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Bridging the expectation gap: a survey of Australian PhD candidates and supervisors in politics and international relations

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ABSTRACT

What do PhD candidates and supervisors say about the quality of PhD training, the supervisory experience, and post-PhD career prospects? With little research into the quality of Australian politics and international relations PhD programmes, and the impacts of COVID-19 exacerbating concerns about academic job prospects, we need to evaluate the quality of PhD training. This paper reports on two mirrored surveys of PhD candidates ($n = 109$) and supervisors ($n = 55$) in Politics and International Relations from twenty-three Australian universities. The survey, conducted in 2022, drew on a 2013 survey of Australian PhD candidates in these disciplines, allowing for temporal comparisons. We find that methods training is perceived as largely non-existent or insufficient. We also find that there is a lack of job preparedness training built into the PhD programme, whether for academic or non-academic careers. Finally, we highlight ongoing gendered disparities that negatively impact female candidates and supervisors.

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1. Introduction

Discussions surrounding the 'declining market for our PhDs' in political science are more than 45 years old (Friedman in Berdahl, Malloy, and Young 2020) and are focused on the lack of academic jobs and how to change and improve the structure of PhD programmes (Laver 2005; Sharmini and Spronken-Smith 2020; Thorlakson 2005). Nevertheless, around one hundred people each year start a PhD in political science and related fields at Australian universities (Australian Government 2022). Are they aware of the limited opportunities in academia, or are they not looking to enter academia? Does the training meet the expectations of candidates and supervisors? Will candidates be ready for academic and non-academic job markets once they finish? These are pressing questions for PhD candidates and their supervisors, as well as university

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management. There is limited research on these questions in Australia, with almost all the extant research focused on America (Barham and Wood 2022; Smith, Gillooly, and Hardt 2022). Yet Casey et al. (2023) have found that the career aspirations and demographics of Australia PhD candidates differ from those of Canadian PhD candidates, with Australians significantly less likely to be seeking an academic career. This means that North American studies may not be generalisable to the Australian context. To address this gap, our research focuses on five key areas of potential concern in the Australian context: perceptions of the PhD programme; type and sufficiency of training offered; publishing pressures; the supervisor–candidate relationship; and gendered challenges.

This article makes three key contributions to the literature on the state of the PhD programme in political science. First, it offers an Australian voice in an overwhelmingly U.S.-centric conversation. Second, it offers a temporal comparison, by drawing on survey questions that were first asked in Kefford and Morgenbesser's (2013) study of Australian politics and international relations PhD candidates. Third, it surveys both PhD candidates and supervisors, allowing comparison of their perspectives. Beyond directly answering the call by Kefford and Morgenbesser (2013, 517) for a 'more informed conversation … between students and scholars', the survey's results are particularly useful for assessing the candidate–supervisor relationship, in light of the importance of agreed expectations and clear communication between the two groups (Cardilini, Risely, and Richardson 2022). By asking the same questions of both groups we were able make a direct comparison of their expectations – the first time, to our knowledge, this has been done in the context of the political science discipline.

Overall, we find there is a fair degree of alignment between the perspectives of candidates and supervisors. There is broad agreement on the need for more training, and an increased focus on supporting candidates with journal publications. The area with the largest misalignment between candidates and supervisors was in relation to career mentoring, with supervisors tending to report that they mentor their candidates for both academic and non-academic careers, while candidates felt that their supervisors largely ignored career mentoring, and focused solely on scholarly abilities. Compared to 2013, we also find a drop in satisfaction with the level support provided by supervisors, which appears to be linked with the frequency of meetings between supervisors and candidates. Given the link between mentoring, supervision and completion rates (Holbrook et al. 2014), and in the wake of COVID-related disruptions to departmental life and candidate experience (Rutledge-Prior and Casey 2023), the importance of regular, ideally face-to-face, communication between supervisors and candidates must be acknowledged. Finally, our survey also offers support for existing findings about the challenges facing women in academia, both as candidates and supervisors. Female candidates appear to receive less support from supervisors, while female supervisors take on a higher supervisory load than their male counterparts.

2. Methods and demographics

This research is based on a survey of political science and international relations PhD candidates and academic supervisors at Australian universities.[1] Many of the survey questions are based on earlier research in Canada by Berdahl, Malloy, and Young

(2020) and in Australia by Kefford and Morgenbesser (2013). The questions were mostly multiple choice, with a few free-text questions. The survey, which was hosted on the Qualtrics survey platform, was open for 6 weeks (from February 24 to April 6, 2022) and distributed by the Australian Political Science Association, as well as promoted on Facebook and Twitter. The authors also sent the survey to Heads of political science departments in Australia, who were requested to forward it on to their networks. There were 173 total responses, including 109 PhD candidates, and 55 PhD supervisors (nine respondents indicated that they were neither, so were excluded from the survey) from 23 Australian universities. The analysis of the survey data primarily relied on descriptive statistics; where the apparent differences in responses of different groups were tested for significance, we used Chi-squared and Fisher's tests, as appropriate.

