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A CURRENT VIEW OF THE THESIS BY PUBLICATION IN THE HUMANITIES AND SOCIAL SCIENCES

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ABSTRACT

Background	Recent times have seen an increasing pressure for publication during candidature in Australian universities for a range of strategic goals that are responsive to the current academic environment. Completing a thesis by publication (TBP) can further these goals, and, while this approach is no longer new, relatively little is known about its application in the context of the Humanities and Social Sciences (HSS).
Methodology	We performed an analysis of recently conferred TBPs to gain insights into the prevalence of the model in HSS, and to identify the number and nature of publications typically included in this context.
Contribution	Our findings can further our collective understanding of the practicalities and possibilities of the thesis by publication in this disciplinary context, providing valuable insights for current and prospective research candidates in this area.
Findings	An average of 4.5 papers are included in TBPs, although there is wide range in the number and nature of papers. Of interest is the inclusion of scholarly works that are unpublished, or where the candidate is not the first author. There appears to be a heavy reliance on traditional types of scholarly publications, namely journal articles and conference proceedings.
Impact on Society	This paper illustrates the current status of the relatively new TBP in the HSS context and makes a contribution to a range of pertinent contemporary academic debates such as authorship during candidature.
Future Research	This paper presents a range of opportunities for further research, including investigating the characteristics of universities that effectively foster the inclusion of publications in the HSS doctoral thesis.

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Keywords thesis by publication, publication during candidature, thesis structure, humanities, social sciences

INTRODUCTION

The phrase “publish or perish” was coined in 1942 (Garfield, 1996), but it is a mantra that has become even more relevant in recent times in Australia, where cuts to higher education have led universities to rely more on income derived from research outputs and competitive funding grants. In Australia, “how much money universities receive from government has depended in part on how many publications their academics produce” (Norton, 2016, p. 39), and research outputs are seen not only “as an indicator of research excellence” for institutions (Australian Research Council [ARC], 2016, p. 22), but are also used to measure individual success and are necessary for job applications, internal promotions, and research funding (Brien, 2008; Dinham & Scott, 2010). While this “publish or perish” culture has faced heavy criticism in recent times for encouraging “quantity over quality” (Norton, 2016, p. 39), in the current climate, the most prominent and powerful indicator of success in academia is the ability to write high quality academic papers that hold up to the scrutiny of peer-review for publication in scholarly journals. This reality is becoming more intensified, and there has been a steady increase in the number of research outputs produced in Australia (ARC, 2016; Norton, 2016).

Success in scholarly writing and publishing requires “a constellation of skills, understandings, and dispositions too important to be left to chance” (Jalongo, Boyer, & Ebbeck, 2014, p. 241). This can include selecting where to publish, writing for a specific journal audience, dealing with both positive and negative responses from journal reviewers and editors (Wilkinson, 2015), and navigating the politics of publishing (Lawrence, 2003). While there have been calls for “issues of writing and publication to be systematically addressed within doctoral pedagogy” (Lee & Kamler, 2008, p. 511), many of the traditional models of supervision, in terms of time and approach, do not sufficiently facilitate the development of such skills (Poyatos Matas, 2012).

International studies have shown that beginning researchers who publish during their doctoral candidature are more likely to have greater research productivity throughout their careers (Horta & Santos, 2015). In addition, publishing during candidature can also help research students to develop an identity as a researcher, leading to them to view their “research skills in a positive light” (Hemmings, 2012, p. 178). Publishing during candidature can be a valuable opportunity for developing a range of transferable research skills. Mastering academic journal writing has greater transferability than thesis writing, and engaging in the publication process can support research students to develop their authorial voice, receive a broad range of valuable feedback through the peer review process, and disseminate findings in a timely manner, as well as being responsive to the contemporary academic culture (Merga, 2015).

While the common element of all approaches to doctoral study is the requirement for candidates to make a significant and original contribution to knowledge in a particular field of study, there are some major differences in approaches that have been favoured in different fields, countries, and periods of time. Since the introduction of the PhD award in 1948, the most commonly adopted approach in Australia follows the United Kingdom model. This involves candidates working under the guidance of a research supervisor to plan and conduct a major research study, and to develop a monograph, or thesis, reporting on that study (Group of Eight, 2013; Louw & Muller, 2014). The thesis is generally divided into chapters, most often an introduction, literature review, research methodology, findings and discussions, and conclusion chapters. Unique to Australia and New Zealand is the absence of an oral defence, or viva, common in most other parts of the world, though this is recently changing, as some Australian universities have just adopted or are considering inclusion of an oral defence as part of the doctoral examination process (University of Western Australia, 2017). A product of their geographic isolation and historically inhibitive costs for external assessors to visit, a doctoral thesis in these countries is generally sent to a number of academics for assessment. This

has meant that the awarding of a doctoral degree in Australia is a result of an assessment of the thesis, and not of the candidate, though this may change in the near future.

