Inside the Black Box

Research Grant Funding and Peer Review in Australian Research Councils

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ABSTRACT

This thesis considers the effects of research funding process design in the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC). The program delivery mechanisms that the ARC and NHMRC use differ in detail and each council claims to be using the best selection model possible. Neither council provides evidence that peer review is the best possible way of delivering government funding for research and neither can produce empirical evidence that they use the best possible peer review model to determine excellence.

Data used in this thesis were gathered over several years, forming a comparative case study of the Australian Research Council and the National Health and Medical Research Council, with illustrative data from comparable international organizations in the UK and USA. The data collection included: a survey of applicants, semi-structured interviews with experienced panel members and former staff, observation of selection meetings, and examination of publications by and about the research councils.

Researchers firmly believe in peer review and their confidence enables the system to function. However, the mechanisms of grant selection are not well understood and not well supported by applicants, who criticize the processes used to assess their work, while supporting the concept of peer selection.

The notion of excellence is problematic; judgements of excellence are made within frameworks set by the research councils and vary across disciplines. Allocation of research funding depends on peer review assessment to determine quality, but there is no single peer review mechanism, rather, there exist a variety of processes.
Process constraints are examined from the perspectives of panel members, peer reviewers, council staff and applicants. Views from outside and inside the black box of selection reveal the impacts of process design on judgements of excellence and decision-making capacity. Peer reviewers in selection panels are found to use a range of differentiating strategies to separate applications, with variance evident across disciplines and research councils. One dominant criterion emerges in both the ARC and NHMRC processes, track record of the applicants.

Program delivery mechanisms enable and constrain selection but every peer panel member has to make selection decisions by defining discipline standards and negotiating understandings within the panel. The extent to which peers can do this depends on the number of applications assigned to them, the size of the applicant field, and the processes they have to follow. Fine details of process design, panel rules and interactions are the tools that shape funding outcomes.

Research councils believe they are selecting the best, most meritorious proposed research. However, I show in this thesis that the dominant discriminator between applicants in Australian selection processes is track record of the applicant. This effect is the result of several factors operating singly or in concert. Researcher track record, largely determined by quality and number of journal publications, is considered to be the responsibility of universities but support for this capacity building has not been systematically provided in Australian universities.

Reliance on track record to determine the outcomes of all but the very best applications is very like awarding prizes for past work and is significantly different from the models of grant selection that operate in comparable international research councils.
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ABBREVIATIONS

ABS  Australian Bureau of Statistics
ANAO  Australian National Audit Office
ARC  Australian Research Council
CEO  Chief Executive Officer
CI  Chief Investigator, or researchers named on a grant application
CSIRO  Commonwealth Scientific and Industrial Research Organisation
DEET  Commonwealth Department of Employment, Education, and Training
DEETYA  Commonwealth Department of Employment, Education, Training, and Youth Affairs
DEST  Commonwealth Department of Education, Science, and Training
DP  Discovery-Projects, ARC
EAC  Expert Advisory Committee, ARC
EPSRC  Engineering and Physical Sciences Research Council
G8  Group of Eight (universities in Australia)
GAMS  Grant Application Management System, ARC
GRP  Grant Review Panel, NHMRC
LP  Linkage-Projects ARC
Minister for Education  Commonwealth Minister for Education, Training, and Youth Affairs, and other combinations of portfolios incorporating Education.
NCGP  National Competitive Grants Program, ARC
NHMRC  National Health and Medical Research Council
NSF  National Science Foundation
PG  Project Grants, NHMRC
RC  Research Committee, NHMRC
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This work started because I loved my job. I spent many years working on the administration of research funding. The challenges of managing funding well and supporting research were continuous but the academics who participated in selection made those challenges fun. I offer thanks to those colleagues who encouraged me to take this path.

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The most important sources of information for this thesis are interviews with past and present staff and panel members associated with one or more of the research councils. They must remain anonymous but I extend my sincere thanks to all of them. The lucid, insightful analyses of selection processes by both panel members and staff provide a wealth of fascinating material.

A very important contribution to this work came from over 200 unknown applicants for funding who responded to an internet based survey. These people provided valuable data and observations about funding processes and their impact on the research community. The staff of research offices in universities, medical institutes and other research organizations disseminated the survey information and pursued their research community to respond. Thank you for participating and supporting this research.

Early in this research I was fortunate to visit several international research councils and my thanks go to the dedicated and helpful staff who provided me with information, time and resources. Firstly, in New Zealand, I was assisted by the professional staff of the Foundation of Research Science and Technology, the Marsden Fund, and the Health and Medical Research Council. Secondly, in the USA, staff of the National Science Foundation were very generous with access to resources and enabled observation of a selection meeting. Particular thanks are extended to Wayne van Citters at NSF, who opened doors. Thirdly, in the UK, staff of the Economic and Social Research Council and the Medical Research Council provided insights into the subtleties of their systems. At the
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This thesis is dedicated to the memory of my father,

Malcolm John Mow, dedicated scholar and teacher.