There were at least six hundred enrolled PhD candidates in political science and policy studies (which includes international relations) in 2020. This includes people not actively engaged in their research, but still enrolled. We estimate, therefore, that there may be around five hundred active PhD candidates. Given our 109 responses, this represents approximately 20% of the sample frame. Responses were broadly representative in relation to full-time/part-time status, domestic/international status and gender. The research-intensive Group of Eight universities[2] were overrepresented, with 65% of respondents, compared to around 45% of the sample frame. The responses are also skewed towards the Australian National University, which accounted for 32% of the

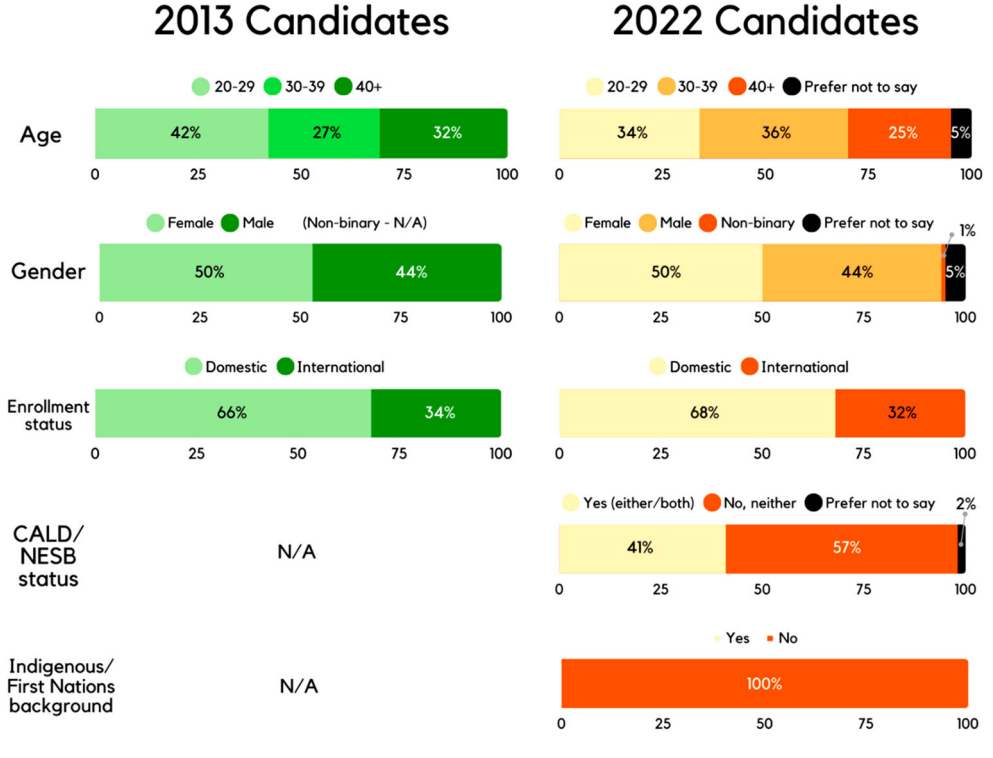

Figure 1. Candidate demographics in 2013 and 2022. **Note*: No 2013 questions asked about domestic/international status directly; we use the 2013 question 'What is your country of origin?', with possible responses 'Australia' and 'other', as approximations.

candidate respondents; the next most represented universities were the University of Sydney (15% of candidates) and the University of Adelaide (9%). Figure 1 provides some demographic statistics, compared to the 2013 survey by Kefford and Morgenbesser.

We estimate that there are fewer than three hundred[3] political science academics in Australia with experience supervising a PhD candidate (Australian Government 2022; Kefford and Morgenbesser 2013; Mayer 2012). This means about 18% of the sample frame completed the survey. This is a similar response to other surveys of Australian PhD supervisors (Cardilini, Risely, and Richardson 2022). While political science-level data on rank/level and gender is not available, it is available at the level of 'Studies of Society and Culture'. Using that proxy, responses are broadly representative based on gender, and slightly skewed towards senior-level academics. More than half of the respondents were Associate Professors (Level D) or Professors (Level E), compared to around 40% of the population; levels B and C, by contrast, were correspondingly underrepresented. Given our survey only included academics who have been on PhD supervisory panels, this skew was expected.

3. The purpose of the PhD programme

Underlying the research on doctoral training are key questions concerning the purpose of a PhD, and what candidates want out of their programmes. Around half of Australian PhD graduates are not employed in education or research positions, and the number of PhD graduates is growing faster than the number of academic jobs (Bentley and Meek 2018; Cuthbert and Molla 2015). The average number of people enrolled in political science PhD programmes has increased by around 24% between 2006 and 2019 (later years have been excluded, given the impact of COVID-19). However, the estimated number of political science academics has fallen over the same period by around 9% (Australian Government 2022), and the number of job advertisements for university lecturers and tutors (across disciplines) has fallen from an average of around 380 per month in late 2006 and early 2007, to only 210 in late 2019 and early 2020 (National Skills Commission 2022). Given this pattern, it is important to understand why candidates undertake a PhD. If it is *not* to enter academia, is there a perception that the PhD will provide them with suitable training for a non-academic career?

Laver (2005) argues that political science doctoral programmes need to focus on training the next cohort of academics, rather than a general research training programme. However, it is not clear that this approach is either reasonable or desirable, given the lack of academic jobs relative to the number of doctoral graduates. Indeed, as clear majorities of both groups in our survey suggest (85% of candidates and 92% of supervisors), the PhD programme's purpose is primarily to train researchers, only some of whom will become academics. However, as will be discussed below, universities are currently ill-equipped to support PhD candidates in pursuing non-academic career paths. This may be concerning, given that most candidates on our survey indicated either that they are *not* primarily interested in a career in academia (22%) or that they are not sure either way (32%).