A model common in the United States and originating in Germany also requires a student to conduct original research and produce a written thesis, but it differs due to its inclusion of a significant coursework load. The coursework aims to provide students with a range of knowledge and skills that will help them not only through their research training, but into their academic careers. While coursework components are becoming more common in Australian doctoral education (e.g., Edith Cowan University, 2016), unlike the United States model, coursework does not always form part of the assessment of the award (Kiley, 2014).

The PhD by prior publication is awarded to experienced researchers based on their retrospective contributions to a field of study (Davies & Rolfe, 2009; Peacock, 2017). This was an award much more prevalent in the past, when it was common to enter an academic career without already having completed a doctorate. In the current competitive environment, completion of a doctorate is often a minimum requirement even for entry-level ongoing academic positions. Thus, the necessity for this award has waned in recent years, and in 2012 only nine Australian universities offered avenues for established academics to gain a retrospective PhD (Jackson, 2013).

In some countries, including Australia, an exegesis is a popular component of the doctorate in some disciplines within the Humanities, particularly art and design (Arnold, 2005), creative writing (Krauth, 2011), and music (Reiner & Fox, 2003). Sometimes called a creative PhD, this model involves the development of a creative artefact, and an accompanying exegesis that places the artefact within the research literature to bring theory and practice together (Arnold, 2005).

In European countries, including Bulgaria, the Czech Republic, Estonia, and Sweden, there has been a long tradition of scholarly publications forming a critical role in the assessment of the PhD award (Davies & Rolfe, 2009). In Switzerland, The Graduate Institute Geneva (n.d.), considered one of the world's most prestigious institutions, offers a "paper-based thesis," which requires a minimum of three papers "accepted or acceptable for publication in journals ranked A or B in the department's list," of which at least two must be authored solely by the candidate (p. 1). This model is often referred to as a 'three paper PhD', although this is not accurate as three papers is generally a minimum guideline. In Norway and the United Kingdom, similar theses based on papers typically include four and eight papers respectively (Smith, 2015, p. 22).

With publications being the "currency of academia" (Starrs, 2008, p. 1), tertiary institutions in Australia and across the world are increasingly placing emphasis on the importance of candidates publishing during candidature, both for the candidate and the institution. For instance, Griffith University in Brisbane state their position as follows:

Under the Higher Degree Research Policy, doctoral candidates admitted to candidature from 1 January 2011 are expected to have at least one peer reviewed output accepted for publication during candidature. Students who commenced prior to this date are encouraged to publish during candidature.... Higher degree research students are expected to publish during candidature as a means of disseminating their findings and developing their writing skills. In addition, published outputs of research are important records of research activity and are used by the government and the University to measure the intensity and quality of research performance at Griffith. (Griffith University, 2017)

Within this context, new models have emerged in Australia that require (or allow) doctoral candidates to publish during their candidature and to include them as part of their final thesis submission. This is becoming increasingly recognised as a desirable and legitimate research option for higher degree by research students; a review of the guidelines and policies of Australian universities found that the vast majority offered such doctoral programs (Jackson, 2013). There is no consistent application of terminology, so to avoid confusion this paper will adopt the most commonly used term, Thesis by

Publication (TBP), to describe all theses that include within the thesis scholarly works developed during the candidature period.

