

# Concepts of “Applied and Public Sociology”: Arguments for a Bigger Theoretical Picture around the Idea of a “University Third Mission”

Journal of Applied Social Science  
2017, Vol. 11(2) 141–158  
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sagepub.com/journalsPermissions.nav  
DOI: 10.1177/1936724417722580  
journals.sagepub.com/home/jax



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## Abstract

The argument focuses on current concepts of “applied” and “public” sociology proposed especially by the Association for Applied and Clinical Sociology (AACS) and by Michael Burawoy within the American Sociological Association (ASA) in 2004, respectively. A broader concept of “engaged scholarship” is proposed by the author which spans many academic disciplines and fields, that is, can encompass a “bigger picture,” unlike applied or public sociology with their limited sociological focus. The idea of engaged scholarship is linked also to a core set of interrelated “bigger” concepts: (1) use-inspired basic research, (2) university third mission (of socio-economic-cultural development), (3) post-1970s third capitalist industrial revolution (with university role in a knowledge economy as fundamental), and (4) quadruple helix of university-industry-government-civil society (U-I-G-CS) research relations of engagement. The latter four core concepts are examined in some detail to support a bigger-picture framework. Also highlighted are some ambiguities or inconsistencies embedded in the current use of applied and public sociology terminology, especially with reference to how and with whom university engagement is advocated. In the section “Conclusion,” the idea of a social justice-centered mode of engaged scholarship is explored, providing an explicitly value-laden component that is only implicit within current concepts of applied and public sociology.

## Keywords

public sociology, applied research, engaged scholarship, university third mission, quadruple helix, third capitalist industrial revolution

## My Struggles with the Concepts of “Applied Sociology” and “Public Sociology”

The 2004 American Sociological Association (ASA) Presidential Address by Michael Burawoy (2005a) titled “For Public Sociology”—which provides an anchor for the discussion in the present article—in fact also provided me with a core piece of theory, one that I had to confront in 2005 when I was midway through my own extended research project on what I now call “use-oriented research.” This research project, which began in 2000 and spanned a decade of work,

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**Table 1.** Burawoy's Conceptualization of the "Division of Sociological Labor."

	For academic audiences	For extra-academic audiences
Instrumental Knowledge	PROFESSIONAL SOCIOLOGY	POLICY SOCIOLOGY
Reflexive Knowledge	CRITICAL SOCIOLOGY	PUBLIC (TRADITIONAL OR ORGANIC) SOCIOLOGY

Source. Adapted from Burawoy (2005a:11, Table 1).

was initially titled "The Unlocking of Intellectual Knowledge: Case Studies of Applied Research Centers and Units at Universities and Technikons of the Western Cape" (Cooper 2011:6). In it, I focused on in-depth investigation of 11 research centers/units, each of which was undertaking what I initially viewed as "applied" or (as the investigation unfolded) "application-oriented" research. Interviews with these centers/units were undertaken in 2000–2001, with follow-ups in 2005–2007, and final analysis of each case in 2009—leading to the publication of a book, *The University in Development. Case Studies of Use-Oriented Research* (Cooper 2011).

During the period from 2004 to 2006, I undertook a theoretical analysis of my initial findings. In the course of this analysis, I was already developing my core ideas (discussed further below) about how to make sense of these South African-based case studies, incorporating concepts of "use-inspired basic research" (UIBR), and of an emergent post-1970s university third mission of "development" linked symbiotically to what I view as a third capitalist industrial revolution rooted in a global "knowledge economy," and becoming consolidated after the 1980s. As I developed these ideas, I had to take cognizance of Burawoy's own approach to the concept of "public sociology." I viewed this approach, and in particular his concepts of public sociology and policy sociology, both of which were oriented toward "extra-academic audiences" (see Table 1), as one theoretical angle on "application-oriented sociology." While I was writing up my study, I also had to consider the vast literature emerging in response to Burawoy's insertion of the idea of public sociology into the global academic terrain (e.g., Agger 2007; Bonacich 2005; Clawson 2007; Jacobsen 2008; Jeffries 2009; Nichols 2007). (Almost all of these articles and books were directed at academic audiences, itself an interesting a measure of whom sociologists write for!)<sup>1</sup>

