of users, it failed to determine why specific groups used the databases in the way they did. The data collected was used in both pieces of research, the authors creating the technical methodology and they described the study as the “first analysis of its type, hence showing an aspect of information seeking not previously seen” (Nicholas, Huntington, Jamali, & Watkinson, 2006, p. 1345). Conclusions seemed to concur that a qualitative aspect was required to determine a more accurate idea on why searchers use the databases the way they did.

2.3. Scholarly Communication

Many studies have been done to examine the relationship between scholarly communication and the electronic journal platform with varying conclusions. Predominantly the studies compare and contrast the differences in acceptance and use of electronic journals with their print alternatives (Brown, 2003; Herring, 2002; Raza & Upadhyay, 2006; Serotkin, Fitzgerald, & Balough, 2005) and the

culmination of conclusions seem to agree that the changing emphasis from print to electronic publications has been accepted by researchers as a valid mode of scholarly communication. Most studies have focused on the science and medical communities because they have been perceived as early adopters of new technologies and the amount of data to be collected would be greater than other academic disciplines.

Few studies have been undertaken that examine other types of academic discipline leaving a definite gap in the literature to be examined (Raza & Upadhyay 2006; Shen, 2007). Both studies used local populations of individual tertiary institutions. In the case of Shen (2007), the study comprised of interviews of four social science researchers from the University of Wisconsin-Madison on their information seeking behavior and results conclude that the relationship between researcher and information systems and services has become closer in the digital forum. The predominant reason suggested for these conclusions is that different systems, such as publisher platforms, library catalogues and their respective interfaces do not always integrate efficiently resulting in more time spent consulting information specialists. The empirical study by Raza and Upadhyay (2006) comprised of a survey given to sixty-two respondents at the Aligarh Muslim University and the results being quantitatively analyzed. This survey concluded that although information providers needed to speed up download times and that more cooperation was required by library staff, the e-journal publication system aided scholarly communication.

Literature on the different scholarly communication environment (Rowlands & Nicholas, 2006; Steele, Butler, & Kingsley, 2006) tends to find that the interdisciplinary requirements of research writers are varied. The Steele, Butler and Kingsley study evaluated a culmination of separate works done on publication metrics and their value across disciplines concluded that the requirements of the academic reader and the academic author were two distinct entities. In addition, they concluded that the application of publication metrics in

the research decisions in publication varied across disciplines as well. This research report was a weighted qualitative assessment that used generalized globally collected statistics. The findings of this article were relatively significant and a more localized and refined qualitative approach could reveal a more defined assessment of interdisciplinary requirements. The Rowland and Nicholas international study (2006) surveyed 5,513 senior journal authors and concluded that the move towards open access and institutional repositories required a peer review evaluation component, a newer measurable system of counting downloads was required in conventional e-journal publication, and improvement in the accessibility of articles were the three main concerns of academic authors.

2.4. Type of Publication

A paper presented through the Centre for Information Behavior and the Evaluation of Research (CIBER) examines an alternative method that scholars can communicate in the digital environment other than the commercially procured refereed journal (Rowlands, Nicholas, & Huntingdon, 2004). This was a large international survey, which cites the costs of publication and access as a large determinant in an academics choice of publication. It found that a younger demographic of academic author was more likely to embrace the open access format positively and older scholars perceived that the more established referred equivalent was preferred. It also found that academic authors, over all demographics, generally had a disdain of the commercial component of journal publication and access and did have some reservations as to the quality of the open access forum. Primarily this study looks at the perception of the scholarly journal by academics at present and how this perception may shift in the future.

One factor that this study cited as a crisis was that libraries were unable to procure all essential literatures of the electronic journal format because of rising prices and budgetary constraints thereby academic authors would likely in the future use the open access more fully. It would be relevant then, to examine

whether the same perceptions of the open access movement apply in a local study to see whether the level of desirability of an open access alternative is as strong.

There is literature present that predicts that open access will become more desirable in the future and that the traditional titles that now exist in electronic format will share more equally the primary status of front running publishers (Bosch, 2008; Hemmings, Rushbrook & Smith, 2006; Thomas, 2006). To confirm these findings a study carried out in 2008 gives empirical evidence that the trends of information seeking behavior by researchers is starting move towards open access publishing (Kousha & Thelwall, 2008). The interest in alternative means of publication in institutional repositories was taken up at the Cornell State University Library that indicates that the experience of libraries in digital initiative could “ bring many competencies to the scholarly communication process” (Thomas, 2006, p. 563). Whether these trends apply in a localised environment is looked at in this study. One of the factors to consider for this study is that, under PBRF, pressure exists for researchers need to publish in highly cited e-journals. Questions are asked if this is a major factor in publication choice.

The retention of access, collection development and copyright concerns when applied to licensing agreements have been covered in various studies (Bergstrom & Bergstrom, 2004; Masango, 2004; Stemper & Barribeau, 2006; Fernandez-Molina, 2004). All these studies indicate some discrepancies in researchers’ knowledge of this aspect of electronic publishing. However these are generalized studies and the case for a more localized look is relevant.

2.5. Conclusion

From the literature reviewed here, some headway can be made into this study to determine to what extent librarians perceive where the awareness of researcher knowledge is situated, in regards to electronic journal publication. Purely quantitative studies into citation and use do tell a researcher’s patterns of use, can

predict future citation impact, and inform how databases are accessed and used. However, such studies do not inform the reader as to how much researchers are aware or are interested in these issues.

By comparison, qualitative studies with a defined interdisciplinary scope and a narrower fields of study, define the needs and knowledge of a localized group of researchers operating under different operational contexts. To properly examine the aforementioned problem statement, this review indicates a clearly defined qualitative approach to gain the best measurable results.

3. Theoretical Framework

For the purpose of this research project, the theoretical framework shall be based on Anthony Giddens' concept of structuration (Giddens, 1979), which lends itself to both communication and information research problems. Structuration theory presents a duality in social construction and the possibilities when applying this theory to the field of scholarly communication is predictable. Firstly Giddens, delineates between social integration which refers "to interaction carried out between actors in face-to-face co-presence" and system integration which, in essence, is the level of associations between individuals and social systems that are physically absent from each other (Rasmussen, 2000, p.182-3). The factors that primarily distance these two forms of interaction are space and temporality. The rules and resources that make up these incarnations are different because of the differences in physical space and immediacy between agencies.

In terms of this research problem, the relationship between academic institution and the electronic journal publisher can be seen as a distinct model of system integration, the societal structure being the network of individual publishers through to the vendor conglomerates that distribute packages to libraries and other

associated corporate bodies. According to Giddens, “social integration is fundamental to system integration and to the systemness of society in general” (Rasmussen, 2000, p. 184), that is to say the two forms of integration though distinctly separate have a symbiotic relationship, where changes in one form of integration will have an effect on the other. In the case of this research question, the relationship between the two, leads to some interesting possibilities.