The TBP model is relatively new in Australia, and as such guidelines vary between and even within institutions. It appears that in Australia there are two options available to candidates. In some universities, candidates are able to include publications within their thesis, but the assessment of the thesis remains the same as those which do not include publications. In other universities, a distinct degree is offered with publication being a key criterion of assessment. In some universities, both options are available. This is the case at the University of Newcastle (2015), where new candidates are asked:

to consider if your publications will form a sufficient body of cohesive work to meet the requirements of thesis by publication. You may like to consider the other option of including publications within a standard thesis format. (p. 2)

Publishing during candidature has a longer tradition in STEM and Medicine and is less common in the Humanities and Social Sciences (HSS). This reflects the academic community in general, where researchers in the often-termed hard sciences have a higher rate of publishing than those in the soft sciences (Curado, Henriques, Oliveira, & Matos, 2016). This is, at least in part, due to persistent belief in some parts of the academy that the quantitative methods of study more common in Science and Medicine are “hard, objective and rigorous,” while qualitative methods are “soft, subjective and tentative” (Smit, 2003, para. 7). The result is that certain types of studies are marginalised in some research communities, posing a challenge for successful publication (Gagliardi & Dobrow, 2011; Shuval et al., 2011). Furthermore, HSS studies are often defined by ontological positions which reject the idea that there is one single truth, viewing social phenomena and their meanings as socially constructed and context dependent (Bryman, 2001). Thus, studies in HSS may be more likely to be broad research inquiries and less likely to produce clear and concise answers to research problems. This may present challenges for HSS candidates in compartmentalising their research into smaller, publishable pieces.

Despite these challenges, HSS doctoral students are adopting the TBP approach in Australia, and several recent graduates have reported and published their experiences as a means to expand the discussion in this space and to inform and support the approach of subsequent students, including the authors of this study (Merga, 2015; Mason, 2016, in press). Due to the limited available models in this area and the lack of robust inquiry in this space, common challenges are still being identified by candidates.

Among the key debates currently explored in the literature concerning the TBP model is the issue of authorship and contribution to published papers. It is common for candidates to publish with co-authors, often their supervisors, and concerns have been raised about the ability of assessors to determine the contribution made by the candidate (Jackson, 2013). As tertiary institutions develop their policies regarding publications in a TBP, consensus is yet to be reached on what position the candidate should take in the authorship of papers. Whether candidates must be the sole author of publications, or whether they should always be lead author, are questions that candidates and institutions currently grapple with, but for which there is often not always a clear answer articulated in explicit policy or institutional norms.

The status of publications allowed for inclusion in a TBP is also a point of contention. It is interesting to note that, while the award often explicitly refers to ‘publications’, not all universities require works included in a TBP to actually be published. Some guidelines allow the inclusion of scholarly works that have been accepted for publication, others that have been submitted for review, and others that have been prepared in the form of a scholarly paper, but have not undergone any formal review process. This presents a dilemma about the role that publishing plays in the TBP, particularly because engaging in the publication process and developing a research portfolio is one of the key benefits of the TBP.

Other questions are raised about the number and quality of papers that make up a TBP. Indeed, most institutions place emphasis on quality over quantity, and university guidelines regularly warn candidates that publication does not guarantee conferral, nor does it preclude requests from examiners to make amendments to published materials (Jackson, 2013). Additionally, in Australia, particular emphasis is placed on the TBP being more than just a collection of papers. The thesis should present as a single and cohesive work, which presents challenges for candidates, because each publication has its own audience and aims (Merga, 2015).

What constitutes a TBP in HSS is still fluid, and so the authors aim to further illuminate the TBP for prospective research students in HSS by making visible the prevalence of the mode and the disciplines and institutional contexts in which it has found traction. Because it is still in a nascent phase, our study attempts to highlight the nature of the TBP model and the approaches to publications within doctoral theses. Importantly, our study aims to contribute to key scholarly debates by identifying common practice in recently conferred TBPs. Specifically, we seek to answer the following research questions

1. How many publications make a TBP?
2. What types of publications are included in TBPs?
3. What is the status of scholarly works included in TBPs?
4. What is the author credit of scholarly works included in TBPs?

The answers to these questions can help prospective and current research students better understand the current typical shapes of the TBP, as well as contextual factors which can help them to justify a TBP approach in their rationale, which is significant as there can still be a degree of supervisory resistance in this field (e.g., Merga, 2015; Nethsinghe & Southcott, 2015). As such, we undertook this study in order to further our collective understanding of the practicalities and possibilities of the TBP in this disciplinary context.

METHODOLOGY

We aimed to investigate these research questions using Content Analysis as the best-fit method in this instance. We analysed manifest content, “that which is on the surface and easily observable” (Potter & Levine-Donnerstein, 1999, p. 259), subscribing to Downe-Wamboldt’s (1992) contention that “content analysis is more than a counting game; it is concerned with meanings, intentions, consequences, and context” (p. 314), and we used the manifest content to provide insights beyond mere quantification, as we sought to “enhance the inferential quality of the results by relating the categories to the context or environment that produced the data” (p. 314).