At the same time, our survey indicated that a clear majority of candidates are interested in pursuing an academic career (Figure 2), with a substantial proportion reporting that they are *primarily* interested in this career path (46%), a finding that was mirrored in

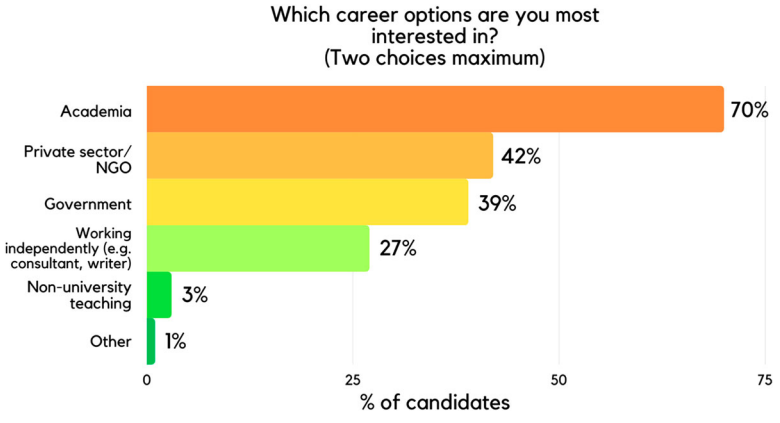

Figure 2. Candidates' desired career paths. $n = 88$.

the responses of supervisors in relation to their candidates (53%). This relative congruence between candidates and supervisors may indicate that candidates and supervisors are openly communicating about the former's career objectives. There is evidence, however, from the qualitative responses on the survey that candidates' experiences have not always been wholly positive in relation to communication with their supervisors. Some candidates suggested that supervisors need to 'listen more to PhD candidates' particular interests as they relate to careers' and focus on 'listening to the needs of their PhD students rather than assuming the students' desired career paths'.

Contrary to the notion that there is a 'cruel optimism' among PhD candidates who (perhaps unjustifiably) believe they can succeed in pursuing an academic career (Guerin 2020), we found a general pessimism among both candidates and supervisors. Only 16% of candidates believed they would be successful in the academic job market. As one supervisor on our survey put it, supervisors need to prepare their students for the prospect that 'the academic job market is broken and that they are unlikely to land an ongoing position, however brilliant they are'. Adding to this lack of optimism was the view of both groups – particularly candidates – that PhD graduates from the UK/Europe and North America are generally advantaged relative to Australian graduates (Figure 3).

The lack of jobs has led some Canadian academics to propose reducing the number of PhD candidates (Berdahl, Malloy, and Young 2020). Such a policy seems unlikely to find support in Australia, with only a quarter of supervisors (28%) agreeing that if PhD graduates are not getting academic jobs, universities should reduce the numbers accepted into their PhD programmes. We suggest that more Australian, and discipline specific, research is needed into the experiences of recent graduates – particularly those who have not pursued, or not been able to pursue, an academic career – to help inform policy decisions in this regard. While not gaining an academic career may be a disappointment, graduates in this position may nevertheless *not* regret having done their PhD. To prevent people from pursuing a doctoral degree on the basis that they *might* regret it in the future, at least without further evidence to support the benefits of this policy, seems unreasonably paternalistic. Instead, a better solution, also proposed by Berdahl, Malloy, and Young (2020), may be changing the structure of PhD programmes

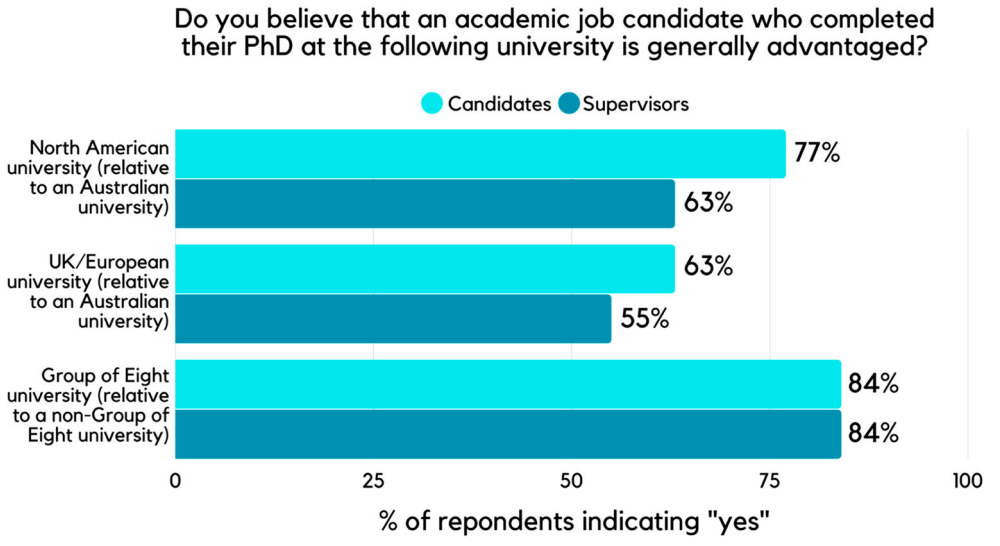

Figure 3. The perceived relative value of PhD programmes, by candidates and supervisors.

to better prepare graduates for roles outside academia. At the same time, our survey revealed two areas where departments can do more to support candidates for academic carers: methods training and publications. These will be explored in detail below.

4. Availability and sufficiency of methods training

An important point of differentiation between Australian and North American PhD programmes is the level of methods training offered/required, with the former providing little or no coursework by contrast with the latter's 2–3 years' worth. Some argue that high course loads detract from research time (Laver 2005; Metcalfe and Kiley 2000), while others argue that the coursework is essential to develop the research skills necessary to complete their PhD research and get an academic job (Moreno 2014). Our survey asked about the availability and sufficiency of training in research design and causal inference; epistemology and ontology; theoretical concepts, papers and frameworks employed in your (sub)discipline; quantitative methods; and qualitative methods (Figure 4). In none of these areas did a majority of candidates indicate that the training was 'sufficient for [their] needs'. Substantial proportions of candidates also indicated that the training would have been relevant to their research, but was not available. This is in line with the 2013 study, where just under one-third of PhD candidates reported that they had received enough methodological training during their PhD (Kefford and Morgenbesser 2013). This (perceived) lack of training may be impacting on candidates' feelings about career preparedness, with most candidates in the current survey somewhat (36%) or strongly (19%) disagreeing that there was sufficient training in their PhD programme to prepare them for the academic job market.