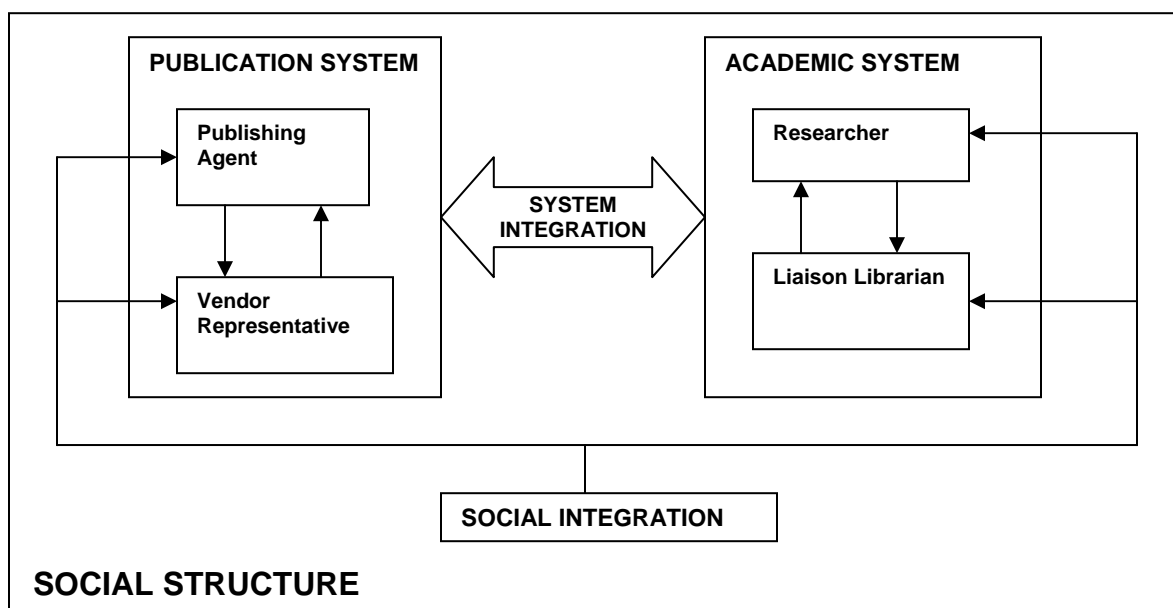


Fig. 3 Social and System Integration

A look at Fig. 3 shows that the agencies reside within their respective systems, in this case, Academic and Publication. The environment or social network of the diagram as a whole can be called the structure. This is a somewhat simplified view as the liaison librarian resides in a system within a system, namely the academic library system. Sharon Gray Weiner who looks at structuration theory as it applies to library systems states “structuration consists of the processes by which systems are produced and reproduced through its members’ use of rules and resources” (Weiner, 2003, p. 71). In the case of this study, the rules and resources, are determined between liaison librarian and researcher within the academic system via social integration and also in the same way between liaison librarian and researcher and the agencies within the publication system. This

interaction determines the way each system integrates with each other and as a consequence, determines how flexible and enabling the overall structure actually is.

The power relationship between agencies of a system also has an effect on how the system is comprised. In the case of this study, if one of the players in the academic system has more knowledge of the structure as a whole and this is played out through social integration then the way the system operates both within itself and with the publication system would be different if the power balance was equal. Questions are asked of liaison librarians to see whether their perceptions of researchers show an imbalance in the relationship and whether the balance is being addressed.

The final factors that affect the relationships between systems and agencies are differences in spatial and temporal distance and in the case of this particular study, these components are especially important. Under the print journal structure, the spatial difference between the publication system and the academic system was the physical distance between the two. The temporal distance was how long it took to post a journal to the academic system and how long it took to communicate between agencies and in the pre e-mail environment this was not as fast as today. But in the electronic journal environment, spatial distance between systems must be measured by how fast the service provider transmits information electronically and how fast the receiver system can process it. In a sense the line between spatial and temporal concerns is blurred due to the immediate nature of the information transfer. Temporality and spatial distance between agencies is still demarcated but even so, the time to communicate between them has been reduced. This study examines whether these factors affect the way liaison librarians perceive researchers.

A study by Jones and Karsten (2008) shows that there has been limited attention paid to studies of social and institutional context as applied to

structurational information system research. A study that addresses “structurational processes in broader contexts than just the specific organizational setting” (Jones & Karsten, 2008, p. 148) such as between publication and academic organizations, shows a gap in the knowledge. Though this study examines the relationship between two agencies within the same system or organization, it is the effect of the agencies of the other system that also determines a liaison librarian’s perception of a researcher.

4. Research Questions

The method of analyzing views of librarians on the role of researchers, rather than that of analyzing the views of researchers themselves, has been chosen because the views of librarians can be seen to elicit a more detached, objective and fuller set of data results. Whilst researchers deal with the one liaison librarian assigned to their academic department, liaison librarians deal with the enquiries of multiple researchers from each respective department and in this way can provide a more holistic view. Inevitably this study is still subject to some individual bias, however by choosing the research population in this way, it serves to dampen the influence of bias significantly. The form this study takes, readily encourages follow-up work to be undertaken that does examine the perspectives of researchers and their place in the electronic environment. Therefore the following research questions have been developed to ascertain, how do liaison librarians, at a New Zealand academic institution, perceive the role of the academic researcher in regards to e-journal publication?

A. Direct Communication.

1) To what extent do liaison librarians perceive that the vocabulary about the e-journal environment is understood by academics? In what ways do liaison librarians compensate for this and is there a variation between academic disciplines?

B. Indirect Communication

1) To what extent do liaison librarians consult with researchers in the development and maintenance of content about electronic journals, provided through subject resource pages, to ensure that they are relevant and reflect evolving practices? How does this vary between disciplines?

C. Bibliometric Measurement

1) To what extent do researchers discuss and seek assistance from liaison librarians in relation to bibliometric measurement such as citation impact data and usage statistics? What is the role that liaison librarians play in these areas and how does this vary between disciplines?

D. Researchers and Structural Knowledge

1) To what extent do researchers consult liaison librarians on the place of licensing agreements, as they stand in electronic journal publications, and to what degree do they enquire about the expectations presented by copyright law? Is there a variance between disciplines?

2) To what extent do researchers ask liaison librarians about the different types of database packages made available by the library? To what degree, do they enquire about subscription payments and the relationship, in this regard, between vendor and library institution over continuing access to e-journals? Does this vary between disciplines?

E. Researchers and Scholarly Communication

1) To what degree do researchers discuss and seek assistance from liaison librarians about the processes of scholarly communication, in regards to e-journal

publication, both before and after publication of their professional work? What are different types of issues that arise from this particular form of consultation? Is there a variance across the disciplines?

2) To what extent do researchers ask liaison librarians about the evolution of the open access journal and institutional repositories as possible alternative publication vehicles? What concerns do researchers bring to liaison librarians about the influence of PBRF legislation when considering alternative publishing methods? Is there a variance across the disciplines?

5. Research Paradigm

5.1. Paradigm

This study is constructed on an interpretivist research paradigm. The reasons for this choice will be related to the reader by answering the “three major questions that help us to define a research paradigm: the ontological question, the epistemological question and the methodological question” (Pickard, 2007, p. 5). Though some aspects of this study do not always fit perfectly into the definition of interpretivism, the overwhelming bulk of the research does suit this paradigm’s form.

5.1.1 Ontology

The social reality of Giddens’ “Structuration Theory”, though relevant to the research, is only one way of studying this problem. For example, the same research question could be examined from a Marxist perspective where agencies, such as academics and librarians are subject to the power of information holders as vendors would be perceived in this social reality and the “ability to generate new knowledge and to gather strategic information are dependent upon access to the flows of knowledge and information” (Best, 2003, p. 96). This perspective on the research problem would be equally pertinent, however due to the subjectivism of the altered theoretical framework, the results when using an identical

methodological approach would, in all likelihood, produce an entirely different set of answers to the same research problem. The relationship between subject librarian and academic would be subject to a differing set of rules under Marxist theory. This researcher accepts that there are many relevant contexts by which one can view the environmental reality of this study and that Giddens' viewpoint is but one of them.

5.1.2. Epistemology

The purpose of this study is to examine subject librarians' perceptions of researchers when communicating and interacting on the subject of electronic journals. From the start this study is subjective, in that the views of academics are not analyzed, even though they are an important agency in the considered social integration. This does not mean to say that their views are not worthy of study, just that for the purposes of this particular investigation, it is the views of subject librarians that are being examined. In addition to this, it is only the views of liaison librarians in one institution that are considered. It is entirely possible that views of librarians at other academic institutions, even those within New Zealand, maybe entirely different from possible findings elicited from this study.

This investigator has views that may coincide closely with that of the subject of his investigation. Though every attempt is made to interpret the information gathered according to the theoretical framework, it is entirely feasible that the translation of the data will be tainted with the subjective views of the investigator. Because of this, it can be assumed that the relationship between that of the investigator and the subject of the research would be entwined and the findings to be gathered can be seen as a result of this entanglement.

5.2. Research Population

The research population examined in this study is both small and richly diverse in terms of experience and subject discipline. Though this population is housed in a greater set of liaison librarians in the examined institution, the choice of limiting the population to Arts, Business and General Sciences liaison librarians is for the purpose of providing a means of contrast between three very different general academic disciplines as well as concealing the identity of the institution examined due to a request for anonymity by the management team of this chosen organization. There are eight universities in New Zealand, all of which cover these general disciplines and twelve liaison librarians from the organization agreed to be participants in this study. In terms of job description, the examined population's function is that of liaising with academic departments and their researchers, therefore it can be assumed that the data received, from such a population, is the most beneficial, in terms of accuracy. This population number provides a rich set of data results for analysis.