It is notable, however, that virtually none of the sets of literature I have located which debate his concept of public sociology deals explicitly with my core concepts of UIBR, the university third mission and the third capitalist industrial revolution, or with my associated concept of the university-industry-government-civil society (U-I-G-CS) as a "quadruple helix" (Cooper 2011:355) of research relations. This set of concepts, elaborated below, served as the theoretical framework for my analysis of how my 11 case study Western Cape research groupings undertook their use-oriented research work with the "wider society."

As an international Fulbright Scholar, I was able to attend the 2010 annual congress of the Association for Applied and Clinical Sociology (AACS) in the United States and have continued to do so almost every alternate year since then. Yet, while encountering many valuable papers and debates on "applied" and "clinical" sociology at these meetings, I have noted here, too, the absence of the above-mentioned concepts from AACS discourses. Nonetheless, during my 2010 U.S. Fulbright visit, it was a journey to Michigan State University (MSU) in relation to its Outreach and Engagement Office—and the MSU documents (especially MSU 1993, 1994) that introduced me to valuable debates around what I now see as the vital concept of "engaged scholarship" (see below)—which has most influenced my own thinking.<sup>2</sup> This has been especially so in relation to issues pertaining to what my book refers to as "use-oriented research"; I now

consider Burawoy's ideas about "traditional public sociology," "organic public sociology," and even "policy sociology" as subconcepts to be located within a bigger theoretical picture or conceptual framework for use-oriented research.

For these reasons, I write this article, which is in many ways about the mental dialogues I have had with Burawoy's "public sociology," and also with the concept of "sociological practice"—specifically with reference to applied and clinical sociology—while writing *The University in Development* and thereafter. In essence, that book embodies the framework of a different set of concepts, to provide what I call in this article the "bigger theoretical picture."<sup>3</sup>

I should nonetheless stress here that while I suggest that the concepts of public sociology and applied and clinical sociology provide a smaller theoretical picture, this is not to deny their importance. For example, they have particular political and ideological relevance, not least within the contemporary academic terrain of American social science. The AACCS's stress on the applied and clinical aspects of sociology is a very important counter to the massive and hegemonic role that the idea of "research without consideration of use" (or what Burawoy calls professional sociology) has played since 1945, not least within the ASA. Similarly, I fully support Burawoy's explicit insertion of the idea of "organic public sociology" into ASA debates; I see this as, in part, an attempt (implicitly) to introduce a much-needed debate around what I call the importance of "social justice-centered engaged scholarship" (Cooper 2015). This article is not, therefore, seeking to underplay the significance of these contemporary debates within American sociology, which, moreover, have very important effects on global sociological debates, including debates in South Africa. Rather, my argument is that there is also a need for a bigger picture, to locate more theoretically the issues that encompass the core idea of use-oriented research. This is crucial particularly in relation to what I refer to below as a post-1970s third capitalist industrial revolution in symbiosis with a second academic transformation, which is ushering in a university third mission with its vision of "economic development" hegemonic over "socio-economic-cultural development." One cannot ignore these massive capitalist-based economic transformations that are simultaneously restructuring university missions globally (with capitalist industry in particular), within the arena of "scholarly engagement with non-academic audiences," that is, within exactly the terrain into which public sociology and applied and clinical sociology seek to insert their activities.

## **Introducing a Bigger Theoretical Picture: Core Ideas**

It is useful to begin by briefly outlining the essence of each of the ideas mentioned above—which are, in fact, an interrelated set of core concepts—to show how they provide a bigger theoretical framework for a university third mission of development linked to use-oriented research. In the sections that follow, I will elaborate on each of these core concepts.

### *UIBR as a Component of Use-oriented Research*

It is important to clarify the concept of use-oriented research, a core concept that evolved after 2005 from my earlier use of the concepts of applied research and application-oriented research. And, to do so, the concepts of UIBR as well as "pure applied research" (PAR) must be understood, as both of these concepts are elements of use-oriented research (see Table 2).