In order to identify our sample, we established key parameters for eligibility for inclusion. We sought to garner a body of doctoral theses from Australian universities, recently conferred, and with full-text availability to researchers. The desire for currency needed to be balanced with the unique constraints of TBP embargoes: to ensure that they have had time to complete any embargo period that they may be placed under (often two years), we confined our sample to theses published from January 2014, with our sample identification taking place in October 2017. Searches were conducted of three major online databases and repositories: *Proquest Dissertations and Theses*, *Google Scholar*, and *Trove*, the database of the National Library of Australia. Search terms used included ‘by publication’, ‘with publications’, ‘with papers’, ‘as a series of papers’, and ‘published works’, which are commonly used terms for TBPs in Australian universities.

The database searches identified 639 doctoral theses that included publications within the thesis and that met the inclusion criteria presented above. Upon review, three were removed from the corpus because they were each found to be retrospectively awarded doctorates. Thus, 636 TBPs were included in the initial corpus.

The first step in the analysis was to review each thesis and identify those which belong to the Humanities and Social Sciences. This information was obtained in the title of the award, and, if not available, then by the candidate's affiliated department or faculty, and, if not available, then by the affiliation of the supervisory team. Disciplines within the broad HSS fields were taken from lists provided by the Australian Academy of the Humanities (2017) and the Academy of the Social Sciences in Australia (ASSA, 2016). One exception that was made for this study was in the discipline of Statistics, of which three TBP's were identified. While Statistics is listed as a Social Science by the ASSA, they were situated in all cases in this sample within faculties related to Science, Technology, Engineering, and Mathematics (STEM), and thus were deemed to be more appropriate in this context to fit under the umbrella of STEM.

Next, each thesis identified as coming from HSS fields was analysed, and data were collected using predetermined coding instructions that were developed after a review of the literature and a determination of the research aims. Using an Excel spreadsheet, theses were coded for a range of bibliographic information including year of submission, hosting institution, discipline area, and the number of publications included in the thesis. Publications included in each thesis were also coded according to their type (including, but not limited to the journal article, book chapter, and conference proceedings), publication status (published, under review, or prepared for publication), and authorship (candidate as sole author, lead author, or co-author). Chi square tests were then performed on contingency tables to determine any relationships between these nine publication characteristics (within parentheses above) with the hosting institution and research field. The small size and lack of representativeness of the sample means that the results are not generalizable, but they help to identify trends in the sample, which may aid in understanding the role that institutional and disciplinary policies and guidelines play in doctoral candidates' inclusion of certain types of publication.

There are several limitations of the data collection procedures that need to be considered when interpreting the results. While the three databases selected are major repositories of doctoral theses in Australia, indexation policies differ from one university to the next, and it is possible that some institutions do not utilise these repositories. Further, to enable accurate identification of each paper and its characteristics, searches were limited only to those for which full-text download was available. Those TBP's under lengthy or permanent embargo were not included in the analysis. While the number cannot be determined, it is possible that this number is considerable, as TBP's are likely to contain copyright materials that may preclude their wider distribution. As a result, the sample analysed in this study is not representative of all TBP's in Australia. Therefore, the results provide a snapshot of current practice, rather than a definitive account. Further research in this area could delve deeper into the theses at a content and composition level, exploring issues of organisation and selection of materials; to attempt this level of deep analysis in this paper went beyond the scope of our research questions, however, this remains an area of keen interest for future inquiry. It would also be useful to explore any potential issues that may arise from the legitimacy of claiming academic credit for the publication of an article, and then its subsequent incorporation into a thesis.

RESULTS

Our data collection procedures resulted in the identification of 636 TBP's. Of these, just over a quarter were from HSS fields. This was less than those in both medicine-related fields and STEM fields (Table 1). The results discussed in this study all relate to the 165 TBP's from the HSS.

Table 1. Thesis by Publications, by broad research field, n=636

Broad research field	n
Science, Technology, Engineering, Mathematics (STEM)	273
Medicine, Allied Health, Biomedical Science	198
Humanities and Social Sciences (HSS)	165

The sample consists of TBPs from 12 groups of HSS discipline areas, with almost half related to Psychology (Table 2). The four most prominent disciplines – Psychology, Business, Education, and Design – make up 85% of all of the TBPs in the sample.