Supervisors expressed similar concerns about the availability and adequacy of training (Figure 5). Across these areas, no more than 48% of supervisors agreed that the training was sufficient, while in quantitative methods, only a quarter of supervisors agreed that the

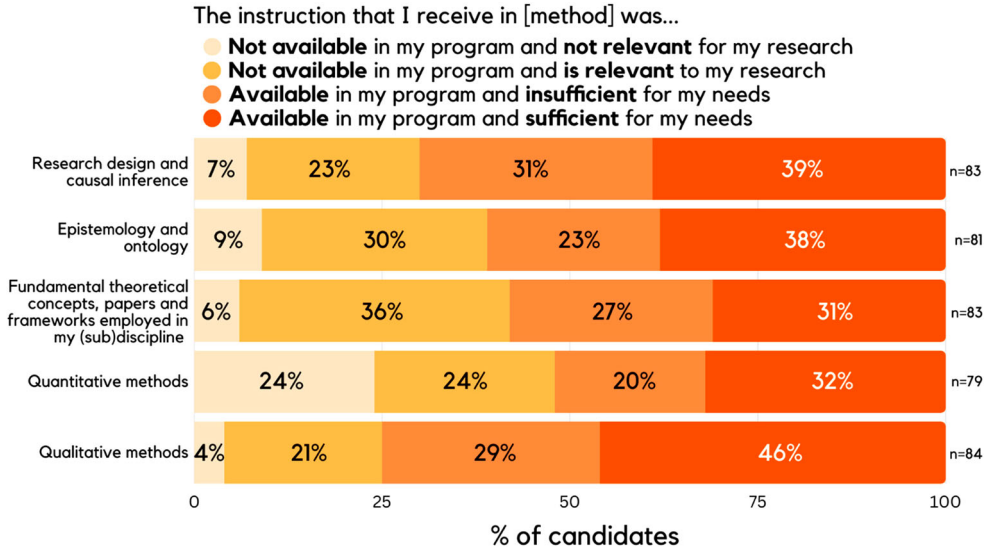

Figure 4. Availability and sufficiency of methods training (candidates).

training was sufficient. In a discipline with such a significant focus on quantitative methods in leading international journals (Bennett, Barth, and Rutherford 2003), even those candidates whose research is qualitative (55% of survey respondents) or theory-oriented (7%), are likely to require a basic level of proficiency in quantitative methods in order to be able to engage effectively with others in the field. In the interests of breaking down methodological silos and encouraging collaboration, ensuring that all candidates have foundational levels of training across methodological approaches is important.

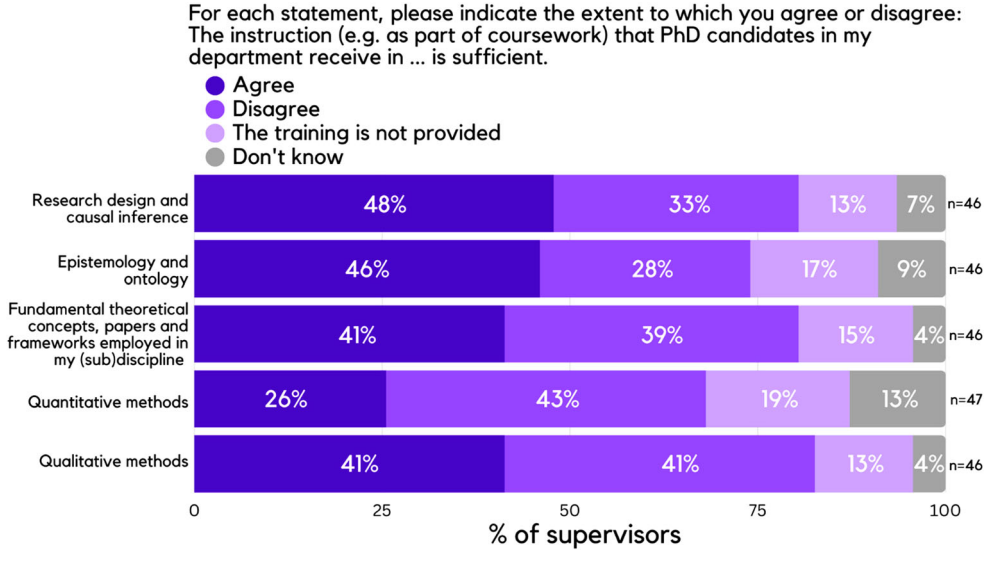

Figure 5. Availability and sufficiency of methods training (supervisors).

While each political science school may struggle to run sufficient methods courses, this presents an opportunity for more collaborative work, to jointly design and fund methods training – perhaps based on the online ANU, IPSA and ECPR methods schools.[4] However, training and skills development can occur both through informal, implicit learning as well as formal coursework and training (Barham and Wood 2022; Mowbray and Halse 2010). In the context of the PhD programme, the former can be promoted through employment as a research assistant (Mowbray and Halse 2010), engaging students as research collaborators, and encouraging students to attend and participate in conferences.

