

***Knowledge Workers, Careers and Networks: a case
study of senior female scientists in a UK public sector
organization***

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Abstract

This paper analyses the careers and networks of female senior scientists in a male-dominated, UK public sector organisation engaged in global scientific research. The paper contributes to two bodies of research on women in science and the gendering of the knowledge-based economy that have not previously been considered together through case study research. This is surprising, given the rising interest in knowledge workers and scientists' position as 'archetypal knowledge workers' (Bell 1974). The paper reveals that while the female scientists who are the focus of this paper may be 'bucking the trend' by enjoying quite rapid career progression and a long length of service, they remain tokens amongst their male peers. They are also 'stuck' below the 'glass ceiling' with very few options to progress or leave and continue to face gender-related career challenges. This could be partly attributed to a lack of socialisation into the networks that help future progression and a reluctance to network strategically. The paper challenges knowledge work as a gender-free concept by demonstrating that when a gender lens is applied, women fare less well than their male counterparts in a knowledge-based economy.

Introduction

There remains a paucity of research on the workplace experiences of public sector scientists, especially female scientists (Durbin 2010). This is surprising, in light of the growing interest in the knowledge-based economy, the identification of scientists as knowledge workers (e.g. Bell 1974; Drucker 1993) and science, engineering and technology representing a key sector in the knowledge economy (Walby 2011). A relatively small body of research has emerged since the 1970s, focusing upon the labour process and workplace experiences of public sector scientists and highlighting discontent amongst scientists with levels of pay and career prospects (Cotgrove and Box 1970; Stern 2004) lack of autonomy, work intensification and work-related stress (Danford *et al.* 2009a) a lack of employee 'voice' (Danford *et al.* 2009b) and managing the difficult interface between the scientific and business worlds and the emergence of a 'hybrid scientific community' (Lam 2005, 2007). This body of research highlights a continued deterioration of the working lives of public sector scientists that has spanned forty years. As Danford *et al.* (2009) note, despite seeing the emergence of a widespread interest in the economics and sociology of the so-

called knowledge economy, it seems curious that we still know relatively little about the scientific workplace culture in Britain today. As this paper highlights, we know even less about gender inequalities within such workplaces.

Scientists have been positioned as ‘archetypal knowledge workers’ (Bell 1974; Drucker 1993) who possess high levels of human capital, perform complex tasks that require increasing amounts of knowledge and problem-solving abilities and add value to the organisation through their ideas and judgements (Benson and Brown 2007).

Transformation to a knowledge-based economy has partly been based upon the acceleration of knowledge production (intense scientific and technological progress, spearheaded by knowledge-based communities) (David and Foray 2002: 9-11).

Castells (2000) is perhaps the best known and critiqued author on the knowledge (or ‘new’) economy, which he describes as global, networked and informational and is generally positive about such developments, although he does recognise that there will inevitably be ‘winners’ and ‘losers’ in this type of economy.

Knowledge workers have been described as ‘symbolic analysts’ (Reich 2001) whose expert labour is pooled as a resource into increasingly international external labour markets and who retain a competitive edge. While knowledge has always been a necessary function of society, Bell claims this has now changed in character, with theoretical knowledge being much more central. This change has been partly linked to the growth and branching out of science. There can be little doubt, however, that the implications of a knowledge-based economy are mixed and that inequalities based upon social exclusion, are inevitable (Durbin 2007; Lindley 2002). Others have noted that the knowledge economy/knowledge work debate is prescriptive and insensitive to

real developments in the economy and workplaces (Warhurst and Thompson 2006; Pyoria 2005; Sayer and Walker 1992).

A further criticism is that the knowledge economy literature generally lacks a gender focus, although some important work has emerged in recent years (Walby et al. 2007; Walby 2011; Shire 2007; Durbin 2007; Banks and Milestone 2011). The gender composition of the knowledge economy will depend upon which definition is used - high technology manufacturing, the information sector or knowledge-intensive services - (Walby 2006; Shire 2007). When the 'high technology manufacturing' definition is used, women make up the minority of the workforce but the majority when the human capital (knowledge-intensive services) is utilised. Women are also slightly more likely to be employed in higher level occupations in knowledge-intensive services than in the economy as a whole (Walby 2011).

The knowledge-based economy has implications for gender relations and gender equality as it privileges those with greater amounts of human capital and although women are increasingly gaining educational qualifications, this does not transfer into women doing well (Walby 2011; Mósesdóttir 2011). This is due to several factors, including, motherhood, occupational segregation, gender stereotypes and the devaluation of women's human capital (Walby 2011) as well as the concentration of women's qualifications in the arts and humanities and their lack of specialist skills required for SET careers, and gender inequalities in care work (Mósesdóttir 2011). When a gender lens is applied to the macro economic sphere, it becomes apparent that men and women experience the knowledge-based economy differently. This is also

the case when a micro perspective is used, as this case study research will demonstrate.

With these debates in mind, the working lives of thirteen female scientists within a single case study, male-dominated organisation, are explored. The careers of these particular women are of interest because they represent a group of knowledge workers who occupy senior management positions despite their organisation being male-dominated. The women interviewed straddle three occupational groups: senior management, SET management and science professionals, reflecting their scientific status and progression into managerial roles within their own scientific disciplines. All have reached senior positions but have yet to reach the highest echelons of their organisation. Analysing the careers of these female scientists will also offer an insight into the social inequalities that underpin the scientific workplace.

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