Table 2. Thesis by Publications in the Humanities and Social sciences (n=165), by discipline

Research discipline	Social Science	Humanities	n
Psychology, Cognitive Psychology, Cognitive Science	✓		72
Business, Economics, Accounting, Management	✓		32
Education	✓		20
Design, Urban Design, Architecture	✓		17
Political Science, Law	✓		9
Linguistics	✓	✓	4
Anthropology, Sociology	✓		4
Creative Arts, Performing Arts		✓	2
Geography	✓		2
Journalism		✓	1
Literature		✓	1
Philosophy		✓	1

The sample includes TBPs hosted by 23 Australian universities (Table 3). The largest contributor of TBPs in the sample is Macquarie University in Melbourne, followed by Queensland University of Technology in Brisbane.

Table 3. Thesis by Publications in the Humanities and Social Sciences (n=165), by university

University	n
Macquarie University	67
Queensland University of Technology	33
Newcastle University of Newcastle	20
La Trobe University	8
Deakin University	4
Murdoch University	4
University of Adelaide*	4
Australian National University*	3
University of Sydney*	3
University of Western Australia*	3
Curtin University	2
Royal Melbourne Institute of Technology	2
University of Melbourne*	2
Australian Catholic University	1
Edith Cowan University	1
Griffith University	1
University of Canberra	1
University of New England	1
University of Notre Dame Australia	1
University of Queensland*	1
University of Tasmania	1
University of Wollongong	1
Victoria University	1

*Group of Eight universities.

In response to our first research question concerning the number of the publications included in the TBPs, within our sample of 165 TBPs, a total of 750 publications were identified, ranging from one to 12 publications, and an average of 4.5 publications per thesis, and a mode of 4 publications.

In response to our second research question, the majority of the publications were journal articles, with almost 99% of all candidates including at least one journal article. Other featured publications included conference proceedings and book chapters (Table 4).

Table 4. Type of publications

	Journal article	Proceedings ¹	Book chapter	Other
Of all 750 publications	646 86%	74 10%	74 4%	3 ² <1%
Of 165 doctoral theses	163 98 %	31 19%	18 11%	2 1%

¹Conference proceedings and conference papers. ²Two books and one working paper.

In response to research question three, the majority of publications included in the TBPs were published or accepted for publication at the time of submission of the thesis, with about 87% of all candidates including at least one published research output (Table 5). In total, 16% of papers were prepared for publication, with a view to submit at a later date, and a third of candidates had included at least one paper that was prepared in manuscript format, but which had not yet been submitted for review.

Table 5. Publication status of publications

	Published ¹	Under review ²	Prepared
Of all 750 publications	484 65%	149 20%	117 16%
Of 165 doctoral theses	143 87%	84 16%	56 34%

¹Published, in-press, or accepted for publication. ²Under review or submitted for review.

In response to our fourth research question regarding the authorship of publications, the majority of the papers saw the candidate as the lead author, with the support of co-authors, generally acknowledged as members of the supervisory team (Table 6). Just under 40% of candidates included a paper where they were the sole author. Publications where the candidate was not the first or lead author were also included, and these made up 6% of all publications.

Table 6. Authorship of publications

	Sole author	Lead author	Co-author
Of all 750 publications	182 24 %	522 70%	46 6 %
Of 165 doctoral theses	61 37%	141 85%	27 16%

The Chi square tests identified a small number of trends in publication characteristics across the universities in this sample. Firstly, TBPs at University of Newcastle and Queensland University of Technology included more published outputs while Macquarie University included fewer published outputs than would be expected by chance. Similarly, the inclusion of outputs where the candidate is the co-author was more common in TBPs at University of Newcastle and less common at Macquarie University.

In terms of the disciplinary field, there were no trends identified with regard to the inclusion of published outputs or the inclusion of journal articles, meaning that these publications were spread evenly across all of the fields. However, a number of trends did emerge. In terms of publication status,

more publications submitted or prepared for submission were seen in Business and Psychology fields. Design and Education fields saw less inclusion of publications prepared for submission than would otherwise be expected. In terms of the type of publication, more conference proceedings were seen in Business, Design, and Political Science, and fewer were seen in Psychology. Book chapters were more common in Design fields and less common in Psychology. In terms of authorship, sole-authored publications were seen more in Business and Design and less in Politics and Psychology. Lead authored publications were more common in Psychology but less represented in Business and Design. Finally, publications where candidates were a second or subsequent author were seen more in Design and Education and less in Psychology.