Anonymity of the research population has been protected in a three-step process:

- 1) An initial strict audit carried out by the researcher before publication
- 2) A strict independent audit carried out by the research supervisor before publication.
- 3) An independent audit carried by the institutional senior management team before publication.

The process of recruiting the population has happened in a sequential manner:

- 4) Permission has been gained from institutional senior management to approach liaison managers.
- 5) Permission has been gained from liaison managers to approach liaison librarians.

- 6) Liaison librarians have been approached individually to seek permission to be interviewed. Confidentiality has been assured in this process.

5.3. Interview.

“Interviews are usually used when we are seeking qualitative, descriptive, in-depth data that is specific to the individual and when the nature of the data is too complicated to be asked and answered easily” (Pickard, 2007, p. 172). It is on this assumption that an interview has been utilized as a data collection process for this study. The narrative sequence of the interview is closely aligned with themed sequence of questions laid out in the Research Question section. However, the format of this process will be semi-structured interview “to gain a holistic understanding of the thoughts and feelings of the interviewee” (Pickard, 2007, p. 175). Each theme starts with an open-ended question that touches on each beginning question of the aforementioned Research Question section.

Each interview has been audio recorded using a digital format-recording device and transcribed into a textual form within a twenty-four hour period. Transcription has not occurred sequentially with the recording, rather interviewee comments have been assigned to specific themes for later analysis using a constant comparison methodology.

5.3.1. Open Coding

As previously mentioned the interview results have been deconstructed and analyzed by theme or concept undergoing a “process through which concepts are identified and their properties and dimensions are discovered in the data” (Pickard, 2007, p. 242).

This process is concerned totally with the raw data that has been collected and as the entire methodology, in this research paradigm is interpretive, no answers have been elicited deductively before the data collection process. So it can be seen that this initial analysis of the data is a crucial point in categorizing in broad strokes to make the next step in this methodology achievable.

5.3.2. Axial Coding

The concepts has then been broken into subcategories, “termed axial because coding occurs around an axis of a category, linking the category at the level of properties and dimensions” (Pickard, 2007, p. 243). At this stage of analysis, a hypothesis has begun to be formulated as to how this study relates to the grounded theory. This stage of the process not so much looks at the data that has been collected rather, it will concentrate on the themes that have been constructed in the open coding process. In this way, linkages have also been found between the separate concepts that have been used ultimately in formulating a theory in the final coding process.

5.3.3. Selective Coding

This part of the analysis interprets the results as they relate to grounded theory. “The purpose of grounded theory is to build a theory that is faithful to the evidence” (Neuman, 2006, p. 60). In the case of this project, a theory has been constructed on the evidence gathered from liaison librarians that has been through the previous two coding processes. The process in this particular case, can then be seen as an inductive form of theorizing, that is to say the theory can only be built after the data collection process has been completed. We find then how our particular problem statement has been resolved in relation to the theory presented. The theory elicited from this study has been generalized to the extent that it could be utilized in further studies on topics related to this particular research.

5.4. Definitions

Term	Definition
Academic Department	A subgroup of an Academic Faculty that is subject to the service provided by a liaison librarian.
Bibliometric Data	A measurement of use or frequency whether by article, journal title or database provided by vendors
Citation Impact Factor	An index based on the frequency with which a journal's articles are cited provided by vendors
E-Journal	A serialized publication on academic topics delivered in a digital format
Electronic Journal	A serialized publication on academic topics delivered in a digital format
Liaison	The communicative exchange between liaison librarian and researcher on subjects on and about matters of the researchers academic discipline and the delivery of such information.
Liaison Librarian	An employee of an academic library whose function is to liaise with researcher of their assigned academic department.
Publisher	One who produces electronic journals for the use by libraries to service academic departments
Researcher	Any member of the research staff assigned to an academic department engaged in post-graduate research work.
Vendor	One who distributes electronic journals and associated bibliometric data to libraries.
Usage Statistics	A measurement of use whether by article, journal title or database provided by vendors

5.5. Delimitations

The interaction between the two agencies that are being examined can be seen as a definition of the population to be studied. A natural limit is set by the conditions laid down in the Research Population section that examines the view of only one agency, namely liaison librarians. This researcher admits that the constraints of both time and the length of the study, determined by the examiners of this project, sets the limits of the research project.

5.6. Limitations

There is the potential for limitations inherent in this study. The research population is small due to the qualitative methodology found in the form of the interview. In addition to this, each interviewee has a distinct and different experience knowledge base that they work from. The results that have been elicited have been tainted by the individual biases of each respondent. The fact that this study examines only one institution means that a wealth of opinion, both national and international, has been ignored and therefore cannot be generalized. The size of the institution studied also provides its own set of biases.

5.7. Assumptions

- 1) The research population to be examined in this study is dedicated to providing the best service to its client base.
- 2) That researchers are dedicated to the accumulation and dissemination of information pertinent to their academic discipline.

5.8. Independent Audit

As mentioned previously, presented results have been through an independent audit carried out by the research supervisor to ensure that the privacy and integrity

of the interviewees is maintained. This audit has been strictly adhered to alongside with the recommendations of the management team, of the institution being examined, before final publication. This procedure should be seen as a critical factor in the publishing process to ensure continued support from the institution, in further research endeavors, that may result from the publication of this research project.

5.9. HEC Approval

This project was contingent on and has the approval from the Victoria University Human Ethics Committee. They have been provided with a sample question sheet, approval from the institute examined and any other documentation required along with the standard application form. Through this process, the possibility of marginalizing the research population and the object of their perceptions has been eliminated.

Section II:

Data Analysis

6. Communication

6.1. Direct Communication

6.1.1. Access Issues and Search Methodologies

Generally speaking, there are two major lines of enquiry that researchers pose to liaison librarians through direct forms of communication. These lines of questioning revolve around issues of access to databases and questions about and ratification of search methodologies being undertaken by researchers. These enquiries by no means encapsulate all the forms of direct discourse between liaison librarian and researcher, however they represent the aspects of this interaction where researchers seem to fall short in terms of a knowledge base around database technologies and electronic journal publication. The other interactions between liaison librarians and researchers that deal with the specifics of scholarly work will be dealt with in the later sections.

The first line of questioning surrounds the issue of continuity of access to databases provided by the library system. This is particularly critical for researchers whose academic work relies on the most recent literature authored by other scholars within their specialized aspect of a particular discipline. They view the Library and more importantly, the liaison librarian, as the critical intermediary point between the publisher/provider and the academic department and that access problems are quickly and easily resolved. While this view is essentially correct, the reality of the situation is that such circumstances can take days to resolve and that the publisher does not always treat access as the most major issue, once subscription payments have been made to them. This does lead to dissatisfaction for researchers at vital points of their research, as they are dedicated to their academic work and sometimes view loss of access as something of an in-house dilemma rather than something that requires consultation with parties within the publishing system that are based overseas. There is some basis to this discontent as the temporal advantages presented by electronic communication suggest that

problems should be resolved readily, however this eventuality is not always realized.

Liaison librarians report that problems associated with continuous access to titles and articles also arise when dealing with aggregate database packages. Such vendor products do not always, due to the conditions of their license, guarantee its customer base with the level of access that is associated with their full publisher package counterparts. In aggregate packages it is quite common for the most recent issues of journals to be embargoed for an agreed period of time between publisher and vendor. Primarily if the work of a department involves current research and there is not much need for archival materials made available for the library, the problem of access generated by aggregate packages is not a common issue. Departments that are involved principally in current research will request the acquisition of full publisher packages for their research literature over that of aggregated packages, so that continuous access is assured. However, if the predominant form of research being undertaken does involve a high level of historical research, no matter from what discipline or faculty it operates within, the use of aggregate database packages is usually mandatory. There maybe a choice of databases by which researchers can access the same journal title, but at times all possible databases can be embargoed which can cause a level of discontent for the user group.