The relationship between these three concepts draws on Stokes's (1997) ideas, summarized in Table 2, which locate UIBR and PAR under the rubric "research inspired by considerations of use," that is, falling under the umbrella category of what I term use-oriented research. As a corollary to this, I view public sociology (and applied and clinical sociology) as use-oriented, and in general comprising a mixture of UIBR and PAR in which the degrees of these two components vary, depending on the researcher and the actual context (see further discussion below).

**Table 2.** Stokes’s Quadrant Model of Scientific Research.

		Is the research inspired by considerations of use?	
		No	Yes
Is the research inspired by a quest for fundamental understanding?	Yes	<b>PBR</b> Pure Basic Research Exemplar: Niels Bohr	<b>UIBR</b> Use-inspired Basic Research Exemplar: Louis Pasteur
	No		<b>PAR</b> Pure Applied Research Exemplar: Thomas Edison

Source. Adapted from Stokes (1997:73, Figures 3–5).

Interestingly, no less a scholar than Edna Bonacich, Burawoy’s iconic example of a leading practitioner of “organic public sociology” (OPS; see Burawoy 2005b:160–62 on “good OPS”), in her own description of her work, implicitly grasps Stokes’s distinction between UIBR and PAR, both of which fulfill functions of use-orientation. As she explained in her article “Working with the Labor Movement: A Personal Journey in Organic Public Sociology,”

In general, I have tried to conduct research that can be of value to the labor movement . . . Ideally I like to work with the [trade union] Organizing Department, helping them to devise campaigns, and trying to do research that is relevant to the campaign. Of course, some unions . . . have their own, highly skilled research staffs, who are experts in campaign research. I cannot compete with their knowledge and experience. What I try to do is develop the “big picture”—how the industry works, what are the social forces surrounding it—and to suggest how they might be used. (Bonacich 2005:107)

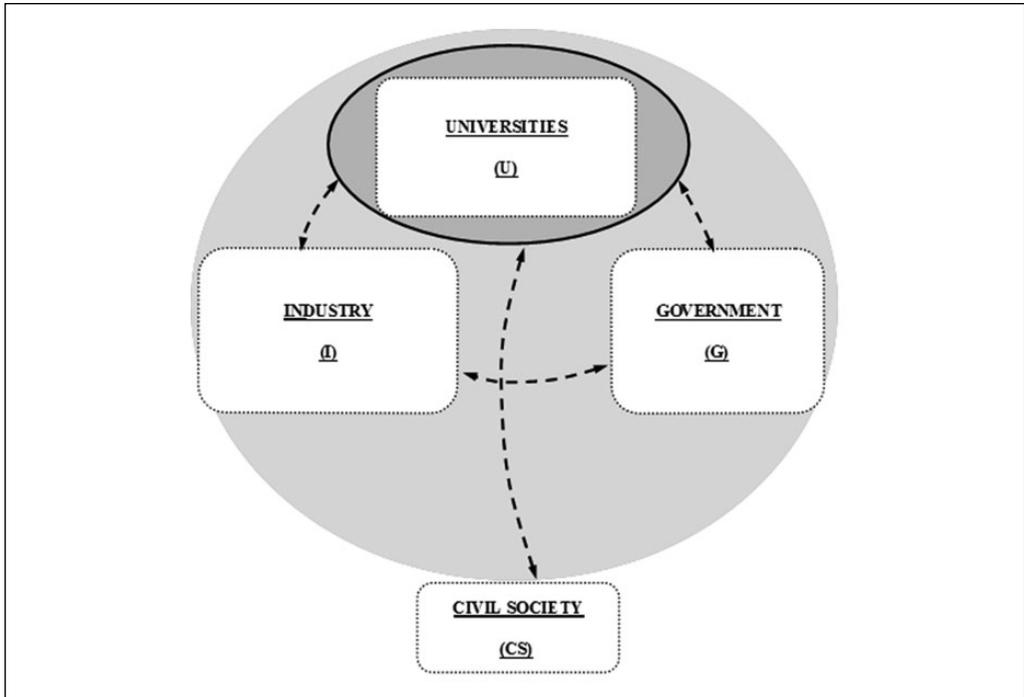
In this quoted extract, I think Bonacich is clearly distinguishing between two sides of the same concept of use-oriented research: UIBR, which she herself focuses on, to provide a theoretically informed “big picture” that the labor movement might *use*, and PAR, which the “highly skilled research staffs” within the trade unions themselves produce to inform the actual campaigns and their specific contexts.