DISCUSSION

The first aim of our paper was to look at the prevalence of the TBP model in HSS. TBPs in this sample are more common in STEM and medicine, reflecting reports in the literature, but there is a considerable number, one quarter, from HSS, suggesting a shift in policy and practice toward embracing this mode. While our finding that TBPs were in greater number in the STEM category and the Medicine, Allied Health, Biomedical Science category than in the HSS category, we are aware that this could be reflective of a greater volume of research submissions in these fields. These findings also add weight to HSS research student complaints about the relative paucity of TBP models, though this issue appears to be being rectified in HSS in general.

However, not all students in HSS will have ready access to appropriate TBP models to inform their own structural decisions, as within HSS, there are clearly some fields gaining more traction than others, with Psychology and Business at 60% of the sample. The relative paucity of TBP in the Humanities is of great interest and worth further investigation. This could be a result of the popularity of the exegesis as a key component of the doctorate in creative sub disciplines, as discussed earlier.

It is also noteworthy that some universities dominate TBPs in HSS in this sample. While this could be a result of the indexing practices of the institutions, or the data collection procedures of this study, it might also be reflective of policies, school cultures, and/or supervisory approaches that thrive in these particular contexts. There is merit in further investigating institutional requirements and incentives to publish in these contexts, potentially communicated through explicit policy and, also, through implicit cultural transmission. Of interest is the finding that the Group of Eight universities were not significant contributors to the TBP volume in this sample, as the Group of Eight are well-established, large, and also the highest ranked institutions in Australia (Times Higher Education, 2017). This suggests that university ranking may have little influence on volume of TBPs. This emerges as an area warranting closer research investigation to further explore the characteristics of universities which effectively foster this approach.

The distribution of TBPs across institutions and disciplines could also be a result of greater enrolments in HSS at these institutions, and the figures are likely impacted by research completions and institutional size on these figures. While we were unable to obtain statistical data reporting the number of higher degree by research student graduates from each Australian university, we note that this may be possible in the future due to new indicators for reporting higher degree by research students to be launched in 2018 (Australian Government Department of Education and Training, 2017).

While it appears in this study that some universities and some research fields are actively encouraging doctoral candidates to include publications within their thesis, there may also be issues with the visibility of such theses. Firstly, because TBPs may include copyright material, they may be more likely to be placed under extended or permanent embargo. Secondly, there may be issues with the ways in which TBPs are indexed. It may be the case that TBPs are not uniquely distinguished, which is possible as many institutions do not refer to the TBP as a separate degree, but as one mode of delivery. To illustrate, in our sample of 165 theses only nine had reference to the approach on the cover page, noted in seven different ways:

- Doctor of Philosophy (Presentation of the PhD thesis by published papers)
- Doctor of Philosophy (Research) by Publication
- Doctor of Philosophy by Publication (x2)
- Doctor or Philosophy by Published Work
- Thesis by Papers
- Thesis by Publication (x2)
- Thesis by Published Papers

The majority of the TBPs were identifiable as such only by virtue of their inclusion of papers, which requires a review of the thesis content. While the TBPs in this sample must have been marked as such in some way to be listed in search results, this was often not visible to the database user. This means that there were potentially more TBPs available, which is a limitation of this study, but it also presents a challenge for candidates who may be looking for examples in their field to assist in their decisions about what to include and how to best structure the thesis. Candidates may also underestimate the prominence of the model in the field, which may influence their decision to adopt the model.

Our first research question aimed to understand the quantity of publications which constitute the TBP. The average of 4.5 papers may be indicative of the number of publications possible during the limited candidature period, considering considerable publication turnaround times in many HSS journals. It also suggests flexibility for candidates in decisions regarding the number of papers to be included. This also makes application of the already flawed term ‘three paper thesis’ a misnomer in the Australian context.

The wide range of number of publications, anywhere from one to 12, suggests that perhaps less emphasis is placed on quantity than on other factors. As discussed earlier, universities place emphasis on quality over quantity of publications. While it is not within the scope of this paper to investigate the quality of papers, we do note that, unlike some European universities that provide guidelines on the quality of publication required (for example, in journal ranking), this does not appear common in Australian guidelines. This is something that should be considered further in subsequent research, particularly in the common publishing environment with a proliferation of poor quality predatory publishers that forego “business ethics, research ethics, and publishing ethics” for profit (Beall, 2017, p. 275).