5. The pressure to publish

The declining academic job market has meant that the pressure to publish has expanded from academics to PhD candidates (Khosa et al. 2020), with the standards required to get a permanent entry-level job increasing. This ongoing pressure to publish has been well documented (Plümper and Radaelli 2004), and is at the core of hiring and promotion decisions. However, 'graduate students seldom know how to navigate the publication process' (Rich in Arsenault, Heffernan, and Murphy 2021, 376), as it is usually part of the 'hidden curriculum' (Barham and Wood 2022). Given this, we expected to find evidence of the importance of publications, the pressure to publish, and a lack of confidence amongst PhD candidates in the publishing process.

First, confirming the importance of a strong publication record, both supervisors and candidates thought that a 'Relatively high number of publications in academic journals' and 'At least one publication in a top-ranked journal' were the first and equal-second[5] leading factors, respectively, in increasing the likelihood that a recent graduate would obtain a permanent, entry-level, academic job.[6] The importance of publishing also came through in the qualitative results, with supervisors suggesting that they should make sure students are 'prepared to hit the ground running to give it their best shot (i.e. publishing in year one, etc.)' and 'have students publish … as soon as possible'.

However, there is little evidence that the awareness of the need to publish has resulted in an increase in the number of publications that PhD candidates expect to produce during their degree. Research from 2002 indicated that the median number of publications from Australian social science PhD candidates when they completed their PhD was 1.8 (Heath 2002). In 2013, 60% of candidates in political science and international relations predicted they would complete their programme with two or fewer publications (Kefford and Morgenbesser 2013). Our research is consistent with these earlier findings, with 64% of candidates predicting that they would complete their programmes with two or fewer publications. Supervisors were more conservative in their predictions, with almost three-quarters indicating that they expected their candidates to have two or fewer publications, and only 2% (by contrast with 13% of candidates) expecting candidates to have five or more.

We also asked how many articles aspiring academics should expect to publish during their candidature to get a job. Both supervisors and candidates thought that two or fewer publications will *not* be sufficient to give PhD graduates a good chance of attaining an academic position. Instead, candidates and supervisors (46% and 43%, respectively) were most likely to think that three or four publications would be needed to be

competitive on the job market – a finding that generally accords with the figures in 2013, where 52% of candidates predicted that three or four publications would be needed.

Given the consensus regarding the importance of not merely publishing, but publishing numerous papers – ideally with at least one in a top-ranked journal – it is perhaps not surprising that half of later year PhD candidates indicated that they felt 'a moderate amount' or 'a lot' of pressure to publish. Nevertheless, more than a quarter of candidates reported receiving no support in relation to publishing from either their supervisor or department, with around two-thirds (68%) of candidates on the survey reporting that they had received either little or no support in relation to publishing from their supervisors and department.

If all parties agree that more publications are needed to be competitive, supporting activities that increase publications, such as co-authoring, could be a priority of heads of school and HDR convenors. Candidates regard co-authoring as very useful: out of a list of ten activities (including being employed as a research assistant, being included as a collaborator on a supervisor's grant application and being suggested as a peer reviewer), 'co-authoring with a supervisor' was considered the most helpful kind of training that they could receive as part of the PhD programme. Qualitative responses from candidates also specifically identified co-authoring as a priority. Despite this, less than 20% of candidates reported co-authoring with their supervisors – a finding that is not influenced by year of candidacy. Encouraging supervisors, and faculty more broadly, to engage in co-authorship and co-research with PhD candidates (and encouraging PhD candidates to co-author with each other) may be one option to provide additional support to candidates and increase their success in the academic job market. This raises broader cultural questions about differing publishing 'models', both within politics subdisciplines (Wallaschek and Heiberger 2019) and compared to other social sciences and humanities, which is beyond the scope of this paper. We also acknowledge the ethical issues that may arise when supervisors co-author with PhD candidates, given the significant power differential that exists within this relationship (Bozeman and Youtie 2016; Löfström and Pyhältö 2020). There are already a range of suggestions and recommendations that can help supervisors who are unsure how to ensure ethical co-authorship approaches with their PhD candidates (Lokhtina et al. 2022).

6. The role of the supervisor

6.1. Mentor, sponsor, or absentee?

The success of PhD candidates is heavily dependent on the quality of their supervision (Heath 2002; Skakni 2018) and the relationship between candidate and supervisor (Roach, Christensen, and Rieger 2019). One key aspect of this relationship is the frequency of engagement, as a 'lack of regular supportive mentoring' has been identified as a significant issue in supervision (Roach, Christensen, and Rieger 2019, 1244), and 'many experienced their supervisors as unsupportive and disengaged' (Mowbray and Halse 2010, 659). A lack of regular meetings directly feeds into low completion rates in Australia, and satisfaction declines when meetings occur less than monthly (Heath 2002). Given this, we expect to find a similar relationship between the frequency of meetings and overall satisfaction with the support provided by supervisors.

Our survey indicates that a substantial minority of candidates do not feel like they are getting sufficient support from supervisors or other support staff, with approximately one-in-four indicating they were not satisfied. Further, we found evidence of a correlation between frequency of interactions with primary supervisors and feelings of having (in)adequate support. Those who reported meeting with their primary supervisor fortnightly or more frequently were significantly more likely to indicate that they were satisfied with the support provided to them than those who reported meeting monthly or less frequently (87% and 62%, respectively),[7] a finding which aligns with Heath (2002). Communication with one's primary supervisor was even more strongly associated with feeling satisfied with the support provided: 81% of those who met with their primary supervisors fortnightly or more frequently reported being satisfied with their support, by comparison with 48% of those who reported meeting monthly or less frequently.[8]

Levels of satisfaction have also decreased over time, with a drop in those who reported being satisfied with the level of support they were receiving since 2013 (75% to 65%), and an increase in those who 'don't know' whether the support they are receiving is sufficient (3% to 10%).[9] However, we recognise that this may be driven to some extent by the impacts of COVID-19, as the 2022 survey was conducted after 2 years of COVID restrictions (Rutledge-Prior and Casey 2023).