There is always the potential threat, due to budgetary constraints, subscriptions to some electronic titles will need to be cancelled from the Library collection. Even when there is also a print subscription available, there is a strong perception that researchers will not readily accept this, as they do not see information in electronic form as the same as duplicate material in print form. Researchers have been described as seeing the physical library as “unbending...and not flexible in our relations with academic departments”. For example, the Library would be unlikely to purchase a print subscription to a title wanted by only one researcher in a department, however it is likely they will purchase the electronic version of a

title amongst a cluster of other titles in a publisher package. Researchers have said “that the physical library is seen as a regulator...dominated by print rules when it comes to electronic materials”. Whereas the Library is still a physical entity where a catalogue can be searched to find a monograph or serial in physical form at a specific location, the Library is increasingly being perceived by researchers as a nonphysical catalogue that acts as a bridging point to information that exists and is housed within the publishing system.

This implies that the academic library is evolving from being an information provider for researchers to utilize, to that of an intermediary facility that serves as a navigator providing the necessary pathways to the best resources for information gathering and dissemination. Of course the reality is that this has always been the case, however as information in the electronic world is not physically housed within the institution, researchers require a change in emphasis in the way academic libraries service academic departments.

Titles in aggregate packages cost much less than the duplicate titles available in full publisher packages, which is why embargoes are prevalent in the aggregate option. However, researchers are for the most part unaware of this essential difference and do not think economic considerations should be a factor when acquiring literature relevant to their research. This indicates that most researchers are not fully versed as to what different types of database packages are provided by the library. The reasons for this anomaly in database knowledge by researchers, given by seven of the twelve liaison librarians interviewed, is due to the search methodologies that are being carried out.

A common reason put forward by liaison librarians, as to the shortfalls in this regard, by researchers, is the way the library presents databases in the OPAC. A researcher may search an indexing and abstracting database for articles pertinent to their topic of interest. The database will then produce a series of results and the OPAC will provide access to the available full-text articles in other aggregate or

full publisher package databases through the presence and implementation of hyperlinks to the appropriate source. These links act as seamless bridges between the available databases in a catalogue and serve to blur the boundaries between different types of databases. Of course, this means that the library catalogue is acting very efficiently, by providing information to the user in the fastest possible way and by proxy, the researcher gathers information quickly ensuring their own academic work is carried out in a more efficient manner. However, it does mean that a researcher may become unaware of the pathways they are traveling between databases thus becoming less aware of the different types of database they are actually utilizing. Whilst this structural knowledge surrounding database technologies is not essential for a researcher to know, in regards to the carrying out the duties of their research work, such knowledge could save time in the library consultation process and save frustration or confusion for the researcher.

Five of the twelve liaison librarians examined, perceived that some researcher confusion about the different types of database that are made available to them is that they search by an individual journal title rather than a database search. This method of searching seems to occur with more experienced researchers whose career spans the transition between the print and electronic eras. Such researchers usually publish in and gather information in well-established journals, thus their search methodology is not so critical, due to a lack of need to search more widely. This lack of necessity for a more elaborate search methodology also can lead to a deficit in a complete knowledge of the different types of databases that exist.

Three liaison librarians indicated that researchers who do search by individual journal title seem to delineate between databases by the quality of the database interface rather than that of the database function. As they focus their search methodology on only a few related titles via an individual title search, they tend to pick databases by the aesthetics of the full text options that a particular database interface offers. These liaison librarians perceive that such researchers choose the ease of the pathway between title search and a particular article laid out by an

interface, the layout of the interface and the type of full text formats made available to the user as the main preference decisions that affect a researcher that searches in this manner. These results tend to confirm the findings of Davis and Price (2006) that database interfaces and the types of choices researchers make, in this regard, corrupt the results of purely quantitative studies on database usage patterns because these types of choices are based entirely on quality.

The type of enquiry presented to liaison librarians, by researchers who have not yet formulated a sophisticated searching proficiency, can range from education about which other fields, aside from keyword search, can be utilized, to what limitations can be placed upon a particular search, in terms of language and publication type to help refine their search results. Some researchers will still create a very wide search methodology, obtaining a huge number of results that requires a manual limitation process, which indicates an application of search methodology that is based on both print and internet search engine mediums. This form of methodology has the benefit of providing researchers with all relevant information and information to provide new directions for their research to take. However, two liaison librarians commented that some of their researchers used this methodology because they were “cruder in their search approach...and are not reliant on databases”. This type of shortfall seems to exist for researcher whose work does not rely entirely on the most recent literature in their field of expertise.

It must be noted that though this section of the study examines researchers that demonstrate a gap in their knowledge about search methodologies, as it applies to electronic journals, it should not be concluded as indicative of all researchers. Liaison librarians, across all the disciplines, have indicated that many researchers are very proficient in searching for literature that is specific to their academic work. However control of access is beyond the influence of the researcher, and at times the librarian, so it can be concluded as being a more widespread and common line of inquiry. This study cannot measure any statistical ratios as to

what parties are proficient in relation to those who are not as adept, in terms of searching aptitude, because it deals with the discourse between liaison librarians and researchers with less proficient searching tendencies. There are however, some differences in trends that can be examined across the disciplines.

6.1.2. Disciplinary trends

Though the types of issues concerned with access and search methodologies are common to the entire span of the disciplines there are slight differences in trend between them. These differences cannot be seen as a reflection on a variable scale of aptitude, by researchers from different faculties, rather it should be looked more from the viewpoint of the relationship of specific types of academic work with the structure put in place by the publishing system to accommodate their vision of their client base. These findings should also take into account that individual researchers have their own skill base, which maybe at odds with a general look at the differences between the disciplines.

Science researchers are versant with the electronic medium due to the nature of the work that they do. This particular discipline has been described by one liaison librarian as “forward thinking and innovative...the first to digitize material for journals”. When dealing with researchers from the Science faculty, four liaison librarians generally found that well-established academics were familiar with search procedures and usability aspects of database and electronic journal packages. Also, established academics have gone through the publishing procedure so they at least have a familiarity with the structure of electronic publishing. Newer researchers beginning in their post-graduate studies initially have queries about the search functions of the relevant databases related to their specific discipline. However, this study has generally found that Science researchers are already computer literate and inherently have a set of skills suited to database searching and a familiar with the way databases are structured and sit in relation to their work.

Science researchers who are engaged in current research over that of historical research are served well by the publishing system. Electronic journal publications can make up most of the literature, in some cases “almost ninety-six percent”, required by researchers. Liaison librarians report that the number of Science researchers involved in current research that visit the physical library has reduced radically over the last decade. The databases now used by these researchers are more advanced than tools that merely provide bibliographic information. These databases can be interactive and provide tools for the daily work of direct research by the researcher with functions such as structural drawing facilities and chemical reaction data in addition to the traditional services offered by databases. Databases utilized in this regard are not so much web-based as client-based therefore, in terms of information technology, each researcher has to have specific software downloaded onto their respective personal computer for them to be able to interact with the database. Questions to liaison librarians now include password access information and other access issues due to a lack of unlimited licensing because of cost. This was historically a “feature of all database access around ten years ago” but has become less prevalent now that these traditional databases are established and cheaper. Password enquiries, for new generation databases, occur on a daily basis due to licensing restrictions that prevent passwords being published publicly. There is little use of more general aggregate and indexing packages, so enquiries in this regard is minimal for science researchers engaged in current research.

The evolution of the database into a more personalized client-based vehicle has some implications when thinking about structuration theory. This newer generation of database technologies closes the spatial distance between researchers within their specific specialization and between the researcher and the publication system through this increase in interactivity with the database. Academic collaboration can now exist within the database itself by the implementation of direct research tools rather than the electronic publication of

academic collaboration being the end result of research output. However, this eventuality changes the spatial distance between liaison librarian and researcher due to the increased independence of the researcher and the reduced amount of qualitative discourse between both parties. However, the reduced role the liaison librarian plays in this instance is actually more critical due to administration of password access in a limited licensed environment.

Liaison librarians report that there is a sense that Science researchers no longer accept fully the role that libraries have traditionally provided for them. Whereas in the print medium monographs and serials had an allotted borrowing period, in the electronic environment these rules no longer apply. Articles are available for download and can be printed at any time rendering the traditional role redundant. In terms of liaison librarians, this means that emphasis of their job is slowly evolving from teaching skills in information gathering to ensuring continual access to databases and acquiring newer and better packages as they become available.

