

## A Political Economy of Knowledge Production

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In his farewell address on January 17, 1961 outgoing President Eisenhower coined the now well worn phrase “military industrial complex” in his warning that there is a danger in the confluence of the government’s military establishment and a growing industrial based serving those interests. Specifically, he cautioned that “(i)n the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military industrial complex. The potential for the disastrous rise of misplaced power exists and will persist (Eisenhower 1961).” These warnings, as we all know, have gone unheeded and at present estimates direct spending by the US Department of Defense will reach almost \$664 billion (OMB 2009, Table S.12) while combined defense related expenditures from all sources including debt service has been over a \$1 trillion since 2007 (Higgs 2007). Considering this outlay has only risen since 2007 and the current budget expenditures for 2010 estimated at just under \$3.6 trillion (OMB 2009, Table S.1) we can say the military industrial complex feeds on almost \$0.30 out of every dollar spent by the US government. Few readers of this journal would doubt that Eisenhower’s concern over the existence of misplaced power accompanied by unwarranted influence was overstated.

While some domestic social benefits of military-inspired production can be identified in new materials developed, innovative consumer products available, and the like, it is equally obvious that once such a behemoth is set in motion weaning the political economy from defense related spending is nigh impossible. What district or region of the US does not feed to some degree at that public trough, what Representative or Senator will advocate for a reduction in defense spending if it means his or her district will lose Federal dollars, local tax revenues, jobs and more? One need only look to the political struggle in the 1990s surrounding the attempt to identify and then close underutilized and unnecessary military bases around the country to see the scope of the challenge. In the end, the urgency of building a defense apparatus during the Cold War in the post World War II era of confrontation blinded almost everyone to the dangers so clearly outlined by Eisenhower above. A real danger, aside from the incredible drain on the national weal, is that once

created the defense apparatus should and must be used to justify itself—both in rhetoric and in reality. The upshot has been 5 decades of varying degrees of military adventurism throughout the less developed world: small regional wars, invasions, police actions, larger costly wars—most notably in Korea, Vietnam, Iraq and now Afghanistan—and several large garrisons in Europe and Asia purportedly to act as a deterrent against enemies real and imagined. In other words, the military industrial complex is (to paraphrase the message of the day) too big to be dismantled.

What, might one ask, does this have to do with a political economy of knowledge? The short form is that we are on the doorstep of a new transformation in knowledge production through changes in funding, research and innovation. More to the point, as the articles in this issue demonstrate, there is a shift away from what some authors (see Etzkowitz and Dzisah below) refer to as the vertical integration of universities (as centers of knowledge creation) characteristic of the pre-capitalist and industrial capitalist eras. In principle, universities were the arena in which knowledge was created (at times arguably in a vacuum) apart from the political import of such knowledge or the potential for economic gain as a result of this knowledge. In its place, they argue, we now increasingly find the horizontal integration of politics, economics and universities leading to a three-institution theory of society (in essence there is a shift away first from Marx's single institutional frame, and then Weber's dual institutional frame for understanding society). For this to be so we must come to understand universities as somewhat independent entities whose prominence derives from some fundamental shifts in our general political economy—simply put, universities should be perceived as the engine that will drive the new knowledge based economy of the present day.

There is no surprise in pointing out how knowledge, on one hand, and credentials bestowed by institutions of higher education on the other, characterize much of the discussion of the future of economic activity. Many studies point to the additional earnings over a lifetime accruing to those with a college degree versus those who only have a high-school diploma (and increasingly point out that the latter have a harder time finding work). Much hand wringing has come from the problems posed by a highly politicized terror society denying entry into this country to budding scientists seeking graduate training but coming from “suspect” countries that may be the source of global terror. We hear endless speeches on national and local levels about the importance of a better trained workforce, about the drop in math and science literacy of young people in this country, on how improving school systems and basic education is the critical stepping stone to revitalizing abandoned or declining central cities. Taken together it would seem that knowledge creation is the critical dimension of economic success and political stability in this globalizing world (for a recent scan of issues and policies surrounding intellectual property right world-wide see Haunss and Shadlen 2009).

For a long time universities maintained a status of honest broker in society, its scholars unfettered by the demands of public or private interest, free to search out the truth where it took them regardless of what they find and who might be offended. The image of scholar, however, was depicted by a sense that one had either to devote oneself to a life of relative poverty or come from the moneyed classes and the ranks of the privileged. Indeed, Herman Hesse's depiction of the union between scholarship and the monastic

life in his *Magister Ludi* (*The Glass Bead Game*) is representative of an image of the academy that in some form continued into the start of the second half of the last century. That has all changed in big and small ways, and not surprisingly in conjunction with the growth of the military industrial complex (we might reflect on the campus demonstrations against defense funded research on campus during the anti-Vietnam War protests as an indication of the conflicting missions of the university). A good indication of this change can be seen as we reflect on the role foundation funding has played in setting the agenda for research over the past few decades. This relationship is problematic in that in the end it promotes and reinforces capitalist social relationships even as it steers the development of social science research on campus toward ameliorating the worst consequences of those social relations (Berndtson 2007).