The perceived lack of support also comes through in the qualitative responses, with one candidate reporting that the initial period of the PhD programme can leave one feeling 'totally lost', and another opining that supervisors could 'see themselves as mentors, rather than thinking that supervision is a chore and that you are a waste of their time'. There was also recognition of the structural factors contributing to suboptimal supervisory practices, with another candidate noting that, 'the university system as a whole appears to let down in this respect [i.e. working well with, and understanding the needs of, students] with its intense focus on publication and individualism instead of supervision and teaching'.

Many of the supervisors also recognised that they were not always able to provide optimal supervision of, and support to, their candidates, with the assertion that supervisors 'need more TIME' arising as a common thread in the qualitative responses. Given the increasing number of PhD candidates and decreasing number of academics, the supervision load is also increasing. Respondents indicated that they were supervising (either as a primary supervisor, or an associate supervisor) an average of 3.7 individual candidates. However, we do not have any earlier data to compare with this statistic. Unsurprisingly, supervisors were also sensitive to the structural factors:

> Supervisors need stable careers themselves; I supervised 3 PhD students to completion and currently supervise 4 others while precariously employed. No amount of information or training will fix a broken system – pretending otherwise is victim blaming.

Efforts to improve the supervisor–candidate relationship should not come at the expense of vulnerable supervisors, who may themselves be facing demanding and/or precarious working conditions. Solutions need to be structural, and offer benefits to supervisors as well as candidates. Publishing with candidates, for example, could come to be acknowledged as valuable factor contributing to academics' case for promotion.

6.2. Supervisors and career mentoring

Given the pessimism about the lack of academic jobs, our survey addressed the career mentoring supervisors are providing for both academic and non-academic jobs.[10] This is particularly important given, as indicated above, fewer than half of political science PhD candidates in Australia are primarily interested in pursuing an academic career, and just 14% agree that there is sufficient training in their PhD programme to prepare them for the non-academic job market. Yet while many supervisors indicated they were aware of these non-academic career aspirations, only around one-third of supervisors felt that they were well equipped to help PhD students pursue non-academic career paths (37%), which aligns with Canadian findings (Berdahl, Malloy, and Young 2020). As a number of supervisors suggested in the qualitative sections, more information about non-academic career paths, or information about industry networks, would help.

Not only is there awareness among supervisors that candidates are interested in non-academic careers, it appears that they are also relatively supportive of such plans. Very few supervisors agreed that they measured a PhD student's success in terms of whether they successfully attained an academic position (9%), that supervisors should invest more time in students who plan to pursue an academic career (7%) or that they felt less motivated to supervise students who do not plan to pursue an academic career (11%). As one supervisor noted, 'it's important to encourage PhD students to build diverse skills – academic (teaching & service) but also non-academic', while another said that 'it is [the supervisor's] job to support and mentor [Research by Higher Degree students] to develop their skillset for both academic and non-academic careers'. Nevertheless, this was not always the perception amongst candidates, with a substantial minority suggesting that they did *not* feel fully safe in discussing non-academic career options with their supervisor (42%). One candidate noted that 'my secondary has been quite negative about people pursuing non-academic careers', while another advised supervisors to 'stop thinking everyone wants to be an academic'.

An even greater discrepancy in the perceptions of students and candidates came in relation to career mentoring styles. Nearly all supervisors suggested that they provided career mentoring to their candidates, whether in relation to academic careers alone (17%) or both academic and non-academic careers (78%). However, candidates did not perceive it this way. More than half of all candidates reported that their supervisors were solely focused on their scholarly abilities and did not provide any career mentoring (56%).[11] This significant mismatch in perceptions between candidates and supervisors is striking, and is not explained by the candidate's stage in the programme (i.e. first year or later year).[12]

There are limits to what can be expected from supervisors, particularly when it comes to non-academic career advice, which may be well beyond their knowledge or life experience (Sharmini and Spronken-Smith 2020). As acknowledged above, supervisors may be stretched thin with other responsibilities, and different supervisors, at different stages of their academic career may be better placed to offer advice on academic careers.[13] This is where more institutional solutions could come into play, with university career centres, mentoring programmes (such as the annual Oceanic Conference on International Studies' female ECR mentoring workshop), the Australian Political Studies Association (AusPSA), and HDR convenors potentially playing a more active role. For example,

AusPSA could seek to establish a network of PhD graduates and former academics, who are working in non-academic roles, and build a mentoring programme from this network. There is also an increasing body of literature providing practical advice on non-academic careers (including in government, data science work for quantitative PhD candidates, professional roles within university settings, and interest groups) that can be provided to candidates (Broms and de Fine Licht 2019; Casey and Fletcher 2023; Forrester 2022; Gilbert et al. 2022; Krook 2022). Crucially, there needs to be clear communication about these resources, as candidates may be unaware of them.

7. Gendered experiences of the PhD programme

The final area that we highlight is different gendered experiences of the discipline (Alter et al. 2020; Kantola 2008), and the impacts that these experiences may have on PhD candidates and their supervisors. This is of particular importance given the 'leaky pipeline' of women in political science (Mitchell and Hesli 2013; Pflaeger Young et al. 2021). It is also of particular salience given recent findings of the gendered impacts of COVID-19, with women PhD candidates in this discipline more likely than their male counterparts to report that their plans for employment after their PhD had changed in the wake of the COVID-19 pandemic (Rutledge-Prior and Casey 2023, fn12).