The Science liaison librarians feel strongly that the library is slowly being envisioned by Science researchers as less of a physical place and more of an intermediary service between themselves and the information providers, namely vendors and publishers. Science researchers have been described as “hating the physical process of filling out forms to access information...wanting data at their fingertips” and “not wanting to answer repetitive questions about what information they need”. This means that when a print source is required now, by a researcher, the liaison librarian will now deliver print material to them rather than the researcher coming to the physical library for material. In addition to this, where traditionally researchers would come to the library in order to place materials on limited loan status for classes, or fill out documentation in order to interloan materials, now they would rather this service be undertaken by librarians. They seem to recognize that the learning environment, that they are now immersed in, operates from a different paradigm and they have an

expectation that academic libraries should reflect this new philosophy and not facilitate an environment, which for the most part still operates on a print philosophy.

This implies that the academic library is evolving from being an information provider for Science researchers to utilize to that of an intermediary facility that serves as a navigator providing the necessary pathways to the best resources for information gathering and dissemination. Of course the reality is that this has always been the case, however as information in the electronic world is not physically housed within the institution, researchers require a change in emphasis in the way academic libraries service academic departments.

With the total volume of information made available via electronic publishing being significantly greater than what was traditionally offered by the print medium, there has been some comment by Science researchers as to whether they are being truly efficient in the way they utilize the information they have gathered. In the traditional print environment, there seems to have been a tendency by researchers to be clinical and qualitative in the way that they gathered information. In the electronic world, the way researchers now gather information relies more on a quantitative approach and there is a small concern reported to liaison librarians that they “are not reading the most useful articles” and “missing out on important literature”. However, researchers have been perceived to be recognizing this and they are realizing a more qualitative method of gathering information in the electronic world.

Liaison librarians who deal with Arts researchers generally find that enquiries put forward, that surround the functionality of a database, in terms of types of full text output, access to specific documents or pathways between databases through hypertext links, do not require a great level of translation because this type of enquiries are “straightforward and practical”. By comparison, enquiries that deal with the searching process or the database selection process are not as articulate

and the level of communicative interaction between Arts researcher and liaison librarian is greater in terms of volume and translation because researchers do not always “have a clear understanding of what they want”. This means of enquiry is likened to the type of methodology incorporated by reference librarians when dealing their client base where the liaison librarian will have to “extract the core question from them” before the resolution process can begin.

Arts liaison librarians find that the methodology of searching databases has been found to be somewhat cruder in researchers that are involved in the Arts disciplines. Searches by these researchers can be “far too broad to be of use...being done on too few databases” and are “not always using all the available fields” for retrieving information. By comparison, researchers involved in the Social Sciences are relatively conversant with search procedures. The reason for the difference between these researchers, who are broadly grouped under the Arts discipline, has been surmised to be that pure Arts researchers rely predominantly on a primary text as the basis of their research and though they will incorporate other academics research, in the form of journal articles, a lot of their work is subjective sub-textual analysis of a primary piece of work. Social Science research is, by nature, more statistical and involves behavioral and clinical practices that are constantly evolving with time. Research is far more dependent on the current and recent work of others in their academic community, and this phenomenon relies heavily on work in journal publications. As the Social Sciences are very reliant on specific terminologies and vocabularies, researchers tend to “restrict the search to a limited set of sources or types of sources to achieve satisfactory results within an acceptable timeline” (Shen, 2007, p. 10). In contrast, Arts researchers who rely on a primary text can cast a “theme-based search” utilizing a “wider range of results...and using a manual limitation process” Therefore Social Science researchers have adapted to the electronic environment differently than their pure Arts counterparts due to the necessity of different search strategies.

Some Arts liaison librarians have been asked to contribute to teaching programs on database technologies due to changes in the syllabus of new postgraduate researchers, resulting from slight alterations to the research paradigm expected by their respective departments. Liaison librarians perceive that these changes have come about due to the pressure of funding and the necessity for a more complete assimilation of current technologies for departments to compete academically in the future. This can be seen, in terms of structuration theory, as the academic system and the publishing system integrating more efficiently. In terms of influence, the protagonist, in this case, is the publishing system and the academic system, the antagonist, is reacting by instigating change to accommodate its counterpart. It must be said, that this is not the case for all academic departments and though there was a positive response by all participants involved there is no clear decision for this program to continue in the coming years.

Business liaison librarians have found the same types of enquiry that has been found in the Arts and Sciences. Because the nature of a lot of business research involves the study of information technology and its relation to the commercial world, researchers in these disciplines can be seen as being “savvy” to the functional aspects of database technologies and electronic journal publication. To a large extent, literature assigned to current business research can be described as having the same traits as the literature assigned to current science literature. That is to say that research that is greater than twelve months old becomes significantly less relevant than more contemporary research. Business researchers involved in current research can be said to have the same level of need for continuous access to literature made available as their counterparts in the Sciences. Business liaison librarians use the same sorts of language, as their Science counterparts, when describing their researchers academic output and their information gathering trends. Librarians from both disciplines describe the types of research their assigned departments as “current” and at the “forefront of their field”. In terms of information gathering, both sets of librarians described their researchers search

methodologies in terms such as “cultivated” or “intricate” and “only brought to my attention when they think they may have missed something...even then their methodologies are beautifully mapped out on paper and I cannot add much”.

By comparison, librarians report that business researchers whose academic output relies more on archival literature, such as historical statistical information or corporate history demonstrate more of the same needs shown by Arts researchers. Such forms of research relies more on aggregate databases whose licensing does not ensure continuous access to specific titles and has the disadvantage of having embargoes on more recent literature. However, Business liaison librarians find that their client base has an established knowledge as to the differences in the functionality of diverse forms of databases and compensate for them.

It can be concluded that there are differences between the disciplines, when looking at the researcher and liaison librarian relationship, as it applies to direct communication. However, it has also been demonstrated that the nature of the research methodology being carried out also has a part to play when looking at researchers and the types of communication that is carried out with liaison librarians. Historical research involves more use of aggregate databases which in turn means increased issues surrounding loss of continuous access, whereas current research involving newer client-based databases have many issues surrounding password accessibility due to license restrictions. For researchers whose academic work is principally based on the subjective analysis of a primary text, more traditional issues surrounding search methodologies rise to the fore.

There also has been some brief indication that the political makeup of a particular academic department may also have a part to play and this factor applies irrespectively of what particular academic discipline is being examined. Senior researchers of some departments work closely together and with liaison librarians to ensure that newer postgraduate researchers have the opportunity to

educate themselves better about the electronic environment through specific clinic and seminars. Other departments consist of a makeup of researchers whose work is essentially insular and there is not much collegial pressure for such measures to be provided for their newer researchers, though it must be said that the academic library being examined provides many freely available resources by which a researcher may educate themselves voluntarily. Further studies that may be undertaken in this area of research, should more closely focus on the social dynamics of academic departments as well as examining the relationship between research methodology and database functionality.

6.2. Indirect Communication

Liaison librarians communicate with their assigned research staff indirectly through the subject resource pages via the Library website. Whilst at the inception of the electronic journal and database presence in the Library catalogue, input by researchers of various departments for information concerning the pragmatics of these technologies and publications was common, this input has gradually died away as researchers became more familiar with the medium and databases themselves provided more in the way of such information. One liaison librarian commented “in the beginning...a lot of researchers showed an interest...wanted material placed on the web pages...now besides a few library champions there is little interest shown by the department”. Another liaison librarian described academic departments as “fairly inactive...if an academic needs materials on databases and searching for one of the papers they are teaching, I will put links on the pages...other than that they are not active at all”.