I suggest that to grasp the bigger picture of use-oriented research undertaken by academics globally, including sociologists, it is vital to adopt Stokes’s (1997) important proposal about UIBR–PAR forming a *continuum* along the line of “research inspired by considerations of use,” as set out in Table 2. This, he differentiated clearly from pure basic research (PBR), which he defined as “fundamental research without thought of practical use” (Stokes 1997:73); this is in fact close to what Burawoy defines as professional sociology (see Table 1).

Stokes’s ideas in this regard are pertinent also to the AACSB and the ASA Section on Sociological Practice and Public Sociology (SPPS): Their respective vision statements both refer to “the application or use of sociological knowledge” as core to their very missions or statements of purpose (without in fact clearly defining what application-oriented or use-oriented sociological knowledge is; see AACSB 2015; SPPS 2017, and further below).

### A University Third Mission

It is crucial to understand the idea of use-oriented research as linked to what Etzkowitz (2001) has called the university third mission of “societal development,” alongside the historically very early university first mission of “teaching” (the transmission of knowledge) and subsequent second mission of “basic or fundamental research” (the creation of new knowledge). This second mission took root at German universities in the early 1800s (in what Etzkowitz called the first academic transformation,



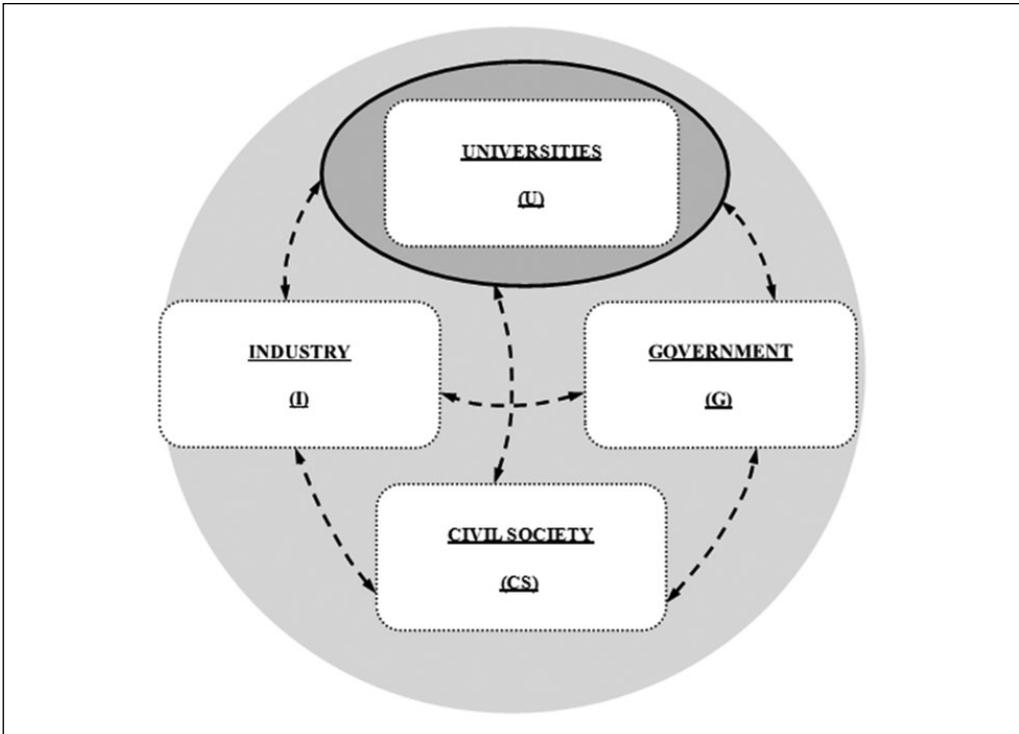
**Figure 1.** The current “orphan” status of CS in relation to the dominant U-I-G triple helix of economic research relations.

