Mobilities in a changing labor market: A critical reading of emergent precariousness employment patterns in the New Economy (0191)

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The shift from an industrial-based production model to a global postindustrial production model marked a fundamental reorganization of employment arrangements. One of the main organizational changes in the New Economy is the use of nonstandard work arrangements, such as temporary and contractual employment. The common wisdom is that these jobs are predominantly low-wage and low-skill; however, the last few decades have witnessed the emergence of a highly-skilled, technical, white-collar workforce employed in nonstandard arrangements (House Committee on Education and the Workforce, 2014; Barker & Christensen, 1998; Kunda, Barley & Evans, 2002; Barley and Kunda, 2005)

In academia, the growth of contingent labor in the form of adjunct teaching appointments and postdoctoral positions is well documented and represents a significant shift in the quality of employment available to many of the most highly-trained STEM workers (Bousquet, 2008; Finkelstein, Galaz-Fontes & Metcalfe, 2009; Cantwell & Taylor, 2013). However, the extent to which similar shifts in employment patterns have impacted the broader STEM workforce is rarely considered. Although employment in STEM fields is considered amongst the most stable and well-remunerated in OECD countries, an increasing proportion of STEM workers are employed contingently. In the US, a conservative estimate asserts that temporary staffing agencies now supply the services of more than 100,000 STEM professionals (CPST, 2006). While these numbers appear small in relation to the total workforce, the trend is significant given that movements in temp employment often predict changes in the broader labor market (Luo, Mann & Holden, 2010).

The rise of non-standard employment may be symptomatic of a softer job market for STEM graduates, yet the higher education literature has yet to consider the impact of this phenomenon at an empirical level. Among the gaps in our knowledge is the extent to which the marginalizing effects of nonstandard employment (e.g. low wages, lack of advancement opportunities) apply to high-skills STEM fields. Some scholars argue that the shift to contractual labor for these workers is likely to result in marginalization and unequal treatment at work, especially for women (Hoque & Kirkpatrick, 2003). In contrast, others argue that contingent labor can have many advantages for these workers, including opportunities to balance work and life commitments, higher compensation levels, and increased flexibility (e.g. Albert and Bradley, 1997). By neglecting these and related aspects of highly-skilled contingent work, the literature risks "confounding the effects of contracting with the correlates of low-skill occupations" (Kunda, Barley & Evans, 2002, p. 237).

In this presentation, I briefly introduce findings from a cluster analysis of STEM workforce data in the 2008-2010 US Census Survey of Income and Program Participation (SIPP). This study revealed the presence of a sizeable group of contingent STEM workers in the US beyond academia. Within this group, important differences emerged regarding the "quality" of employment. One subgroup of "secondary contingent" workers had wages much lower than the national average for the entire US workforce, with no access to training opportunities or benefits. There was also a sizable group of "primary contingent" workers who received high wages as well as health and retirement benefits. Significantly, women represent between 63%-73% of all STEM workers in the secondary and primary contingent subgroups, respectively. The findings suggest that STEM employment in the US is far more heterogeneous than assumed in current reports of STEM employment.

The remainder of the presentation will be devoted to opening up a discussion of the "silences" and "unknowns" in the higher education literature regarding this phenomenon. An important consideration is

the intersection of non-standard employment and different types of mobility, including social, across employment status, and across fields of study (See Hoffman, 2009.) In the US, for example, only 26% of women with STEM college degrees work in STEM jobs (ManPower Group, 2012). In an uncertain labor market, in which employers increasingly turn to contingent work to introduce more flexibility to deal with see-sawing demand, individuals may be unwilling to take these positions or remain in them indefinitely (ManPower Group, 2012). In such situations, career changes into non-STEM occupations may be a less costly alternative to emigration for many STEM graduates. Such changes are costly for society since education is largely financed by public funds (Mishagina, 2012). Moreover, because nonstandard employment is more prevalent amongst female STEM workers (National Science Foundation, 2011; Torres-Olave, 2013), it is quite possible that there is a link between the two phenomena as of yet unaccounted for in the literature.

How does the growth of global staffing agencies dedicated to STEM professionals, such as Kelly STEM Inc., Randstad Deutschland GmbH & Co., impact the employment opportunities available to STEM graduates from certain backgrounds? For example, in the US, a degree of controversy surrounds the fact that over a third of all H-1B visas were granted to offshore-outsourcing (staffing) firms, which use temporary work visas to supply cheap, highly-skilled workers in the US. There is concern not only that many of these workers face extremely precarious employment conditions, but also that their influx into the national labor market is extending downward pressure on wages for domestic STEM workers (Young, 2014).

Finally, are there alternate, more comprehensive measures to estimate outcomes for STEM graduates that allow us take into account engaging the momentous changes in employment relations globally, and taking into consideration differences in labor policies regarding non-standard employment, such as between the US and Germany? A significant problem is that the lack of comparable data precludes the ability of researchers to assess prevalence of the STEM contingent trend in other countries and/or regions. Yet there is a need to consider how this trend may contribute to broader labor phenomena such as the cross-border mobility of highly-skilled S&T workers in high-mobility regions like the EU and North America.

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