The survey asked respondents about their experience of gender equality in their departments and found that a majority 'agreed' or 'strongly agreed' that candidates were treated equally (64%), a sentiment found even more strongly among supervisors (73%). Despite this positive perception, certain gendered differences emerged that are in line with other findings regarding the different experiences of women and men in academia.[14]

The survey provided some evidence that there may be gendered differences in relation to the candidate–supervisor relationship. First, female candidates reported that they met with their supervisors less often than their male counterparts. While approximately 50% of male candidates met their supervisors fortnightly or more frequently, that figure drops to only 32% of female candidates.[15] Similarly, female candidates were less likely to report communicating with their primary supervisor fortnightly or more frequently than were male candidates with theirs (68% and 74%, respectively).[16] While these findings were not found to be statistically significant at the $\alpha = 0.05$ level, they should not be overlooked altogether. Given the findings above about the linkage between frequency of supervisor engagement, overall satisfaction and likelihood of completion, this is an area of potential concern that could be addressed by supervisors ensuring that all their candidates are getting sufficient attention, engagement, and support.

Second, female academics reported that they are currently supervising (either as a primary or secondary supervisor) approximately 1 more student than their male counterparts, although (arguably given the relatively small sample size) the difference is not statistically significant.[17] The difference becomes both larger and statistically stronger when controlling for academic level, but continues not to be statistically significant.[18] While our survey did not ask about the amount of time supervisors spend on supervision, it is possible that female supervisors are devoting more time to supervision than their male counterparts, a phenomenon which may be explained by perceptions of them as more 'approachable', 'nurturing' and 'caring' (Haynes and Fearfull 2008; White 2004).

Indeed, given anecdotal reports that women academics may be disproportionately burdened with *informal* supervisory duties for candidates not under their supervision, further research is needed to address the extent of this as a potential facet of the exploitation of women's labour – particularly that of women of colour – in the academy (Angervall, Beach, and Gustafsson 2015; Magoqwana, Maqabuka, and Tshoaedi 2019).

Overall, all PhD candidates lack confidence that they will achieve a permanent academic position within 5 years of completing their PhD, with 64% reporting that they are 'not confident'. However, there are suggestions of differences when responses are broken down by gender. While both men and women are approximately equally likely to feel that they will not be successful in the academic job market, male candidates are twice as likely as female candidates to feel that they *will* be successful (23% and 12%, respectively).[19] Additionally, while just over half of male candidates suggested that they were 'not confident' that they would gain an academic position within 5 years of graduating (55%), this figure jumped to 70% for female candidates.[20] While these findings were not statistically significant, given our relatively small sample size, they should not be completely discounted. To the extent that women are less confident about attaining an academic career than men, this may be the result of women's perception that they do not fit with the 'highly agentic "superhero" standard of success' that exists in academia, and may serve to limit their career trajectories (Van Veelen and Derks 2022). Confidence in gaining an academic career may also be related to predictions about publications. Male candidates were twice as likely to predict that they would have five or more publications by the time they graduated by comparison with female candidates (18% and 9%, respectively).[21] Again, these findings were not statistically significant, but they accord with similar findings elsewhere (Hancock, Baum, and Breuning 2013).

Finally, the survey also revealed a concern in relation to childcare. Most PhD candidates indicated that they were unsure of whether or not candidates with children were provided with sufficient support (65%). Of those who did express an opinion, 81% disagreed or strongly disagreed that the support available was appropriate. Similarly, among those with children, 83% expressed that the support was not sufficient, with only 6% agreeing that it was. The availability of (affordable) childcare is, of course, a matter of concern for both women and men. However, given women may choose to delay having children until after their PhD and/or until they attain secure academic employment (O'Keefe and Courtois 2019), and given the challenges in academia facing women who become pregnant or who have dependent children (Amsler and Motta 2019; Ollilainen 2020), the availability of affordable, accessible, and quality childcare is a particularly salient issue for women in the early stages of their career. While it is not an issue that individual departments/supervisors can address alone, it is one about which they should be aware.

8. Conclusion

This paper has investigated whether and how the landscape for Australian PhD candidates in political science and international relations has changed over the past decade, as well where there might be discrepancies between the experiences and expectations of candidates and their supervisors. In most areas, there was broad alignment between candidates and supervisors, which is likely to reflect a good level of communication

between the parties. Both supervisors and candidates expressed substantial concern about the level of training provided, and that it was inadequate to be successful on the academic job market. In the words of one supervisor:

> It is no longer 1975 and [Research by Higher Degree candidates] can no longer waltz into an academic job with no publications. It is [the supervisor's] job to support and mentor RHDs to develop their skillset for both academic and non-academic careers.

Nevertheless, we highlight that candidates were far more likely than supervisors to report that certain areas of methodological training were insufficient or not available. This could imply that candidates and supervisors have different ideas about the sufficiency, value, and/or availability of training in their department. Where it is lacking, methods training could be provided formally through cross-departmental methods training, or informally, through collaborative research projects. If the primary purpose of a PhD is to produce quality researchers (whether or not they go on to be academics), ensuring thorough and robust methods training is vital. As to the provision of career-oriented skills development for candidates, this does not have to be solely the responsibility of supervisors. Other mentoring relationships, including peer-mentoring and established mentoring programmes, may provide opportunities to support candidates through to their preferred career.