Note. CS = civil society; U-I-G = university-industry-government.

joining the second mission to the first), spread to American universities in the last quarter of the nineteenth century, and then became consolidated especially within research-intensive universities (including those in my own country, South Africa) in the twentieth century. While the university third mission of societal development is not new (it was present, for example, within U.S. Land Grant universities established more than 150 years ago), I shall consider below how this third mission has become much more prominent in university rhetoric and in actual practice since the 1970s, in the United States, Europe, and increasingly globally. Within my own case studies of 11 Western Cape research groupings, too, their third mission of research for development in the postapartheid, post-1994 context of South Africa has increasingly been supported by their university administrations (and the national government). I thus argue that it is vital to grasp the bigger picture: that SPPS (and applied and clinical sociology) forms part of a globally emergent and increasingly articulated third mission of “the university in development,” one that is being taken up strongly by many university disciplines and fields rhetorically and in practice, including in what have been traditionally viewed as theoretical or non-applied fields such as physics, mathematics, and even fine art.

### *The Quadruple Helix*

In the course of my research, I found that the great majority of the 11 Western Cape university research groupings I studied focused their third mission of development around what Etzkowitz and colleagues (see, for example, Etzkowitz and Leydesdorff 1999) have called “triple helix” research relationships of U-I-G. In contrast, the Western Cape groupings’ research relations with what I myself (and Buraway) call civil society (CS) were relatively weak or even nonexistent; CS was essentially an “orphan” (see Figure 1, also Cooper 2011:11). I have therefore argued for the



**Figure 2.** The hoped-for future status of CS in relation to a U-I-G-CS quadruple helix of economic-social-cultural research relations for social justice.

Note. I define such a “social justice orientation” of a university third mission as focusing on “the transformation of socio-economic-cultural inequalities such that significantly enhanced opportunities are provided for previously excluded groups, particularly with reference to race, class and gender” (Cooper 2015:240). CS = civil society; U-I-G = university-industry-government.

need for the university third mission to encompass the idea of a quadruple helix of U-I-G-CS research relationships (see Figure 2, also Cooper 2011). I further suggest that it is vital for Burawoy’s ideas about public sociology and policy sociology (both forms of use-oriented research) to be located within the bigger picture, in which a vast number of university disciplines and fields, especially since the 1970s, have been taking on the third mission of development (or use orientation)—but unfortunately with an (often implicit) ideological focus on triple helix research relations, particularly with industry center stage, linked to both government and the university.

### *A Third Capitalist Industrial Revolution after the 1970s*

The last point begs a question: Why has this university third mission of development (with the stress on economic development rather than on my broader concept of socio-economic-cultural development) in the post-1970s period become greatly enhanced globally, such that it is clearly becoming consolidated/institutionalized in the early twenty-first century—not only at the Massachusetts Institute of Technology (MIT; see Etzkowitz 2002) but also at the Harvards, Yales, Princetons, and at the Oxfords, Cambridges, and Chamberses (Sweden) of Europe, spreading also during the past two decades to research-intensive universities in Asia, Latin America, and also Africa? My hypothesis is that this rise of the university third mission of economic

**Table 3.** The Idea of the Second Academic Transformation with a Third Mission, in Symbiosis with a Post-1970s “Knowledge-economy” Third Capitalist Industrial Revolution.

