

Empirical Study of Employment Arrangements and Precariousness in Australia
Étude empirique sur les aménagements du travail et la précarité d'emploi en Australie
Estudio empírico de los contratos de empleo y la precariedad en Australia

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Article abstract

Much research on precarious employment compares permanent workers with one or two other broadly-defined employment categories. We developed a more refined method of examining precariousness by defining current employment arrangements in terms of job characteristics. These employment arrangement categories were then compared in terms of socio-demographics and self-reported job insecurity. This investigation was based on a cross-sectional population-based survey of a random sample of 1,101 working Australians. Eight mutually exclusive employment categories were identified: Permanent Full-time (46.4%), Permanent Part-time (18.3%), Casual Full-time (2.7%), Casual Part-time (9.3%), Fixed Term Contract (2.1%), Labour Hire (3.6%), Own Account Self-employed (7.4%), and Other Self-employed (9.5%). These showed significant and coherent differences in job characteristics, socio-demographics and perceived job insecurity. These empirically-supported categories may provide a conceptual guide for government agencies, policy makers and researchers in areas including occupational health and safety, taxation, labour market regulations, the working poor, child poverty, benefit programs, industrial relations, and skills development.

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sample of 1,101 working Australians. Eight mutually exclusive employment categories were identified: Permanent Full-time (46.4%), Permanent Part-time (18.3%), Casual Full-time (2.7%), Casual Part-time (9.3%), Fixed Term Contract (2.1%), Labour Hire (3.6%), Own Account Self-employed (7.4%), and Other Self-employed (9.5%). These showed significant and coherent differences in job characteristics, socio-demographics and perceived job insecurity. These empirically-supported categories may provide a conceptual guide for government agencies, policy makers and researchers in areas including occupational health and safety, taxation, labour market regulations, the working poor, child poverty, benefit programs, industrial relations, and skills development.

Over the past 30 years, the economies of developed countries have shifted to more “flexible” work arrangements (Cranford, Vosko, and Zukewich, 2003; De Grip, Hoevenberg, and Willems, 1997). In Australia, those holding a casual or temporary job and non-employees (self-employed, subcontractors, etc.) constituted 28% of the workforce in 1982, 31% in 1988 and 40% in 1999 (Burgess and de Ruyter, 2000).

Flexible work arrangements were originally grouped under the labels of “non-standard” or “atypical work” to distinguish them from the “standard” model of full-time, year-round, permanent employment (with statutory benefits and job security). There were limitations with both terms, not the least of which was a gender bias given that short-term and insecure work arrangements had never been non-standard or atypical for women (Vosko, 2000). More recently, the omnibus terms “contingent work” (originating in the US and popular in North America) and “precarious employment” (originating in France and more popular in Europe and Australia) have been preferred. Although the terms precarious employment and contingent work are often used interchangeably, it can be argued that they capture different aspects of flexible work. The term “precarious” captures the insecurity of jobs where there is no ongoing presumption of permanency or long-term tenure, whereas the term “contingent” connotes labour purchased in a variable fashion at specific times it is required.

The purpose of this study was to categorize current employment arrangements among adult Australian workers using job characteristics. Our aim was to construct a set of mutually exclusive and coherent employment categories as the basis for a more refined study of precariousness, and the relationships between precariousness, occupational health and safety, and worker health.

There is ongoing debate about what categories of work arrangement should be included or excluded under the labels of “contingent” and “precarious” employment. On the one hand, there appears to be agreement about the inclusion of own account self-employed workers (including many mobile or home-based workers), temporary (including on-call), leased (or labour hire) or short-term fixed contract workers. Even so, statistical agencies in the US and Australia have narrowed these inclusions by separating/excluding workers on the basis of their perceptions of continuity in their work—refinements that appear to owe something to political debate over the extent of insecure work (Campbell and Burgess, 2001a, 2001b; Wooden, 2001). On the other hand, opinion appears divided as to whether home-based work, telework or work in other people’s homes (like home-care providers) is contingent, precarious, partly both, or simply too diverse to neatly classify (Felstead et al., 2001). Other potentially problematic inclusions are micro-small business workers (many are self-employed subcontractors) and permanent part-time workers.

Attempts to refine either concept are further complicated since the presence of contingent workers can affect the working conditions of their permanent co-workers (for instance, leading to additional administrative, supervisory or training demands or a preference for contingent pay schemes) (George et al., 2003). These effects may become more profound as the level of contingent workers in the establishment, industry or society increases, or where contingent and non-contingent workers compete directly for tasks (Saksvik et al., 2005; Virtanen et al., 2005a). In short, longitudinal changes associated with the growth of contingent work or labour practices may blur the distinction between nominally contingent and non-contingent workers at a workplace, industry or societal level.

There is a developing research literature on precarious employment and job insecurity, which explores the effects of these phenomena on wages and conditions, union membership, employability, training/skills development, job satisfaction and other attitudes to work, gender equity, and work/life balance (Connolly and Gallagher, 2004; De Witte and Näswall, 2003; Forrier and Sels, 2003; Korpi and Levin, 2001; Yamashita, 2005). There is also extensive research on the health and safety effects of precarious employment and job insecurity (Benach et al., 2000; Lewchuk et al., 2003; Quinlan, Mayhew, and Bohle, 2001; Sverke, Gallagher, and Hellgren, 2000; Virtanen et al., 2005a). Most of these studies only compared permanent workers with one or two other broadly-defined categories of work. More recent studies suggest significant heterogeneity within previously used groupings, such as “temporary employment” (Saloniemi, Virtanen, and Vahtera, 2004). Accordingly, there is growing recognition of the need to move beyond simple dichotomies to more refined classifications in

order to better understand precariousness and its relationships to various employment arrangements (Cranford, Vosko, and Zukewich, 2003; Kivimaki et al., 2003).