Researchers that are also academic lecturers may request information to be provided for their undergraduate students but librarians report that a minority of individuals within a department will be active in indirect communication. Most information provided on the resource pages is at the behest of the liaison librarian. Although there is a feeling that if academic departments do participate more

actively then there will be a higher standard of information provided on the pages. Liaison librarians will usually e-mail any new additions made to the pages to researchers within a given department although usually response can be described as cursory at best. Comments such as, “If I do add something I e-mail my academics to let them know its there...I typically might get one response...it will say something like, ‘Good’...that’s about it”, were a commonality amongst all the liaison librarians interviewed. Librarians have indicated that it would be a positive move if researchers approached them as a faculty i.e. Science to lay down specifically what would be a good general standardized scope of information to publish in their resource pages as a basis for discipline specific material, however this is not happening.

Within some departments of the Sciences Faculty however, researchers are very conversant with their own material and many sit on editorial boards of journal publications. Specialized pages can be created for departments on specific topics within their respective discipline and this is being done at the request of researchers. There is a lot of collaboration between liaison librarian and researchers in this regard, though this is usually the result of an initiation by certain researchers that hold the library resources in high regard and it is not indicative of all researchers.

Many of the newer generation of databases are very intuitive and have aspects about them, which lessen the need for information to be published on resource pages for newer researchers. These aspects include the implementation of “natural language searching” improving functionality over “traditional Boolean searches”, education functions by the databases include Webinars (online seminars), both for individuals and groups that reduce the need by librarians to personally provide this service.

This new generation of databases has changed the role of the liaison librarian again from educator to facilitator, which in turn alters the social integration

relationship between liaison librarian and researcher under the conditions placed upon it by structuration theory. This makes the role of the liaison librarian no less essential, however the role of the researcher is empowered by placing the education about the nature of the electronic publication environment at their fingertips. A natural progression from this is a change in the system relationship between academic libraries and academic departments. The library system has become more of a mediator in its relationship with the academic system as a result of the new empowerment found, by researchers, through social integration. The importance of resource pages has been reduced by the evolution of databases, which allows libraries to redefine their roles with academic departments. The idea of a library as a physical entity has much less importance now and with the lessening of present roles played out in the newer database environment its role will increasingly become to researchers as a type of troubleshooting intermediary between publisher/vendor and researcher.

It must be reiterated that these newer types of databases are confined to only a few departments within the Science Faculty and are not indicative of the research databases used by the main body of researchers. In the main, most researchers do not require information in and around the practicalities of electronic publication, to be placed on subject resource pages, because they have already well adapted to database technologies and require less information about such concerns as they did in the past. Any line of enquiry that a particular researcher may have in this regard, can now be resolved with the liaison librarian through more direct forms of communication.

7. Scholarly Communication and Bibliometrics

The act of publishing a researcher's academic work in the electronic environment, in New Zealand tertiary institutions, plays a large role on the

amount of funding an academic department can receive under the conditions of Performance Based Research Funding (PBRF). This model of funding does have an effect on the choices a researcher may make when choosing to publish their research output and this situation has been shown to be taken in both negative and positive ways by varying researchers, from the observations of liaison librarians. Comments ranged from “my academics come to me to make sure that their citation count is correct” to “I have had remarks by academics...PBRF is flawed...not good for New Zealand based research”. As this model of academic funding is based on a statistical measurement of academic production, this has meant that more qualitative evaluations of work, such as the peer review process, are not regarded as importantly, by funding bodies. However to researchers, the peer review process is still the mainstay of what they regard as important when they engage in scholarly communication. “In my departments anyway, researchers only want to publish in peer reviewed scholarly journals in their field” was the general type of response from all liaison librarians, across the disciplines.

As a reflection of this, liaison librarians report that they are usually only consulted annually, when the performance review process is undertaken by researchers, on the topic of citation impact factors as it applies to their academic work. There has been no specific enquiry by researchers about the manipulation of usage statistics to predict citation impact factors despite an interest in this area by some liaison librarians. However, there has been enquiry by academics as to how much a department as a whole has been cited. There are reports compiled by the administration system to see how effective departments are as a unified body and it is in the interest of academic departments to monitor total research output. Researchers, in the main, are not keen to publish their work in titles that are not covered by at least one of the major databases. However researchers that have been employed for longer durations will tend to choose titles that they have used in the past and perhaps do not weight their choice by database coverage. Comments from seven of the twelve liaison librarians were along the lines of, “senior academics are leaders in their fields...often sit on editorial boards...and

so they prefer to be judged by their academic equals” and “my researchers are far more concerned about academic merit...funding is just a part of their job description”.

Generally speaking, it can be said that well-established researchers, across the disciplines, whose academic work has been repeatedly published in journals, do not have the same interest in impact factor, as do newer researchers. Established academics have already experienced the benefits of a higher amount of citations due to the sheer volume of their work output. For these researchers, peer review is probably the only consideration they will use in relation to their publication choices. For newer researchers, who have either not published or have only a fledgling amount of published work to their names, the citation count appears to librarians to be increasingly important to the validation of their research output. One liaison librarian commented that “even established researchers in my department have an 80-90% rejection rate on their articles...less senior researchers struggle to get their work recognized...they are more likely to choose lesser known journals...just to be cited at all”.

Within the Sciences, researchers appear to have adapted to the PBRF situation, as it applies to scholarly communication and the need for higher citation readily. The general form of communication for citation impact information is done through direct communication. In fact, the general enquiry for searching information is usually “in conjunction with citation impact information”. Liaison librarians report that queries have been made by researchers about the most cited titles within a larger group in relation to a specific piece of work that they want to publish and this type of enquiry is more about validation of information already gathered by the researcher. The response by one liaison librarian was generally to advise to publish in a title that was the most “relevant to the topic”, but also take into consideration titles that are the “most heavily used and are electronic as well”.

Liaison librarians report that for many science researchers there is a quandary now as to what publication they might choose and this is a direct effect of PBRF requirements. Researchers can choose to submit their research in a specialized journal very specific to their work, but this will give them a lower citation impact factor than a more generalized journal title, though this option will ensure a greater amount of review by their peers. One liaison librarian reported that researchers believe that the choice of a more generalized journal title has the advantage of a “wider range of scholarly readership”, and by association, “a higher impact factor” however the academic work published by researcher maybe not held in “as much regard by their immediate peers” and as such is devalued at a qualitative level. There is a lot of pressure placed on researchers having their work quantified highly in terms of citation ranking and perhaps this emphasis is “slowly corroding academic values”. One liaison librarian however only reported this issue and did indicate that there has been some cause for this effect to change as the PBRF requirements will now be using databases with a wider scope of journal titles that will allow for more specialist journals to be cited and will reduce the pressure for researchers to choose more generalized titles.

Science liaison librarians have noted that a lot of discussions about issues on scholarly communication are resolved within the departmental structure. More experienced researchers pass on the benefits of their knowledge to their protégés and to an extent these discussions bypass library staff. Though Science liaison librarians do have extensive knowledge on journal titles of their assigned discipline and perhaps have a more in-depth familiarity with new titles that are becoming available, researchers do not seem to think that this is an important consideration for the library system to provide a service for. Three Science liaison librarians, indicated that most advice was done “at a collegial level” and that a lot of research “is collaborated with researchers at other universities” this coupled with the pressure of time constraints means that consultation between liaison librarian and researcher is rare.

Liaison librarians perceive that business researchers are served well by the publishing system in relation to their PBRF requirements. Many prominent journal titles, in these disciplines are covered widely by databases and publication ensures that any citations will be counted appropriately. Liaison librarians field relatively few enquiries on citation impact and publication choice, as the publishing system ensure that these disciplines are catered for, in terms of citation counts. Having been served well in this fashion, business researchers can be described as being well versed around the topic of bibliometric measurement and scholarly communication. The bulk of the enquiry, to liaison librarians, can be seen to be more of a validation process of choices that have already been made rather than an exploratory process where options are given for choices to be made. As one liaison librarian indicated that the researchers that they served, “knows the ins and outs of their research well...they know what journals to publish in...occasionally I have had to check an academic’s citations...maybe one in the last year.”

Within the Arts disciplines, advice is mainly given to newer researchers as to what titles they might publish in. Two Arts librarians found that there seemed to be newer researchers that are demonstrating more of acceptance towards the restrictions imposed by PBRF and have an interest in better ways in which to facilitate their academic careers. They indicated an interest “in titles that have database coverage...out of a necessity to publish...appeal to a wider group of peers”. All twelve liaison librarians indicated that researchers who are more experienced tend to publish in the established peer reviewed titles that they always have and are not so interested in following new avenues in terms of publication choice. This is understandable as these parties are established recurrent authors with articles in reputable journal titles and there is no real need for them to pursue other publishing options.