The survey also speaks to the need to ensure that PhD candidates can develop their independent research and publishing skills. Since 2013, we have seen minimal changes in the expected number of publications that PhD candidates will have when they finish (two or fewer), and ongoing agreement that around three or four publications are needed to be competitive for an academic job. To address this continuing gap, we suggest that supervisors and other faculty members be encouraged and incentivised to work with candidates on research projects. More joint research will also help to embed candidates into the research environment and culture of the institution and our profession. However, potential ethical issues would need to be addressed and more research on co-authorial cultures, norms and practices in our discipline is warranted (Wallaschek and Heiberger 2019).

Finally, the survey provides limited evidence of the ongoing gendered challenges within PhD programmes for both candidates and supervisors. Female academics may be taking on a disproportionately high formal and informal supervisory load, potentially at the cost of time for their own research, while female candidates may be receiving less support from their supervisors, and may be less confident than their male counterparts that they will obtain an academic career after they graduate. Finally, a strong majority respondents with children indicated that childcare services were not sufficient, an issue that may be particularly salient for younger female academics.

We recognise that any structural changes that increase training and coursework to support those who seek an academic career may 'valorize an academic career despite [its] unlikelihood' (Casey et al. 2023, 8). Furthermore, if the supply of academic jobs does not increase, all we are doing is increasing the standard demanded for an entry-level job. Discussions about the future of the PhD programme in Australia, particularly in terms of its structure and funding, need to be had at all levels of the tertiary regulatory structure, given we are operating on a doctoral education model first designed in the early twentieth century (Bogle 2018) that may no longer be fit for purpose in the 21st. Despite perceptions among candidates and supervisors that doctoral graduates from North

America and the UK/Europe are advantaged relative to their Australian peers, however, reforms need not mean attempting to emulate these overseas models. Indeed, we should keep in mind that structural changes that increase the time taken to complete a PhD will have a range of negative consequences, such as disincentivising people returning to academia later in life (Casey et al. 2023) and may have consequences for women who may choose to delay having children. While suggesting the need for larger structural changes, however, our research also highlights how doctoral programmes can be improved by individual supervisors and departments. Alongside a commitment to advocating for structural reforms, then, we are also calling for more creativity in using the resources that we already have, and a willingness to experiment with new ways of doing things.

Notes

1. Ethics approval from the Australian National University Human Research Ethics Committee, protocol 2021/810. See Appendix A for the full survey instrument.
2. i.e. Australian National University; Monash University; University of Adelaide; University of Melbourne; University of New South Wales – Sydney; University of Queensland; University of Sydney; University of Western Australia.
3. This is based on the ratio of students to tenured/tenurable staff at the University of Adelaide (Mayer 2012) and applying the 'Studies of Society and Culture' student/staff ratio to the number of students undertaking 'political science and policy studies' (Australian Government 2022) and a 2012 estimate (Kefford and Morgenbesser 2013).
4. e.g. https://politicsir.cass.anu.edu.au/events/anu-online-summer-school-political-analysis-2023, https://www.ipsa.org/ipsa-summer-schools and http://www.ecpr.edu/Events/EventTypeDetails.aspx?EventTypeID=5.
5. Alongside 'The panel's perception that the applicant would fit well into the department, in terms of their research interests'.
6. Respondents were given the choice to select up to five of the following: a high quality thesis; relatively high number of publications in academic journals; at least one publication in a top-ranked journal; relatively high number of publications in/contributions to non-peer reviewed or non-academic platforms (e.g. newspapers, blogs, podcasts); extensive teaching experience; excellent SELTs; strong letters of recommendation from supervisors; relatively high number of conference presentations; a high quality job talk; the panel's perception that the candidate would fit well into the department, in terms of research interests; the panel's perception that the candidate would fit well into the department, in terms of personality.
7. Fisher's test p-value = 0.023. See Appendix B, Table 1.
8. $\chi^2 = 8.0$, $df = 1$, p-value = 0.005. See Appendix B, Table 2.
9. $\chi^2 = 6.2$; p-value = 0.045. See Appendix B, Table 3.
10. It might be argued that it is not the role of graduate programmes to prepare candidates for non-academic jobs, if they are open with candidates about the availability of academic jobs and candidates choose to persevere in the programme regardless. To respond, we would stress the need for programmes to indeed be explicit with potential PhD candidates about potential career outcomes. We would also suggest that programmes consider how they can ensure that candidates can learn how to communicate the ways in which the skills they develop in the programme (e.g. in research, administration, teaching, and communication) are translatable to non-academic careers.
11. Fisher's test p-value = 0.000. See Appendix B, Table 4.
12. There is no statistically significant difference when we compare first- and later-years (Fisher's test $p = 0.869$), or male and female candidates (Fisher's test p-value = 0.527). See Appendix B, Tables 5 and 6.
13. The survey found some evidence that junior supervisors (i.e. lecturers and research fellows) were more likely than senior supervisors (i.e. senior lecturers and above) to say that they

focused on 'academic careers', however, this was not statistically significant (Fisher's test p-value = 0.709). See Appendix B, Table 7.

14. In this section we focus on those in the survey who identified themselves as female and male, as there were too few non-binary respondents to include in the analysis ($n = 1$).
15. $\chi^2 = 1.4$, $df = 1$, p-value = 0.238. See Appendix B, Table 8.
16. $\chi^2 = 0.1$, $df = 1$, p-value = 0.706. See Appendix B, Table 9.
17. An average of 4.2 students being supervised among female academics, compared to 3.6 among male academics, $t = 1.0835$; $p = 0.285$. See Appendix B, Table 10(a).
18. t value −1.533, $p = 0.13$. See Appendix B, Table 10(b).
19. $\chi^2 = 2.6$; p-value = 0.279. See Appendix B, Table 11.
20. Fisher's test p-value = 0.417. See Appendix B, Table 12.
21. Fisher's test p-value = 0.6311. See Appendix B, Table 13.

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