Categories of precarious employment utilized in research are often based on a mix of job characteristics, worker characteristics, and in some cases, the adverse exposures that may arise from precarious work. In the literature, factors used to define precarious employment—but perhaps more appropriately should be seen as *indicators* of precariousness—include job insecurity, degree of control over work, regulatory and social protection, income potential and financial security, job hazards and multiple job holding (Burgess and Campbell, 1998; Leiva, 2000; Lewchuk et al., 2003; Saunders, 2003). When job, worker and adverse exposure characteristics are used to define precariousness, the question of whether precariousness is harmful to health becomes self-fulfilling. While employment arrangements, job characteristics, indicators of precariousness and adverse exposures overlap to a large degree, a lack of conceptual clarity limits our ability to assess relationships between precariousness and health outcomes, or indeed to analyse other effects of precarious employment. It is therefore necessary to develop methods of categorizing employment arrangements and precariousness that conceptually distinguish job characteristics from adverse occupational exposures. We used previously developed Australian and Canadian government classifications as a starting point in developing further differentiated employment arrangement categories. Next, we compared job characteristics across these categories, summarizing the most striking findings from our descriptive analysis to provide empirical support for a proposed measure of employment arrangements.

METHODS

Study Design and Sample

A cross-sectional population-based survey was conducted by telephone from a random sample of White Pages listings in the state of Victoria in Australia. To reflect general population occupational group proportions, quotas were set to match Australian Bureau of Statistics (ABS) census proportions of upper white-collar, lower white-collar, and blue-collar groups. The inclusion criteria were 1) age 18 years or older, and 2) working at the time of the survey for profit or pay. Interviews were completed in November 2003 with a 66% response rate from in-frame households to yield a semi-representative sample of 1,101 working Victorians (526 men and 575 women).

In Australia, the growth of temporary employment (much of it part-time) over the past two decades has been more pronounced than in

the US and most EU countries (except Spain) (Campbell and Burgess, 2001a, 2001b). Two subcategories of temporary employment, namely, fixed term contracts and labour hire/temporary agency labour have grown rapidly in the past decade coinciding with a significant de-collectivization of industrial relations laws, especially at the increasingly dominant federal level (Burgess, Rasmussen and Connell, 2004). While there has been an overall decline in permanent full-time work and an associated increase in more temporary and insecure work arrangements across developed nations, the precise mix of employment arrangements in Victoria, Australia might differ from those in other developed countries.

Measures

Socio-demographic data were collected on gender (male or female), age (18–29, 30–40, 41–50, and ≥ 51 years), marital status (categorized as “married or living with partner,” “single,” “divorced/separated,” and “widowed”), number of children living at home, highest level of education completed (post-graduate qualifications, undergraduate qualifications, vocational qualifications, high school completion, and some primary or secondary school completion), and location (urban versus rural/regional, based on post code).

With regard to their current employment status, participants were asked whether they were employed as Permanent Full-time, Permanent Part-time, Casual/Temporary (with no annual or long service leave), Fixed Term Contract, Labour Hire, or Self-employed. Those employed by Labour Hire agencies were further queried as to whether they were hired out to work in different workplaces, or alternatively, if they worked directly for the Labour Hire company (e.g., in the agency office).

Occupations were assigned to five ranked skill levels, according to the Australian Standard Classification of Occupations (ASCO) which applies skill level and skill specialization as major criteria (ABS, 1997). Income, based on average gross weekly earnings in all jobs, was treated categorically and collapsed into quintiles (0–\$299, \$300–499, \$500–699, \$700–999, and \geq \$1000) to approximate ABS percentile data on weekly total earnings (ABS, 2002). Weekly working hours in a main job were calculated as the average number of hours worked per week over the previous month, and treated categorically (< 35 hours/week, 35–49 hours/week, and 50 hours/week, based on ABS cut-points for part-time/full-time hours and “very long working hours” (ABS, 2003). Average weekly hours for all jobs were totalled from hours in a main job and hours in all other jobs and treated categorically in the same way. Other employment characteristics in the questionnaire included number of jobs held, public versus private

workplace, industrial sector (service versus manufacturing), union membership, payment arrangements (paid on the basis of performance, annual salary, hourly wage, or a combination of these), establishment size (total number of people employed at the workplace location) and unwanted periods of unemployment (any in the last five years).

Job insecurity was operationalized using two items from Siegrist's effort-reward imbalance model (Siegrist, 1996): 1) "My job security is poor" (agree or disagree) and 2) if agreed, "How distressed are you by this situation?" The second item was scored on a four-point scale ranging from not at all distressed to very distressed. These items were combined to create an ordinal variable (0 = Job security is not poor, 1 = Job security is poor, but not at all distressed, 2 = Somewhat distressed by job insecurity, 3 = Distressed by job insecurity, 4 = Very distressed by job insecurity), and a dichotomous variable, "Distressed by job insecurity" (0-1 = yes, 2-4 = no).

Mutually Exclusive Employment Status Categories

The Australian Bureau of Statistics (ABS) defines "traditional employees" as having ongoing full-time employment, not receiving their remuneration through a Labour Hire firm, and having both paid sick and holiday leave (2000a). It contrasts this to four types of "non-traditional" employment arrangements in the Australian Social Trends (AST) survey:

- *On going part-time employees* are defined as those employed under the conditions of a traditional employee, but on a part-time basis (less than 35 hours per week).
- *Casual employees* are those who do not have both paid sick and holiday leave and who also identified themselves as being employed as a casual (however, the definition of a casual employee used in other ABS surveys is an employee with no access to paid leave).
- *Restricted tenure employees* are employees who have a preset period of employment. The group comprises *seasonal, temporary and fixed-term* employees.
- *Employees paid by a Labour Hire firm* are employees who receive their payment from a Labour Hire firm and who may or may not have a preset period of employment.