Research dollars are very attractive to universities, and over time the relationship changes from one in which the institution is willing to accept funds to support the activities of its members to one in which the institution shapes its activities to better attract research dollars and support the ongoing operation of the institution. The line increasingly blurs the requirement that universities serve a higher purpose, and in many ways research dollars alter the very composition of its faculty. As Jasper (2002) laments, once research support enters into the equation criteria for promotion and tenure (in essence, the determination of whether faculty keep their jobs and which areas of inquiry is supported by the university) becomes altered, to the general detriment of the humanities and social sciences. The universities seek relevance and strive to have a positive impact on society, and along the way increasingly hope to commercialize the intellectual property of their scientists. The result is in part new management and control structures centered around contract management, and over the past several decades the instructional side of the university has lamented the loss of resources even as administrative functions and their costs have grown (there are significant organizational impacts on changes in contract management—see Mader et al 2007).

Jasper's point is that on one hand areas within the university which are less successful in garnering research dollars become marginalized, and on the other the very practice of research is altered as scholars turn to the quick results in order to publish articles required to keep their jobs, and as a result what the university stands for more broadly necessarily changes. Some argue these changes are necessary as public (state) financial support for education in general is in decline, that universities should be more entrepreneurial about securing alternative revenue streams, and that the demands of a globalizing knowledge economy rewards those on the cutting edge of "serious" (that is, commercially viable) research. The problem is not only felt at the highest level of the knowledge production chain, but reaches down to all levels of education (see Monahan 2005). Scholars working on behalf of corporate interests in the hope that this will ensure their ongoing positions within the university should take a cautionary lesson from the experience of professional industrial relations experts who lost their status over time as a result of their accommodation to corporate interests (see Hillard and McIntyre 2009).

Foundation support has been a significant (and at times the only) source of external funding (especially in those areas not benefiting from Defense related research dollars)

for much of the past 50 years, and only more recently has this funding been augmented by private enterprise. But while foundations were investing in creating positive social changes, Arnove and Pinede (2007) find that they essentially promote the practices which maintain those social and economic circumstances at the root of the causes of inequality and injustice. Money, alone, cannot solve the social problems we face but money can alter the environment in which the kind of research needed to solve social problems is undertaken. We readily distrust research on tobacco or alcohol consumption when that research is funded and conducted under the auspices of industry trade groups or the major firms producing the product. Research conducted on the safety of drugs or the impact of tobacco (to name two significant areas) undertaken within pharmaceutical firms or tobacco companies, or done in labs (or university centers) heavily funded by those firms, rightly or wrongly have the results routinely called into question. Distrust of corporation-based research (especially on the impact or harmful effects of their products) is pervasive, so it is not hard to understand why there might be concerns when that corporate research is relocated inside universities. Increasingly, however, business practices are viewed as essential in helping shape the future of innovation through research—combining the organizational skills of the corporate world, the research experience of universities, and the funding of the public sector.

The Swedish Presidency of the European Union held a conference in September 2009 ([http://www.se2009.eu/en/meetings\\_news/2009/8/31/the\\_knowledge\\_triangle\\_shaping\\_the\\_future\\_of\\_europe](http://www.se2009.eu/en/meetings_news/2009/8/31/the_knowledge_triangle_shaping_the_future_of_europe)), titled *The Knowledge Triangle: Shaping the Future of Europe*, to explore how to better coordinate the different sides of this triangle. The motivation for this event was the claim that increased demands “to engage in education, research and innovation” generally requires better policy coordination to shape the emerging and changing role of institutions in the process of modernization within a global economy. Key foci of this conference included how universities could promote and partake in research on medicine and life sciences as well as how to promote entrepreneurship that brings innovation to the market. According to the organizers, the combination of innovation and entrepreneurship is central to Europe’s modernization agenda. “Involving business is a crucial part of these reforms. Bringing in business can help universities perform and manage themselves better (Quinton 2009: 3).” Business, government and universities must forge new relationships to successfully promote this agenda—in other words, to fully embrace the knowledge triangle.

We are now confronted by a sea change in universities driven in large part by a change in both funding and purpose. Do we worry that soon 30 percent of our national budget will be allocated to some “university-industrial” complex? We can only hope this is the case and take any negative consequences along with all the benefits that accrue to massive funding for educational by our government! But at the same time should be allow globalization and the new knowledge economy, much as we allowed the Cold War and the defense mania it produced, to rush us into a new model of university-industry-government research that calls for greater coordination between these three? At issue is whether and how the traditional functions of the university might or will change under these new relationships, and if indeed these traditional roles and activities of the institution even still exist. Will closer

relationships between industry, government and the university—the core of the triple helix that is the subject of this issue of the journal—lead us into some sort of knowledge-industrial complex (albeit on a smaller scale) where innovation means commercialization of knowledge, where public resources are channeled to support research and discovery only to have that knowledge appropriated in support of some private benefit? Will this system of research focused on innovation and university entrepreneurship crowd out research that has little or no commercial value? Or is this direction of the future the only way to truly unleash and harness the creative forces that have over time been produced at universities as we fully enter a globalizing knowledge-based political economy? The articles in this issue grapple with these questions, and others.

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