Our second research question focused on the type of publications commonly included in the TBP. Journal articles are the dominant mode of research communication in the TBP, reflective of its privileged position in academia. There was a considerable proportion of candidates, almost one fifth, who included conference proceedings and conference papers in the TBP. This suggests an acknowledgement of the importance of dissemination of research findings to wider audiences. Merga (2015) suggests that researchers should have a “broader translation strategy ... that considers how to best reach target stakeholders”, including beyond peer-reviewed journals which may not reach those outside of academia (p. 294).

The inclusion of other less-traditional outputs, however, is still rare, and it is unclear if this is a considered choice by candidates or an adherence to publication eligibility guidelines or institutional norms. In recent times the Australian Research Council (ARC) has moved toward a more inclusive and broad conceptualisation of what can constitute a research output, allowing the submission of “non-traditional research output” (ARC, 2017), so it is possible that if this analysis is repeated in the future, an increasing array of research text types could be captured. However, at this stage the strong adherence to the traditional journal article is striking.

It is interesting to note the field-related differences in publication characteristics, which suggest that students may be strongly influenced by norms in their fields. Results suggest that some universities may have regulations (or unspecified norms) allowing the inclusion of unsubmitted outputs, and of the inclusion of publications where the candidate is not the first author, while others do not.

Our third research question concerned the status of publications in the TBP. Publications that were already published at the time of submission make up the majority of the publications included in the TBPs. There was also a significant proportion of scholarly works that were still under review at the time of submission, and this is probably a result of the lengthy turnaround times for the peer-review process. There has been much concern in recent years about notoriously long waiting times for peer review and publication in some disciplines (Powell, 2016), and this would explain some of the field-related differences in terms of publication status. This finding does suggest that the majority of candidates are engaging actively in the publication process, which is one of the main advantages of the TBP approach, and the high rate of already published papers suggests that this engagement is likely to begin relatively early in candidature.

It is interesting to consider the motivations for the inclusion of papers which are prepared for publication, but which have yet to undergo a peer-review process. While this could simply be a matter of timing, with unreviewed papers potentially the last to be written from data collected later in the candidature, other factors could be at play. There may have been concerns about rejection of the paper, or the decision may have been strategic, particularly for publications completed later in the candidature, to avoid the potential challenges of reconciling different reviewer and assessor perspectives, that may occur if a paper is under review at the same time as the thesis examination process (Robins & Kanowski, 2008). The findings here present several areas of further investigation, including what university guidelines are regarding the inclusion of unsubmitted manuscripts, the reasons candidates choose to include unsubmitted manuscripts in the thesis, and the extent to which these manuscripts are submitted and accepted for publication after completion of the degree. Our findings suggest that, at this stage, overall there may be relatively wide acceptance of this practice as a necessary aspect of what can realistically be achieved within the time and resourcing limitations of candidature.

In addition, one common question that supervisors often receive from their postgraduate students intending to undertake a TBP is, “How will I get them all published in time?” Regardless of institutional policy allowing unpublished papers, there is typically anxiety around the competing desire to present the highest volume of published papers possible and the time and resourcing constraints of candidature. This paper can provide some relief, as less than two-thirds of papers were published at the time of submission in our review. As such, this paper not only illuminates the current field, it can contribute to recognising important patterns and norms within this space which can make students’ journey easier to negotiate.

Our fourth and final research question concerned one of the key debates surrounding this model, that of authorship of publications. The predominant mode of authorship in this sample is the candidate as lead author, with the support of one or more co-authors, who are generally acknowledged as members of the supervisory team. While issues of authorship are often raised in criticism of the TBP model, candidates are generally required to state explicitly the details of their contribution to each publication. This level of transparency is not seen in a traditional thesis, even though supervisors have always provided assistance in the development of candidate’s chapter-based theses. The TBP model better reflects the reality of most research, which is not conducted completely independently. Following a study of the social networks of doctoral candidates in the United Kingdom, Pilbeam and Denyer (2009) advocate a move away from the perception of doctoral students as “lone scholars” to a collaborative model of collective shared learning. The TBP not only acknowledges the contribution of others in their shared learning, but also makes visible this contribution and provides attribution in publications. This is important as publication incentives in academia operate at every level, from research students to professors. Workloads for established academics are increasing, with expectations placed on them to publish more frequently. In addition, while workload is given for supervision in Australian academic institutions, it can be meagre and not typically reflective of the amount of time supervisors spend supporting their students, and workload may not always be clearly defined, with Melrose (2002) finding that in the Australian context, “some universities had policy or procedures about postgraduate supervision workload, which apply at the level of the department or

school but not at the level of the whole organisation. Many have no formal policy at all” (p. 90). Though we believe that this contention could be outdated now, as there is a trend toward universities increasing clarity in this area, there is little current research to support our contention, so this remains speculative. The opportunity to have their work recognised in co-authored publications can provide additional incentive for supervision.