Of these four categories designated by the ABS as "non-traditional," the last three groups are not mutually exclusive (see Olsen and Kalleberg, 2004 for a similar, but mutually exclusive categorization of non-permanent workers in the US and Norway). ABS definitions of employment and

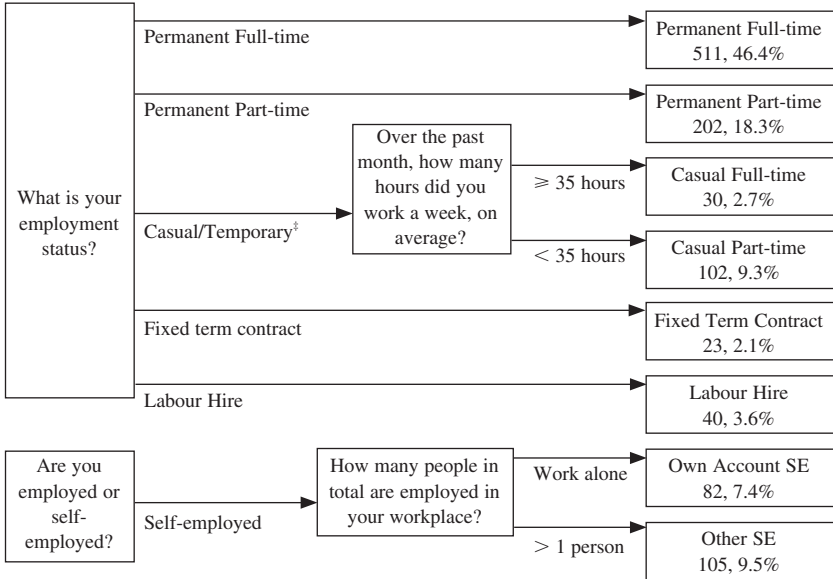
non-employment forms further complicate quantification and analysis of the self-employed (Waite and Will, 2001). “Employees” include owner managers of incorporated enterprises, also known as limited liability companies, with or without paid help (ABS, 2000b). “Employers” and “own account workers” (formerly entitled self-employed) include persons who operates their own unincorporated economic enterprise or engage independently in a profession or trade. While the ABS classifications reflect important labour force conditions specific to Australia (such as the definition and regulatory protection of casual employees), categories of non-traditional employment tend to overlap, and self-employed figures are understated. In an attempt to quantify the diversity in casual employment, Murtough and Waite (2001) found that in 1999, one tenth of those categorized as casual employees by the ABS were owner managers. The Statistics Canada self-employment definition includes working owners of an unincorporated or incorporated business, and persons who work on their own account but do not have a business (Statistics Canada, 2002). Both Statistics Canada and the ABS dichotomize the self-employed into either own account workers (without paid help) and employers (with paid help).

Building on the ABS and Canadian measures, we evaluated the following eight mutually exclusive employment status categories: Permanent Full-time, Permanent Part-time, Casual Full-time, Casual Part-time, Fixed Term Contract, Labour Hire, Own Account Self-employed, and Other Self-employed. These employment status categories are based on self-reported data on the person’s main job (Figure 1). Individuals classified as Own Account Self-employed reported that they work alone in their main job, while those classified as the Other Self-employed reported two or more people employed in their workplace.

Permanent employees could self-identify as part-time or full-time, allowing for comparisons between the workers’ perceptions/expectations of the employment arrangement (perhaps based on the understanding at the onset of employment) and the actual hours worked. For example, of self-identified Permanent Full-time employees, 19 (3.8%) worked less than 35 hours weekly in the main job. Of self-identified Permanent Part-time employees, 33 (16.6%) worked 35 or more hours weekly in the main job, and 7 (3.5%) worked 50 or more hours in a main job they identified as part-time.

Casuals were divided into part-time and full-time employment according to the ABS definitions, with the exception that they are based on hours worked in the main job, rather than in all jobs held. According to the ABS (2004) definition using hours in all jobs worked, a person holding two ongoing part-time jobs could be counted as a full-time employee. This can over-estimate casual full-time work while under-estimating casual part-time

FIGURE 1
Mutually exclusive employment status categories[†]



[†]0.5% missing (3 cases with reported employment status “other,” and 3 casuals with unreported weekly hours in main job) [‡]Casual/temporary (with no annual or long service leave)

work. Since 1997, Statistics Canada has defined part-time employment by hours per week at a main job (Vosko, Zukewich, and Cranford, 2003). We adopted this approach in order to capture differences between single job holders and multiple job holders.

The Labour Hire group contains those workers hired out by a Labour Hire company. It does not include 16 respondents who worked directly for a Labour Hire agency (e.g., in the agency office). These are contained in categories 1–4 (7 Permanent Full-time, 2 Permanent Part-time, 2 Casual Full-time, 5 Casual Part-time).

In addition to the 8-way employment status category variable, we created a 10-way variable in which Labour Hire and Fixed Term Contract were also divided into part-time and full-time employment, in order to assess job insecurity between the full-time and part-time non-permanent categories.

Analysis

For categorical socio-demographic and job characteristics, Chi-square tests were used to compare proportions of individuals across the

employment status categories ($p < 0.05$ significance). The association between hours worked and employment status category was tested using a median test. The analyses were performed using SPSS statistical software (Version 12, SPSS Inc., Chicago).

Two employment arrangement typologies (8-way and 10-way) were used to compare differences and similarities in job characteristics and socio-demographics between potential sub-categories of permanent, temporary and self-employed workers. Statistical tests comparing associations between job characteristics and employment status categories, along with comparisons of similarities and differences between potential sub-categories in the descriptive data, were used to select an optimal typology.

RESULTS

Sample Characteristics

Sample characteristics are presented in Tables 1 and 2. Over one tenth held more than one job. The median for hours/week worked in the main job was lower for women (35) and higher for men (40). The median hours/week worked in all jobs was 40 for both women and men, with ranges 3–146 and 6–110. This is consistent with women's higher likelihood of holding more than one job. One tenth of the sample had average weekly earnings less than \$300, and roughly one fifth earned \$1000 or more per week. One fifth worked in a government workplace, almost half worked in the service sector, one fourth were in the lowest occupational level, and almost one third were union members. Almost half worked in establishments employing fewer than 20 persons, three tenths were employed at their main job for under two years, and one fifth reported unwanted periods of unemployment in the last five years.

Just over half of the sample were women, and 45.9% were living with at least one child. Nearly a quarter of the participants were under age 30. Almost one third held a bachelor degree or higher, and slightly more than one fifth had completed only some primary or secondary school. The majority of the study sample lived in urban Melbourne, with 28% of participants located in regional and rural areas of the state of Victoria.