Only one Arts liaison librarian indicated consultation concerning bibliometric advice by researchers and this was described as being “very rare”. The reasoning

behind this, in this case, is that the databases that cover these disciplines do not have operability to measure citation impact. Some databases such as Arts and Humanities Citation Index, Google Scholar and Scopus do have this facility, but none of them totally cover the territory that encapsulates the pure Arts disciplines. It has been stated that even when all three databases are used in unison to gauge citation impact, there is “not sufficient coverage” paid to the Arts titles.

Within the Arts disciplines liaison librarians report that there is some negative feeling towards citation impact measurement and its relationship with PBRF requirements, by researchers who feel that “New Zealand based research is ignored...suited to the Sciences not the Arts...has nothing to do with quality of research”. These parties feel that these forms of bibliometric measurement are not geared towards the Arts disciplines as a lot of titles in which they have published in traditionally have not been covered by major databases. There is also the feeling that funding does not take into account the quality of research being produced, it leads to the closing down of smaller specialist titles and is generally not good for the Arts disciplines in a small country such as New Zealand, as there is little overseas interest in New Zealand specific articles. Whilst these parties see how bibliometric measurement as a basis for funding is ideally suited to the Science disciplines, they feel that Arts funding should be based on the peer review aspects of their research output.

This fact means that there is a need by Arts researchers for the publishing system of electronic materials to have citation operability in all databases for all academic disciplines. Two of the four Arts librarians interviewed felt that this state of being is also a reflection that there is “not nearly the amount of collaboration” between researchers as there is in the Sciences. They reported that academic work carried out in the Arts disciplines tend to be more insular and choice of publication, in terms of journal titles, is based on the academic status of a journal over that of a journal that is more likely to be cited. There is the perception by them that Arts researchers are perhaps more reticent when it comes

to existing in a PBRF environment and they are sometimes surprised about the amount of review their published work has gained after consultation with their respective liaison librarian. However, their reaction to such information is more focused on the academic reception that their work has received over that of the quantitative analysis that citation impact offers.

Arts researchers believe that citation measurements based on databases that cover a wider range of titles, across the disciplines, can only help their cause. This requirement is a problem that needs to be resolved through mediation between academic departments and the respective funding bodies. However, even if this situation was resolved, the perception of liaison librarians is that Arts researchers will still believe that a qualitative evaluation based on the peer review process would be preferable.

It can be concluded then, that the Business and Science disciplines are better served by the publishing system than is the Arts disciplines. Again however, it also depends on what type of research methodology is being undertaken as to how research output is being treated, in terms of bibliometric measurement. Current research may be cited heavily for a relatively short period of time and then become obsolete as newer research is published. By comparison, more historical and qualitative forms of research may not be cited heavily at the initial stages of release, however as such research maybe cited for periods of twenty years or more, it becomes with time, more valuable quantitatively. Of course, as PBRF is analyzed over relatively short time periods, qualitative research is not taken into account.

8. Licensing Agreements and Copyright

Researchers seem to fall into two distinct groups when it comes to licensing agreements and the issues surrounding copyright. One group regularly asks their liaison librarian advice about the numerous licensing agreements and the

copyright issues related to them. The other group does not always make enquiries in this regard and maybe infringing the copyright law without actually realizing they are doing it. It must be noted however, that this group are dedicated researchers with respect for the ownership of other peoples work, it is just that they are not informed as to when they might be breaching copyright and are not operating out of a sense of commercial or academic gain.

As many researchers also act as academic teachers for the undergraduate body, there is a significant amount of questions around the amount and type of material that can be used in departmental course packs. The issue around copyright law has become very complex since many library licensing agreements countermand copyright law. This has made this issue very difficult for not only researchers, but also liaison librarians and the copyright office run by this tertiary institution. It has become easier for copyright law to be breached in the electronic environment, however copyright law is actually more restrictive. An example of this is New Zealand newspapers in the digital environment are not allowed to be copied whereas in the print-only world this was allowed.

The most common questions that are asked by researchers are about transferring information gathered from electronic journals onto their own authored web pages or whether they can share information gathered with parties that do not exist within the academic institution. There is some confusion about these issues by researchers as different publishers have different types of licensing agreements and there is no standardized licensing format that can be applied. There has been a little more flexibility by publishers in the licensing of electronic preprint publications and with open access materials but even these platforms cause some confusion to researchers. Some open access platforms are now being brought up by larger publishing concerns and information that was freely available is now subject to newer licensing agreements.

Liaison librarians mediate problems in this regard by working with both the researchers who enquire and the copyright office to bring about a correct decision making resolution, however these problems have become more prevalent in the electronic environment and there is a little confusion presented by researchers as to who they might approach to resolve these issues. They report that academic departments also periodically audit themselves as to whether any infringement is occurring however such audits may not always be entirely correct in the electronic world.

It appears to liaison librarians that researchers would prefer a clearer, more standardized method of dealing with licensing agreements and copyright issues but they do realize that this would have to be a prerogative of the publishing system. Liaison librarians realize that in the future there will probably be pressure mounted by the academic system to upgrade the copyright law to better suit the issues of electronic materials, however this will be a unilateral initiative and not restricted to the institute being presently examined.

9. Institutional Repositories & Open Access

Of all the interviewees, only two Science liaison librarians have fielded enquiries in connection with the publication in and the use of databases in connection with institutional repositories or open access journals. These librarians indicated that the departments they represented, Mathematics and Computer Science, initiated discussion in this regard and have been “proactive in putting working papers...and some technical reports” into the Repository, however this has been the exception to the rest of the departments. Some departments publish preprint publication series, working papers or have other types departmental publications, but these works either stand-alone or are sent to established journals to be published. Five liaison librarians indicated that there seems to be a consensus by departments to place these works in the Institutional Repository as it

becomes more established. They generally suggested that that for there to be a general movement by researchers to publish their work in repositories there will need to be pressure placed by faculties and the institutional administration, as a whole, however due to PBRF and the way the entrenched system works at the present time such pressure does not exist.

Academic departments do not produce regular reports as to the research output produced by their researchers and although liaison librarians feel that such reports, produced regularly, would be a fine addition to an institutional repository there has not been an initiative by academic departments to do this. Published departmental reports on research output are published sporadically, so regular output collated and added to the Institutional Repository even at the most basic bibliographic level is seen as a positive action by liaison librarians. In addition to this, literatures such as conference papers presented by researchers are in a lot of cases not reproduced electronically and a gap in the published work could be housed within a repository. In the electronic environment, researchers are less inclined to go to the trouble of interloaning scholarly work in print form if it is not available electronically. This means that a lot of published work is not being read and an institutional repository would prove a likely vehicle for this literature to be available to the academic community at large. Whilst this seems a logical progression, by liaison librarians to make, researchers seem to be not totally appreciative of the possibilities that institutional repositories present.

One of the main reasons, cited by liaison librarians, as to the shortfall in knowledge by researchers and academic departments, about institutional repositories, is that such parties do not appreciate the scope that such a vehicle offers. Researchers tend to see repositories as a publication medium that acts in opposition to refereed journals that are covered in databases. At a departmental level, librarians suggest that output could be analyzed more efficiently by a bibliographic listing of the work of their researchers. In this way the repository serves to supplement published works rather than act in opposition to them. Six

liaison librarians suggested that if the administration of this institution made it mandatory for academic departments to place their research output into the Institutional Repository, it would be a positive move for both the departments and the library system. There is a feeling by some liaison librarians that academic departments will not push for this development because it will initially mean more work on top of their academic schedule and they do not see the eventual benefits it will produce.

There is evidence to show that researchers have a positive attitude towards open access platforms. This tertiary institution has acquired a number of large open access databases and research staff is actively utilizing them. One of the advantages of open access journals is that there is a relatively fast review process for new articles. This is because there are fewer academic authors submitting articles to these titles, however as more researchers are submitting their work to these platforms, the reviewing process is becoming longer and the advantage of the quicker review is slowly being negated. Researchers do believe that this benefit of a quicker review process can be reestablished by having larger editorial boards to cope with a greater authorship, however this could affect the economic advantage that open access presents.