Capitalist industrial revolution	Major technologies (“technological regime”)	Capitalist form of economic organization	Associated academic transformation
First (1770s–1780s) (led by Britain)	Initially, textile machinery, ironworking, water power, pottery, etc. Later (from 1830s), steam engines, railways, etc.	Small family firm	First Academic Transformation (early 1800s until early 1900s in Europe and the United States)
Second (1870s–1880s) (led by Germany)	Initially, electricity, chemicals, steel, etc. Later (from 1920s), automobiles, aircraft, synthetic materials, etc.	National shareholding corporation	
Third (1970s–1980s) (led by the United States)	Initially, ICT, biotechnology, optical fibers, material science, nanotechnology, etc. Later?	Transnational corporation-cum-networks	Second Academic Transformation with Third Mission (takes off from 1980s)

Source. Cooper (2011:93).

Note. ICT = information and communications technology.

development has been symbiotically linked to what I call the third capitalist industrial revolution after the 1970s, whereby industries, particularly transnational corporations (TNCs), to increase their profitability, have turned especially to research-intensive universities, primarily for UIBR. This happened initially in fields like physics and electronic engineering (e.g., information and communications technology [ICT]) and the bio-sciences (e.g., biotechnology), but is increasingly taking place across a far wider range of fields (including, I believe, in the near future in applied sociology and applied anthropology).

One of my core arguments is that Burawoy’s concept of public sociology and the concepts of applied and clinical sociology need much more explicitly to locate themselves alongside the reality of a post-1970s third capitalist industrial revolution (see Table 3). This will not only take account of the bigger picture of how global capitalism, with its increasingly central knowledge economy, *needs* research-intensive universities for their use-oriented research, considerably more so than in earlier phases of capitalism; it will also provide an even stronger argument for the need for what I call social justice-centered engaged scholarship (Cooper 2015), including in the discipline of sociology.

I suggest that the idea of a social-justice orientation is actually implicit in much of Burawoy’s call for public sociology, and also implicit in many of the AACSB debates at its annual congresses on the meaning of applied and clinical sociology, but here I am calling for this to be made more explicit. Only in this way might there emerge a strong call for (1) the quadruple helix of U-I-G-CS to take center stage within a university third mission; and also for (2) many universities globally, which have already become oriented toward economic development on behalf of the third capitalist industrial revolution, to broaden their mission to encompass university involvement in socio-economic-cultural development of society as a whole. But there must also be a third call, for an academic advocacy movement to link public and applied and clinical sociology more explicitly to ideas of social justice-centered engaged scholarship in sociology (and in other academic disciplines, in the natural sciences as well as in social sciences and humanities).

Given this introductory overview of the core ideas informing this bigger picture, and their interrelationships, I turn now to a more detailed discussion of the concepts of UIBR, the university third mission, the third capitalist industrial revolution, and the quadruple helix. I conclude by developing further the idea of locating SPPS within a framework of social justice-centered engaged scholarship.

## Elaborating on the Core Ideas

### *Use-oriented Research: Spanning the Two Poles of UIBR and PAR*

The idea of UIBR drawn from the work of Stokes (1997) significantly influenced my whole perspective on the Western Cape study; as I have already noted (see Table 2), Stokes's differentiation between UIBR and PAR is an essential underpinning of the *use-oriented sociology* that I am advocating.

Essentially, Stokes argues that we need a concept of UIBR located between the traditional ideas of PBR ("the quest for understanding without thought of practical use"; 1997:73) and PAR (research that is "extremely sophisticated, although narrowly targeted on immediate practical goals"; 1997:74). Stokes (1997:74) mentioned the example of Louis Pasteur, whose work, he argued, was rooted in UIBR, "[which] includes basic research that seeks to extend the frontiers of understanding but is also inspired by considerations of use."