Employment Arrangements and Job Characteristics

Job characteristics across the eight employment categories are presented in Table 1. Employment status category was significantly associated with all job characteristics assessed, supporting the value of distinguishing categories to this degree.

TABLE 1
Employment Arrangements and Job Characteristics

Job characteristics	Employees					Self-employed			Total	p value
	1. Perm FT n = 511	2. Perm PT n = 202	3. Casual FT n = 30	4. Casual PT n = 102	5. Fixed Term n = 23	6. Labour Hire n = 40	7. Own Acct SE n = 82	8. Other SE n = 105		
Number of jobs held (≥ 2) %	6.5	19.8	26.7	19.0	21.7	17.5	12.2	17.1	13.0	< 0.001
Women	7.6	17.3	17.6	14.5	20.0	11.1	13.6	17.5	13.4	< 0.001
Men	5.2	22.4	38.5	24.0	25.0	22.7	10.5	16.7	12.5	0.146
Weekly hours in main job [§] (median, range)	40 (12-84)	24 (5-70)	40 (35-80)	15 (1-32)	38 (9-50)	35 (7-72)	40 (7-96)	45 (4-95)	38 (1-96)	< 0.001
Women	40	24	40	15	38	35	20	20	35	< 0.001
Men	45	22	40	14	40	38	41	41	40	< 0.001
Weekly hours in all jobs [°] (median, range)	42 (12-106)	25 (5-90)	42 (35-80)	16 (3-43)	38 (10-90)	36 (7-72)	40 (7-146)	50 (4-115)	40 (3-115)	< 0.001
Women	40	40	38	40	43.5	40	38	37	40	< 0.001
Men	40	40	38	40	38	40	39.5	38	40	< 0.001
ABS Income Quintile [§] (0-\$299) %	1.7	22.1	15.4	53.1	5.0	10.5	9.5	8.4	11.1	< 0.001
\$300-499	9.3	36.5	15.4	27.6	10.0	23.7	20.6	14.5	16.0	
\$500-699	26.9	17.7	42.3	12.2	40.0	31.6	22.2	15.7	20.6	
\$700-999	29.1	14.9	15.4	6.1	25.0	26.3	14.3	16.9	19.3	
≥ \$1000	33.0	8.8	11.5	1.0	20.0	7.9	33.3	44.6	21.7	
Occupation level (Skill level 1) [§] %	28.6	22.3	6.7	11.4	43.5	12.5	25.6	36.2	25.3	< 0.001
Skill level 2	8.0	5.9	3.3	9.5	17.4	7.5	9.8	8.6	8.0	
Skill level 3	22.3	12.4	6.7	5.7	0.0	12.5	31.7	29.5	19.1	
Skill level 4	24.3	29.7	30.0	22.9	30.4	37.5	14.6	8.6	23.9	
Skill level 5	16.8	29.7	53.3	50.5	8.7	30.0	18.3	17.1	23.9	
Public/private workplace (public) %	25.8	32.0	3.3	16.0	65.2	22.5	0	0	21.7	< 0.001
Service/manufacturing sector (service) %	38.8	70.8	43.3	68.6	26.1	65.0	40.2	33.3	47.8	< 0.001
Union member (Yes) %	36.4	32.3	13.3	14.7	34.8	25.0	11.0	13.3	28.5	< 0.001
Establishment size < 20 workers %	33.1	43.4	50.0	49.5	26.1	33.3	100.0	86.7	47.4	< 0.001
Length of employment < 2 years %	24.0	27.2	53.3	54.5	47.8	74.4	20.7	15.2	29.4	< 0.001
Periods of unemployment [¶] (Yes) %	14.3	13.9	40.0	44.2	30.0	51.6	22.2	10.9	19.2	< 0.001

*6 cases missing data on employment arrangements. †26 cases missing. ‡35 cases missing. §125 (11.4%) cases missing. Of these, 41 (44.2%) were self-employed. ¶Skill Level 1 – Managers and administrators and Professionals, Skill Level 2 – Associate professionals, Skill Level 3 – Tradespersons and related workers and Advanced clerical and service workers, Skill Level 4 – Intermediate production and transport workers and Intermediate clerical, sales and service workers, Skill Level 5 – Elementary clerical, sales and service workers and Labourers and related workers (ABS, 2004). † 185 (16.8%) cases missing. Of these, over 40% were aged under 30. New entry into the labour market may explain missing cases for this item based on unwanted periods of unemployment in the last five years.

Number of jobs: Overall, 13.0% of workers held multiple jobs. This figure is higher than an ABS (2001) estimate that 7.3% of the workforce (and 8.4% of female workers) held two or more jobs, but this survey preceded ours by three years (conducted in 2000) and previous ABS surveys indicate a growth in multiple jobholding. Most importantly, our survey found non-standard workers were much more likely to hold more than one job when compared with Permanent Full-time employees. Men in categories 3–6 (Table 1) were more likely to hold two or more jobs than women in the same categories.

Hours (main job): Overall, the Other Self-employed tended to work the longest weekly hours in the main job, followed by Own Account Self-employed, Permanent Full-time, Casual Full-time, Fixed Term Contract, Labour Hire, Permanent Part-time, and Casual Part-time. We observed a polarization of part-time and longer hours when weekly hours were stratified by gender, particularly in the self-employed categories, with men more likely to work longer hours and women more likely to work part-time hours. Men were more likely to work longer hours in a main job than women in most other categories. Of those employed Permanent Part-time, women tended to work longer hours per week in a main job relative to men. Similarly, of those employed Casual Part-time, women tended to work longer hours per week in a main job relative to men (median of 15 versus 14).

Hours (all jobs): For average weekly hours worked in all jobs totalled, the Other Self-employed were again mostly likely to work longer hours. The two self-employed groups were most likely to work over 50 hours in their main job, and tended to move above 70 hours for all jobs relative to the main job. For Casual Full-time employees as a group (the most likely to hold more than one job), median weekly hours increased from 40, for the main job, to 42 for all jobs. For part-time workers, average weekly hours tend to move above 35 hours for all jobs relative to the main job.