One of the concerns that researchers have towards open access is the move by well-established vendors taking over open access databases and there is some confusion as to how these databases will be administrated. There is the possibility that eventually large publishing operations will take over more open access platforms, which is a threat to the advantages presented by the open access movement in general. However, this is only a small concern presented by only a few researchers.

10. Conclusion

Although this study critically examines the level of enquiry researchers bring to liaison librarians throughout the course of their academic work, it must be said that researchers across the disciplines have securely adapted themselves to the electronic environment and its implications regarding journal publications. The seven liaison librarians whose careers have spanned the transition between the print and electronic eras have commented that researchers act far more independently when dealing with electronic publications than they did at the inception of the medium. At the end of each interview undertaken, respondents were invited to comment generally on how they felt the researcher / liaison librarian relationship had changed in their experience. The responses by more experienced liaison librarians spoke of a change in the social dynamic in their relationship with researchers and these responses produced some interesting possibilities in terms of structuration theory.

In the past there was more direct interaction between liaison librarians and researchers. The relationship has been described as being more collegial in the past, by more than one liaison librarian, than the relationships that they are having now. Past interactions resulted in a greater knowledge, by liaison librarians, about what researchers were doing in relation to their departments. As direct communication increasingly now takes the form of discourse via e-mail over that of a face-to-face interview there is a sense of more distance between researcher and librarian.

There is an indication that this drop in direct communication between librarian and academic department has created a fall in the social integration between parties. The librarian and researcher roles have become more insular from each other, which indicate an overall change in the corresponding systems and the relationship between them. Closer relationships between librarian and researcher seem to occur with researchers who have been employed for longer amount of

time and have experienced the print only environment. Consequently they have developed and adapted to the electronic environment through direct discourse and at times seem to have displayed a greater knowledge of the skills required in the present medium.

In terms of structuration theory, a greater impetus by both researchers and liaison librarians to consciously increase the amount and quality of the social relationships they have between them can only improve the way the library and academic systems relate to each other, when talking about electronic publication. Of course this means rejecting the temporal advantages made possible by the faster and more efficient means provided through electronic communication mediums. The workloads of many liaison librarians and researchers are considerable however, so a more qualitative form of mediation is not likely to occur in the immediate future.

By comparison, the relationship between publisher and researcher has become both spatially and temporally more expedient and can be described as much more efficient than was evident in the print era. A lot of the traditional roles of the liaison librarian have been taken on by the publishing system and incorporated into database technology. A researcher can commune with a publisher with a lot more immediacy than was previously offered and as database technologies evolve this relationship can be seen to be growing closer still. Even those academic disciplines that are perhaps not accommodated for as much as others still have a closer relationship with the publishing system. The Sciences are now beginning to experience a new generation of database technology, which in the view of some liaison librarians, will progress and evolve to encapsulate all database technology in the future.

It can be said that liaison librarians believe that researchers play an active role in their relationship with the electronic publication environment. In most respects they are versant with database technologies and their relationship to electronic

journals and consultation with liaison librarians has increasingly become more of a ratification process than a didactic one.

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Appendix A.

Though an informal line of questioning has been undertaken in this study, a set of theme based, introductory questions have been provided to the interviewees.

Listed below are the questions.

Initial Interview Questions

Direct Communication

- 1) To what extent do you perceive that the vocabulary about the e-journal environment is understood by academics?

Indirect Communication

- 1) To what extent do you consult with researchers in the development and maintenance of content about electronic journals, provided through subject resource pages, to ensure that they are relevant and reflect evolving practices?

Researcher Concerns

- 1) To what extent do researchers discuss and seek assistance from you in relation to bibliometric measurement such as citation impact data and usage statistics?
- 2) To what extent do researchers consult you on the place of licensing agreements, as they stand in electronic journal publications, and to what degree do they enquire about the expectations presented by copyright law?
- 3) To what extent do researchers ask you about the different types of database packages made available by the library?

Scholarly Communication

- 1) To what degree do researchers discuss and seek assistance from you about the processes of scholarly communication, in regards to e-journal publication, both before and after publication of their professional work?
- 2) To what extent do researchers ask you about the evolution of the open access journal and institutional repositories as possible alternative publication vehicles?

Appendix B. E-mail Invitation to Potential Interviewees



SCHOOL OF INFORMATION MANAGEMENT

Hello,

I am presently enrolled at the Victoria University of Wellington, School of Information Management and I am undertaking a Master of Library and Information Studies degree. The final part of this degree entails research project to be carried out over a period of two trimesters. My topic, in this regard, is the perceptions of liaison librarians, at a New Zealand academic institution, on the role of researchers in the electronic journal environment.

Would it be possible to interview you as part of a group of liaison librarians, selected from the Arts, Business and General Science disciplines? Each interview should take approximately an hour to complete and every consideration will be taken to not intrude into your workload anymore than is absolutely necessary.

I would really appreciate your contribution in this regard.

Thank you.

Brent Partner

partnebren@myvuw.ac.nz

MLIS Student.

Victoria University of Wellington.

School of Information Management.

Appendix C. Information Sheet for Interview Subjects



SCHOOL OF INFORMATION MANAGEMENT

Thank you for agreeing to participate in my research. The subject of this project is to examine the perceptions of liaison librarians, at a New Zealand academic institution, on the role of researchers in the electronic journal environment. The Human Ethics Committee at Victoria University of Wellington has approved this project.

The objective of this project is to gain insights into the perceptions of liaison librarians on the role of researchers in the electronic journal environment and to see where the relationship between librarian and researcher stands in this existing climate. As part of the research, I am interviewing liaison librarians from the Arts, Business and Science disciplines to provide a varied and rich set of data results. This is an entirely voluntary study and contributors have the option of withdrawing their participation at any time before the completion date 13 February 2009.

The primary vehicle for this research will be a semi-structured form of interview that will be recorded digitally and then transcribed. The researcher is entirely responsible for the transcription of the interviews and each interviewee will be given the opportunity to verify their respective transcription upon request. It is possible that, after the interview process, additional consultation may be required to clarify points made in the initial interview. All interview subjects will receive a final copy of the report.

All responses made in the interview process will be kept strictly confidential to both myself and my supervisor Lynley Stone, School of Information Management, Victoria University of Wellington. The written results of this project will be audited strictly by both parties to assure interviewee confidentiality and will be reported in an aggregate fashion. The recorded data will be held in secure facilities or in protected electronic files for a period of two years at which point it will be destroyed.

The library management team will inspect a final copy of the research project prior to submission to ensure the integrity of the organization examined. All participants will be given a copy of the final report at the end of the project. A print and electronic version of the completed project will be deposited in the Victoria University of Wellington Library and may be published in academic journals or the findings presented at professional conferences.

Appendix C. Information Sheet for Interview Subjects



SCHOOL OF INFORMATION MANAGEMENT

I can be contacted on (09) 3737599, ext. 88055 or 027 391 8924, or by e-mail: partnebren@myvuw.ac.nz. Alternatively, you can contact my supervisor, Lynley Stone on 027 520 0401 or by e-mail: Lynley.Stone@vuw.ac.nz

Thank you for your time and participation.

Brent Partner.

Appendix D. Consent Form for Interview Subjects



A study into the perceptions of liaison librarians, at a New Zealand academic institution, on the role of researchers in the electronic journal environment.

A research project carried out by Brent Partner, MLIS Student.

1. I agree to be interviewed for the purposes of the research assignment named above
2. I understand that my participation in this project is entirely voluntary and I may withdraw from this study at anytime without providing an explanation.
3. I agree that the interview will be digitally recorded and I will have the opportunity to correct errors in the transcript before the data analysis stage of the project.
4. I understand that the researcher will keep a record of any information that I will provide and my identity or any identifiable characteristics will be kept strictly confidential.
5. I understand that the results will be submitted for marking by the School of Information Management and copies will be available in print and electronic formats from the Victoria University of Wellington Library.
6. I understand and accept that this research project has been approved by the Human Ethics Committee of Victoria University of Wellington.

Name: _____

Signature: _____

Date: _____