The presence of a notable body of work in the TBP on which the student was not the first author also brings into question the issue of fair authorship attribution. Many institutional guidelines for TBP in Australia clearly state that on all included papers the student must have made the most significant contribution of all contributing authors. For example, the University of Melbourne (n.d.) states the following:

Your co-authors and principal supervisor must declare that you are the primary author and that you contributed more than 50 per cent of the work by completing the Co-author authorisation and Declaration for a thesis with publication form, respectively. The primary author is primarily responsible for the planning, execution and preparation of work for publication. The primary author may not [necessarily] be the first named author.

The contemporary justification for students appearing as secondary authors on work where they have made the bulk of the contribution is of concern. While this appropriation of students’ work may sit comfortably with those who hold a more traditional view toward authorship, in recent times this view is increasingly contested, with the first author being seen as the person who performed the greatest volume of work on a paper. In addition, the extent of contribution to constitute authorship has grown, as stipulated by the Vancouver Protocol:

Authorship credit should be based only on substantial contributions to 1) conception and design, or analysis and interpretation of data; and to 2) drafting the article or revising it critically for important intellectual content; and on 3) final approval of the version to be published. Conditions 1, 2, and 3 must all be met. (International Committee of Medical Journal Editors, 1997, p. 4)

The fact that guidelines such as the aforementioned include the stipulation that “the primary author may not be the first named author” challenge current notions of fairness around academic intellectual property and potentially put at risk correct attribution for students. It also places supervisors who insist on being first author in an odd position; on one hand, they are accepting credit for being the greatest contributor on the paper, and on the other, they are signing a document to declare that this was not the case. The unequal power relationships between supervisors and their students may place the students in a vulnerable position to negotiate recognition of their contribution, with Morse (2009) contending that compounding this very subjective system is the delicate matter of power. “The student, as candidate for a degree, is obviously in the most powerless position; the supervisor, as judge, is the most powerful” (p. 3). As such, where institutional guidelines insist that the student must be the primary author on all papers, but that in such cases they are not necessarily required to be the first author, a unique opportunity for exposure of what is arguably dishonest authorial practice exists. While we recognise that this system also allows for the contribution of supervisors to be understated, the concern is heightened for students due to the relative imbalance in power in the supervisor/student relationship.

CONCLUSION

This study has shown that the TBP is finding traction in the HSS field, and in light of the paucity of research examining TBPs in the HSS field, this paper constitutes a valuable starting point for both longitudinal research in this area and research that further investigates some of the pertinent issues raised. While our paper presents an analysis of a non-representative sample of TBPs, it does suggest some trends in the number and nature of scholarly works included in TBPs in Australia that reflect not only common practice but also institutional guidelines and disciplinary norms. Diversity within

this space raises questions about the appropriateness of the TBP approach across all contexts and the degree of support provided across disciplinary areas and institutions.

While journal articles and conference proceedings are the favoured text modes for inclusion in TBPs, we see validity in a broader range of text types and encourage institutions to allow flexibility regarding the inclusion of non-traditional outputs in TBPs. Similarly, while the publication of papers should remain a cornerstone of the TBP model, guidelines should continue to allow the inclusion of papers which are under review or prepared for publication, given the realities of what can be achieved in a limited candidature period.

With our research suggesting that it is not uncommon for students to be secondary authors on the papers that constitute their thesis, further research is warranted into how these decisions are shaped by institutional policy and justified by the parties concerned. We also strongly advocate for increasing the visibility of this thesis type in thesis collections so that current and prospective students can draw upon them for key structural insights to inform their approach. We have acknowledged limitations constraining our study, and we anticipate future innovations, such as greater clarity around institutional completions, holding the potential to increase the rigour of research conducted in this space.

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BIOGRAPHIES



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