Income: Other Self-employed were most likely to be high-income earners (over \$1000 per week), followed by Own Account Self-employed and Permanent Full-time employees. Casual Part-time employees were much more likely than any other category to be low-income earners (less than \$299 per week). Labour Hire employees were most likely to earn mid-range incomes (\$500–699 per week). This is consistent with patterns across these categories in terms of education level and weekly hours worked.

Occupation: Corresponding to patterns in education and earnings across employment status categories, Casual Full-time employees were mostly likely to be employed in the lowest occupational level, followed by Casual Part-time employees, Labour Hire and Permanent Part-time. Fixed Term Contract workers were most likely to be employed in managerial/

professional and intermediate level occupations, followed by Other Self-employed, Permanent Full-time and Own Account Self-employed. The Own Account and Other Self-employed categories also had the largest proportions of tradespersons.

Workplace characteristics: While there was a fairly even split between total respondents in the manufacturing and service sectors, Permanent Part-time employees, Casual Part-time employees, and Labour Hire workers were more likely to be working in the service sector. Fixed Term Contract workers were much more likely to be employed in public workplaces than were the other categories, while the Casual Full-time and Self-employed categories were the least likely. Permanent Full-time employees were most likely to be union members, and Own Account Self-employed were the least likely. Fixed Term Contract workers were most likely to work in larger establishments (20 or more employees), Other Self-employed tended to work in smaller establishments, and by definition, all Own Account Self-employed work alone.

Duration of employment: The overwhelming majority of Own Account and Other Self-employed have been employed at their main job for over two years, as have the majority of Permanent Full-time and Permanent Part-time. Of those employees who self-identified as non-permanent (categories 3–6), 82 out of 193 (42.4%) respondents had been employed at the same workplace for more than two years.

Unwanted periods of unemployment: Labour Hire employees were most likely to report unwanted periods of unemployment (over half), and Other Self-employed were the least likely.

Employment Arrangements and Socio-demographics

Socio-demographic characteristics across the eight employment status categories are presented in Table 2. Employment status category was significantly associated with gender, age, education, children at home, and location (urban versus rural/regional).

Gender: Women were more likely to be employed part-time and non-permanently, holding the majority of Permanent Part-time (83.7%) and Casual Part-time (67.6%) jobs, and just over half of Fixed Term Contract and Labour Hire jobs. Men held just over half of Permanent Full-time jobs. Men were more likely to be self-employed, holding 72.0% of Own Account jobs and 59.0% of Other Self-employment.

Age: There was a fairly even age distribution within the two permanent categories. The self-employed tended to be older, with one third over age 50. Mainly self-employed men drove this difference, with 44.7% being over

TABLE 2
Employment Arrangements and Socio-demographics

Socio-demographic variables	Employees					Self-employed				Total	p value
	1. Perm FT n = 511	2. Perm PT n = 202	3. Casual FT n = 30	4. Casual PT n = 102	5. Fixed Term n = 23	6. Labour Hire n = 40	7. Own Acct SE n = 82	8. Other SE n = 105	9. 1095*		
Gender (Women) %	43.6	83.7	36.7	67.6	56.5	55.0	28.0	41.0	52.3	< 0.001	
Age (under 30) %	22.5	22.3	33.3	46.7	17.4	40.0	7.3	11.4	23.4	< 0.001	
30-40	31.1	26.2	20.0	20.0	43.5	32.5	34.1	27.6	29.1		
41-50	27.2	28.7	23.3	21.0	26.1	12.5	17.1	31.4	25.8		
≥ 51	19.2	22.8	23.3	12.4	13.0	15.0	41.5	29.5	21.7		
Women (Single with children) %	10.8	14.2	0.0	20.3	7.7	4.5	13.0	0.0	11.7	< 0.001	
Partnered with children	23.9	52.7	9.1	29.0	38.5	27.3	30.4	67.4	36.7		
Not living with children	65.3	33.1	90.9	50.7	53.8	68.2	56.5	32.6	51.6		
Men (Single with children)	6.3	6.1	5.3	9.1	0.0	22.2	1.7	4.8	6.1	< 0.001	
Partnered with children	43.1	21.2	21.1	3.0	30.0	27.8	42.4	38.7	37.0		
Not living with children	50.7	72.7	73.7	87.9	70.0	50.0	55.9	56.5	56.9		
Education (Primary/secondary) %	21.3	22.4	53.3	14.9	4.3	12.8	22.2	23.1	21.3	< 0.001	
Completed high school	15.0	21.4	6.7	43.6	8.7	23.1	13.6	12.5	18.4		
Vocational qualifications	20.7	16.4	16.7	9.9	17.4	17.9	22.2	21.2	18.8		
Undergraduate college	32.1	29.9	20.0	27.7	47.8	38.5	34.6	35.6	32.0		
Some postgraduate study	11.0	10.0	3.3	4.0	21.7	7.7	7.4	7.7	9.5		
Location (Rural/Regional) %	23.3	27.7	40.0	31.4	26.1	17.5	40.2	36.2	27.9	0.005	

*6 cases missing data on employment arrangements. †Living with one or more children in the household and single (never married, separated/divorced, or widowed).

age 50 for Own Account, and 29.2% for Other Self-employed. However, self-employed women also tended to be older, 38.6% over age 50 for Own Account and 29.8% for Other Self-employed. Workers under age 30 made up large proportions of the Casual Part-time, Casual Full-time, and Labour Hire categories. Male temporary workers tended to be younger, with more than a third (5/13) under age 30 for Casual Full-time, and even greater percentages for Casual Part-time and Labour Hire. Female Casual Part-time workers also tended to be younger, with 38.2% under age 30. Workers over age 30 made up large proportions of Fixed Term Contract holders.

Children at home: Permanent Part-time employees were most likely to be living with at least one child, while Casual Full-time employees were least likely, overall. Of women, those working Casual Part-time were most likely to be single with children, those working as Other Self-employed were most likely to be partnered with children, and those working Casual Full-time were least likely to live with children. Of men, those working for Labour Hire were most likely to be single and report children at home (22.2%, $n = 4$); however, all of these four were aged 18–24, suggesting that the children in their households were siblings or dependents of other adults in the household. Men working Permanent Full-time were most likely to be partnered with children, and men working Casual Part-time were least likely to live with children.

