

The effect of scholarly communication practices on
engagement with open access:
An Australian study of three disciplines

A thesis submitted for the degree of
Doctor of Philosophy of the
Australian National University

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This thesis contains no material that has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge and belief it contains no material previously published or written by another person, except where due reference is made in the text.

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Abstract

This dissertation addresses a specific aspect of the broad area of communication systems used among researchers. This research has undertaken to establish a broader view of the communication practices of scholars to understand the motivations behind their publication choices. Open access offers a solution to issues with the scholarly publication system such as delays in publication and restricted visibility of research due to high subscription costs. The principle of open access is to enable maximum access to findings from publicly funded research to maximise social returns on public investments. Despite the apparent benefits of open access, the uptake has been limited.

This thesis research takes a holistic view of the researcher as a communicator to uncover the reasons *why* researchers are making the publishing decisions they are. In-depth interviews were conducted with 43 researchers in three disciplines at two institutions, the Australian National University and the University of New South Wales. The disciplines, Chemistry, Sociology and Computer Science, were known to have different publication practices. The questions asked about all aspects of researcher communication including researching, authoring, informal communication, article submission, refereeing, mentoring and data storage.

The findings show that traditional arguments for open access are ineffective. The Reward function of scholarly publishing is central to managing academic careers and supports traditional publishing systems. While having work openly accessible increases an academic's exposure and possibly therefore their citation counts, unless alternative internet-based forms of metrics are adopted, the open access option will not directly appeal to researchers.

Information-seeking behaviour demonstrates how disciplinary differences affect researcher's interaction with technology. The disciplines showed marked differences in almost all the areas explored, and the behavioural norms expressed in each discipline have direct bearing on the likelihood of members of that discipline embracing open access. The 'institutional/disciplinary divide' means that researchers must publish in ways that run counter to their disciplinary norms in order to satisfy institutional and grant funding requirements.

Until governments, and particularly university administrations, recognise the need to consider the discipline and the need to consider the individual and respond to these needs, and until there is a realisation that different disciplines may require radically different approaches, there will not be a large-scale adoption by individual researchers of the current open access tools. Either institutional repositories need to adapt dramatically to offer work practice benefits or the broader academic population will only use institutional repositories under duress, which is not the situation envisaged by open access advocates. The alternative is for communities to develop their own subject-based repositories, a development that again is likely to be highly dependent on communication norms in different disciplines.

Glossary of Abbreviations

AAP	American Association of Publishers
ACM	Association of Computing Machinery
ACS	American Chemical Society
ADFA	Australian Defence Force Academy
ANDS	Australian National Data Service
ANU	Australian National University
APAC	Australian Partnership for Advanced Computing
APSR	Australian Partnership for Sustainable Repositories
ARC	Australian Research Council
ATN	Australian Technology Network
BMJ	British Medical Journal
CEDAM	Centre for Educational Development and Academic Methods
CoRR	Computer Research Repositories
CSIRO	Commonwealth Science and Industry Research Organisation
CUL	Cornell University Libraries
DEST	Department of Education Science and Training
DOAJ	Directory of Open Access Journals
ERA	Excellence in Research Assessment
ESCE	Electrical, Computer and Systems Engineering
HERDC	Higher Education Research Data Collection
IDEAS	Internet Documents in Economics Access Service
IRU	Innovation Research Universities
ISI	Institute of Scientific Information
JAMA	Journal of the American Medical Association
JCR	Journal Citation Reports
MIT	Massachusetts Institute of Technology
NGU	New Generation Universities
NHMRC	National Health and Medical Research Council
NIH	National Institutes of Health
NSF	National Science Foundation
OAK Law	Open Access to Knowledge Law
OECD	Organisation for Economic Co-operation and Development
OJS	Open Journal Systems

OpenDOAR	Open Directory of Open Access Repositories
PNAS	Proceedings of the National Academy of Sciences
PRF	Petroleum Research Fund
PRISM	Partnership for Research Integrity in Science
QUT	Queensland University of Technology
RAE	Research Assessment Exercise
RCUK	Research Councils UK
RePEc	Research Papers in Economics
ROAR	Registry of Open Access Repositories
RQF	Research Quality Framework
SC	Scholarly Communication
SCI	Science Citation Index
SIGMOD	Special Interest Group in Management of Data
SPARC	Scholarly Publishers Association Resource Coalition
STM	Science, Technical and Medical
UK	United Kingdom
UNSW	University of New South Wales
USA	United States of America

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