Education: Consistent with their age distribution, Fixed Term Contract holders were more likely to hold a bachelor degree or higher than any other category, while Casual Full-time employees were most likely to have less than a high school education.

Location: Casual Full-time employees and Own Account Self-employed were more likely to live outside of Melbourne than other categories of workers. Workers living outside of Melbourne were less likely to hold Permanent Full-time jobs, while those living in Melbourne were more likely to be hired out by a Labour Hire agency.

Employment Arrangements and Job Insecurity

When job insecurity was assessed across the eight employment status categories, we found prominent divisions between the Other Self-employed (least insecure), permanent and non-permanent (most insecure) categories (Table 3). Permanent Full-time employees reported slightly higher job insecurity than did Part-time Permanent employees. When Labour Hire and Fixed Term Contract employees were divided by weekly hours worked to create a 10-way employment status category variable, Labour Hire Part-time and Fixed Term Part-time employees reported substantially higher job insecurity relative to Casual Part-time (Table 4). Significant associations

TABLE 3
Employment Arrangements (8 Categories) and Job Insecurity

<i>Job Insecurity Variable</i>	<i>Employment Status Categories (8-way)</i>								<i>p value</i>
	<i>Other SE</i> <i>n = 105</i>	<i>Perm PT</i> <i>n = 202</i>	<i>Perm FT</i> <i>n = 511</i>	<i>Casual PT</i> <i>n = 102</i>	<i>Own Acct SE</i> <i>n = 82</i>	<i>Casual FT</i> <i>n = 30</i>	<i>Labour Hire</i> <i>n = 40</i>	<i>Fixed Term</i> <i>n = 23</i>	
My job security is poor (agree)	Count 10	28	85	22	23	15	17	16	
%	10.2	14.1	16.9	21.8	29.1	51.7	43.6	72.7	<0.001
Distressed by job insecurity %	5.1	11.1	11.7	14.9	22.8	27.6	35.9	68.2	<0.001

TABLE 4
Employment Arrangements (10 Categories) and Job Insecurity

<i>Job Insecurity Variable</i>	<i>Employment Status Categories (10-way)</i>										<i>p value</i>
	<i>Other SE</i> <i>n = 105</i>	<i>Perm PT</i> <i>n = 202</i>	<i>Perm FT</i> <i>n = 511</i>	<i>Casual PT</i> <i>n = 102</i>	<i>Casual FT</i> <i>n = 23</i>	<i>Own Acct SE</i> <i>n = 82</i>	<i>Labour Hire PT</i> <i>n = 16</i>	<i>Labour Hire FT</i> <i>n = 17</i>	<i>Casual FT</i> <i>n = 30</i>	<i>Fixed Term PT</i> <i>n = 6</i>	
My job security is poor (agree)	Count 10	28	85	22	9	23	8	10	15	6	
%	10.2	14.1	16.9	21.8	40.9	29.1	50.0	62.5	51.7	100.0	<0.001
Distressed by job insecurity %	5.1	11.1	11.7	14.9	36.4	22.8	37.5	56.3	27.6	100.0	<0.001

were found with job insecurity using each of the employment status category variables (8-way and 10-way). Using the 10-way typology, we found more striking similarities than differences in job characteristics (e.g., income, weekly hours, occupation, union membership) between the Labour Hire sub-categories and between the Fixed Term Contract sub-categories, and so we opted to retain the 8-way variable.

SUMMARY AND DISCUSSION

Building on ABS and Canadian 4-way classifications, eight mutually exclusive employment categories were developed using job characteristics. Employment status category was significantly associated with income, weekly hours, occupation, union membership and all other job characteristics assessed, such that we decided to retain this 8-way categorization. Significant associations were also found between employment status category and gender, age, education, children at home, location (urban versus rural/regional) and perceived job insecurity (Tables 2 and 3). This is consistent with prior research finding that temporary work is associated with perceived job insecurity (Klein Hesselink and van Vuuren, 1999; Näswall and De Witte, 2003; Sverke, Gallagher, and Hellgren, 2000).

Permanent Full-time employees tended to have attained more education, earn higher incomes and work longer hours. Counter to a priori expectation, this group did not report the lowest perceived job insecurity. Overall, it appears that the *self-employed* categories were more similar to Permanent Full-time employees than the other groups, although they were the least likely to be union members. The *Other Self-employed* reported the lowest job insecurity and tended to be older, more educated, work longer hours, and earn high incomes. The *Own Account Self-employed* appeared to be similar to the Other Self-employed with respect to education and income, but were more likely to be male and somewhat less likely to work longer hours. This group reported higher job insecurity than Other Self-employed. *Permanent Part-time* employees tended to earn lower incomes and be employed in lower occupational levels than Permanent Full-time employees. Permanent Part-time employees were predominantly women and they were the most likely category to be living with children.

Overall, the non-permanent employee categories (3–6) tended to report the highest job insecurity. That non-permanent employees tend to be younger is consistent with precarious employment forms being a growing phenomenon, in particular for new entrants to the labour market. Other recent research has also found a very high concentration of young workers (including children) in casual employment (New South Wales Commission for Children and Young People, 2005). Men in these groups of employees

were more likely to hold more than one job and to be younger than women in the same groups. *Casual Full-time* employees tended to be employed in the lower occupational level and they were the most likely group to hold more than one job. *Casual Part-time* employees tended to earn lower incomes and to be employed in the lowest occupational level. They were most likely to be under age 30. *Fixed Term Contract* workers tended to be more educated, earn mid-range incomes, and to be employed in managerial/professional and intermediate level occupations. *Labour Hire* workers were mainly employed in lower occupational levels and were the least likely to have been employed at their main job for more than two years.

It is noteworthy that of those employees who self-identified as non-permanent, 32.3% had been employed at the same workplace for more than two years. Consistent with the shifting of traditional/standard jobs toward more flexible employment, lengthy periods of tenure among temporary employees may also demonstrate the contrast between workers' understanding of the terms of employment agreed to and the actual experience of permanence. Pocock, Buchanan and Campbell (2004) have drawn attention to the phenomenon of "permanent casuals" in Australia: those who often hold long-term and regular jobs, in which workers build up lengthy periods of tenure. In 2003, 57% of casual workers were reported to have more than one year's tenure, with a mean of 2.6 years. "Permanent casual" jobs diverge from standard jobs by virtue of inferior rights and entitlements, including a lack of paid annual leave and paid sick leave, as well as other disadvantages associated with casual status. Identifying whether there are particular clusters of short and long tenure casual employees (by industry, age, etc.) (Junor, 2004), and whether the problems of casual employment are most severe for "permanent casual" employment, warrants attention in future research.

Although some cell sizes in this study were small, it appears that non-permanent employees form a heterogeneous population suggesting the potential for additional subcategories. When Labour Hire workers were divided by weekly hours worked, the full-time and part-time Labour Hire categories ranked side by side in terms of job insecurity (Table 4). Full-time and part-time fixed term categories also ranked side by side, occupying the two highest rankings of job insecurity. This supports the need to investigate Labour Hire and Fixed Term Contract arrangements as distinct from other non-permanent employment forms. Future research based on larger samples should distinguish between different types of temporary contracts (Aronsson, Gustafsson, and Dallner, 2002; Gimeno et al., 2004; Virtanen et al., 2005b).

It is possible to rank categories on a continuum of precariousness according to specific criteria, such as job insecurity. Using three indicators

of precariousness (union membership, firm size and hourly wage), Cranford and colleagues (2003) found that forms of employment in Canada increased in precariousness along a continuum in the same order for each indicator: permanent full-time (least precarious), temporary full-time, permanent part-time and temporary part-time. These authors also cite job insecurity as a key dimension central to establishing whether a job is “precarious.” Using eight employment status categories, we find a ranking order for job insecurity that differs from the Canadian ranking: Other Self-employed (least insecure), Permanent Part-time, Permanent Full-time, Casual Part-time, Own Account Self-employed, Casual Full-time, Labour Hire and Fixed Term Contract (Table 3). Specific employment arrangements may also be associated with different adverse occupational exposures such that a single linear continuum would not capture the different ways in which each category is more or less precarious. Thus, it would seem preferable to assess associations with each exposure independently.

Counter to prior expectation, Permanent Full-time employees reported perceptions of job insecurity on par and slightly higher than their part-time counterparts. This might be explained in part by lower expectations of job security held by part-time workers since Casual Full-time employees also reported much higher job insecurity than their part-time counterparts.

It is also striking that a self-employment category showed the lowest perceived job insecurity (rather than a permanent employment category). We did not divide the self-employed categories into part-time versus full-time self-employment; however, we did find a polarization of hours by gender, with the majority of self-employed women working part-time hours in the main job, while self-employed men tended to work longer hours. Just as for non-permanent employment, there is also independent evidence that self-employment is a heterogeneous category (Smeaton, 2003).

CONCLUSIONS

Both employment arrangements and precariousness have been simplistically defined in previous research. As a first step towards developing more refined measures of precariousness, we have developed an expanded set of mutually exclusive employment arrangements. The previous use of dichotomous measures of precariousness and employment arrangements has led to a conflation of the two. While these two constructs overlap to a large degree, examining the patterns of various indicators of precariousness (such as multiple job holding, length of employment under two years, and involuntary periods of unemployment in the last five years) by employment arrangements show how the two constructs can be distinguished. In some ways, our findings confirm previous understandings

of precariousness, but in other ways, they point to new complexities. We have found that some groups traditionally thought of as precarious (Full- and Part-time Casuals, Fixed Term Contract, and Labour Hire) do show the highest levels of some indicators of precariousness (employed less than two years, multiple job holding, and job insecurity). However, the Own Account Self-employed seem in some ways to be precarious (high multiple job holding, job insecurity), but in other ways not (most employed more than two years). This suggests that defining precariousness based on the concentration of indicators of precariousness would enable a disentangling of this phenomenon from employment arrangements. Another novel finding is that Permanent Full-time employment—usually designated as the reference category in epidemiologic and other research (Vosko, 2004)—was more exposed than some other groups in our sample in terms of job insecurity. The Other Self-employed were the least exposed in terms of job insecurity, highlighting the importance of including the full population spectrum of work arrangements when considering implications for government policy.

Future research should further differentiate subcategories of temporary employees, clusters of short and long tenure casuals and different types of self-employment. We have identified mutually exclusive employment status categories which show significant and consistent differences in job characteristics, and in relation to socio-demographics and perceived job security. These categories are empirically derived and reflect the current labour market in Australia, and thus may be of use to government agencies, researchers and policy makers. Precarious employment has potential policy implications in a range of areas, such as occupational health and safety, taxation, labour market regulations, the working poor, child poverty, benefit programs, industrial relations, and skills development. While regulatory, institutional and other differences mean that these categories cannot be applied to other countries without empirical verification, our research hopefully provides a conceptual guide for parallel studies that will contribute to refining our understanding of precarious employment.

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RÉSUMÉ

Étude empirique sur les aménagements du travail et la précarité d'emploi en Australie

Au cours des trente dernières années, les économies des pays développés ont adopté des aménagements du travail plus flexibles, habituellement libellés sous le titre d'emploi précaire ou atypique. Par exemple, en Australie, ceux qui occupaient un emploi temporaire ou intermittent ou ceux qui n'étaient pas employés (sous-traitants, travailleurs autonomes) constituaient 28 % de la main-d'œuvre en 1982, 31 % en 1988 et 40 % en 1999.

Un nombre croissant de travaux de recherche à l'échelle internationale a déjà analysé l'impact de ce glissement sur la densité syndicale, les salaires, les heures de travail, la sécurité au travail et la santé occupationnelle et, aussi, sur d'autres conditions de travail. Dans l'ensemble, les recherches démontrent que les aménagements du travail du type précaire ou atypique sont liés à des conditions de travail inférieures à celles qui prévalent chez les permanents accomplissant le même travail. La plupart de ces travaux comparent seulement les travailleurs permanents à une ou deux autres catégories de travailleurs largement définies.

La présente étude se veut une tentative de développer une méthode plus raffinée de traduire la précarité en définissant les aménagements du travail actuels, cela en reprenant les caractéristiques d'un emploi et en les comparant avec des données démographiques et des données relatives à l'insécurité d'emploi, telle que vécue par les sujets eux-mêmes. En utilisant une coupe transversale d'une population d'un échantillon pris au hasard, comprenant 1 101 Australiens actifs de la province de Victoria, nous avons répertorié huit catégories d'emploi mutuellement exclusives, notamment, l'emploi de permanents à temps plein (46,4 % des travailleurs de notre échantillon); de permanents à temps partiel (18,3 %); d'occasionnels à temps plein (2,7 %), d'occasionnels à temps partiel (9,3 %); de contractuels à durée déterminée (2,1 %); de travailleurs des agences de travail (3,6 %); de travailleurs à leur propre compte (7,4 %); et d'autres travailleurs autonomes (9,5 %). Ces catégories présentaient des différences cohérentes et significatives au plan des caractéristiques d'emploi, du profil démographique et de l'insécurité d'emploi telle que vécue par les personnes impliquées.

Le recours antérieur à des mesures dichotomiques de la précarité d'emploi et des aménagements du travail a conduit à un amalgame des deux. Alors que ces deux concepts se chevauchent dans une large mesure, le fait d'analyser les modèles d'indicateurs variés de la précarité (tels que l'emploi

multiple, la durée d'emploi de moins de deux années, et les périodes de chômage involontaire au cours des cinq dernières années), en tenant compte des aménagements du travail, nous informe sur la manière dont les concepts peuvent être distingués. D'une certaine façon, nos conclusions viennent corroborer plusieurs notions connues de la précarité mais, en même temps, elles nous révèlent des éléments nouveaux plus complexes.

Comme on pouvait s'y attendre, les travailleurs détenant des emplois occasionnels (à temps plein ou à temps partiel) étaient moins susceptibles d'être membres d'un syndicat que les permanents à temps plein ou à temps partiel. Cette différence était moins prononcée chez les travailleurs des agences de travail et on n'a pas dénoté de différence au plan de la syndicalisation entre les contractuels et les permanents. Nous avons observé un modèle semblable concernant la taille de l'établissement : les permanents, les contractuels et les travailleurs des agences de travail se retrouvaient en plus grand nombre dans des établissements de plus grande taille que les occasionnels.

Nous avons aussi constaté que certains groupes traditionnellement considérés comme précaires (les occasionnels à temps plein et à temps partiel, les contractuels et les travailleurs des agences) se situaient aux niveaux les plus élevés de plus d'indicateurs de précarité (occupation actuelle depuis moins de deux années, emplois multiples et insécurité d'emploi) que les travailleurs à leur compte (la plupart étaient engagés depuis plus de deux années). Tout cela indique que le fait de définir la précarité en retenant comme base plusieurs indicateurs de précarité nous permet de distinguer la précarité de d'autres aménagements du travail.

De façon particulière, nos observations indiquent que l'emploi multiple, un phénomène qui n'est pas détecté par une évaluation des aménagements du travail, se trouve en grande partie dans les aménagements d'emploi les plus précaires de notre échantillon. Plus du quart des travailleurs occasionnels à temps plein (26,7 %) de notre échantillon détenait deux emplois ou plus, contre seulement 6,5 % des travailleurs permanents à temps plein. Le fait de détenir des emplois multiples était aussi plus accentué chez les travailleurs occasionnels à temps partiel (19 %), chez les contractuels à durée déterminée (21,7 %) et chez les travailleurs des agences de travail ou d'emploi temporaire (17 %). Fait intéressant à noter, 19,8 % des travailleurs permanents à temps partiel occupaient deux emplois ou plus, une observation qui peut indiquer que certains travailleurs permanents n'optent pas volontairement pour du travail à temps partiel. Notre étude vient confirmer aussi notre impression que la détention de postes multiples s'est rapidement répandue au cours de la dernière décennie. Au total, 13 % des travailleurs compris dans l'échantillon détenaient deux emplois ou plus, une donnée qui représente presque le double (7,3 %) de celle de l'étude

précédente menée par le bureau australien de la statistique seulement trois ans avant la nôtre (et qui elle-même révélait une hausse importante de l'emploi multiple depuis l'enquête précédente). L'augmentation, l'envergure et la diffusion du phénomène de l'emploi multiple soulèvent des éléments importants de politique et appellent un effort plus poussé de recherche.

Une autre conclusion de notre étude est à l'effet que les personnes de la catégorie des emplois permanents à temps plein, qu'on désigne habituellement comme catégorie de référence dans la recherche de nature épidémiologique et autre, étaient plus exposées que d'autres groupes de notre échantillon à l'insécurité d'emploi. La catégorie des autres travailleurs autonomes était la moins exposée, ce qui fait ressortir l'importance d'inclure le plein éventail des types d'aménagements de travail lorsqu'on considère les implications en termes de politiques publiques.

Les catégories d'emploi que nous avons identifiées sur une base empirique présentent une plus grande capacité de discrimination que les classifications utilisées antérieurement. Des études à venir devraient pousser plus loin les différences dans les sous-catégories de travailleurs temporaires, des regroupements selon la permanence de courte ou de longue durée, de l'emploi autonome occasionnel et de types différents. Nous avons répertorié des catégories de statut d'emploi mutuellement exclusives, qui présentent des différences cohérentes et significatives au plan des caractéristiques d'emploi, en lien avec des données sociodémographiques et avec la sécurité d'emploi telle que vécue par les travailleurs. Ces catégories, obtenues de façon empirique, reflètent l'état actuel du marché du travail en Australie et nous croyons qu'elles peuvent être utiles aux agences gouvernementales, aux législateurs et aux chercheurs. Notre étude fournit aussi un guide pour des études parallèles dans d'autres pays pouvant ainsi contribuer à une meilleure compréhension de l'emploi précaire.