This idea of UIBR helped me to deal with a puzzle in relation to data emerging from my 11 Western Cape case studies. Only one case had been selected as an illustration of PBR, or of what I initially termed "curiosity-oriented research." The other 10 were selected in 2000 as an illustration of what I then termed "applied research." However, I increasingly had to confront the fact that most of these 10 selected applied groups were not only undertaking applied research (PAR, in terms of Stokes's definition) but were also undertaking a form of research that, for want of a better term, I initially called "fundamental-applied." This was because I observed that some of their research combined, in a complex unity, fundamental research work with applied work; for example, a wine biotechnology research group, which combined basic biogenetic research into grapes with considerations of using this knowledge to alter the smell of wines (to enhance their marketing potential). Stumbling on Stokes's insightful work after 2005 helped me enormously to crystallize these ideas around the concept of UIBR, a sharper concept than "fundamental-applied." Most importantly, it helped me to theorize another empirical finding that had emerged from the data: that especially at the two research-intensive universities of the Western Cape (the Universities of Cape Town and Stellenbosch), it was often UIBR that industry and government bodies sought most from research centers/units located at these universities, while industrial and other external organizations primarily sought PAR from the two universities of technology in the region (Cape Technikon and Peninsula Technikon).<sup>4</sup> This suggested that what was most valued with respect to research-intensive universities, especially by industry, was not applied research in general but, more specifically, UIBR. (Bonacich made, in essence, the same point about her work in relation to trade union needs, as cited earlier.)<sup>5</sup> This clarification of UIBR also provides, I believe, a way out of the unnecessary tension observed in the United States between an association like the AACS and the ASA in relation to applied research, which is often counterposed to fundamental research; it also raises questions about the value of Burawoy's sharp distinction between public sociology and professional sociology.

I thus prefer the idea of a continuum between (the two poles of) UIBR and PAR; both have their place, depending on the type of use-oriented research in which one is engaged. And both depend and even rest on a vibrant professional sociology, with its stress on theoretical work (as Burawoy explicitly recognizes at various points in regard to public sociology; see, for example, Burawoy 2005a); that is, on what may be termed PBR in sociology.<sup>6</sup> Moreover, both UIBR and PAR can be social justice-centered or not social justice-centered (as can applied sociology and public sociology, respectively), as I argue in the section "Conclusion" of this article.

The idea of UIBR, however, also raised a further puzzling question for me: What was happening in South Africa, and internationally, which was creating a much greater interest on the part of industry in the *output* of UIBR from our universities, especially those like the University of Cape Town (UCT), which are defined as more research-intensive? This drew me to consider the bigger global picture in relation to the growing consolidation of a university third mission.

### *The University Third Mission Associated with a Global Second Academic Transformation*

Part of the answer to the last question, I would argue, can be inferred from the idea of a post-1970s global “second academic revolution/transformation,” a concept that is derived from the work of Henry Etzkowitz and colleagues.<sup>7</sup> In essence, Etzkowitz (1992, 2001, 2002) has suggested that since the 1980s, we have seen across universities internationally (including, I argue, within South Africa) the significant emergence of the university third mission I have already discussed above: a mission to contribute to the socio-economic-cultural development of society (he uses the narrower term “economic development”).<sup>8</sup> As noted earlier, I assert moreover that this new third mission incorporates a combination of UIBR and PAR in varying mixtures, depending on the context and form of the engaged scholarship undertaken by university academics, including sociologists.

A brief historical sociology of universities is relevant here to place the first and second missions in the context of the novelty of a first academic transformation in the nineteenth century; and more particularly to appreciate that the post-1970s new global second academic transformation associated with the third mission is equally novel and far-reaching.

Before the French Revolution, the universities of Europe essentially embodied a first mission of teaching as their primary function. In France, after 1789, the existing universities were closed; this almost happened as well in Germany after Napoleon’s defeat of the Prussian army in 1806. However instead, Wilhelm von Humboldt, the Prussian Minister of Education in 1810, set about a radical reform of existing universities that established the “chair” professorial system (for the emerging new disciplines of linguistics, history, and others, alongside the natural sciences of physics, chemistry, etc.). But even more important was the establishment of a culture of the “science of discovery” (*Wissenschaft*): new knowledge, as the foundation of what can be called this first academic transformation. Thus, by the mid-1800s, as suggested by Turner, a new idea of “research” (a second mission, the creation of new knowledge) had taken firm root:

The modern academic tacitly assumes that discovery arises normally from research, that is, from the systematic application of definite scholarly techniques to some limited area of investigation for the purpose of extracting critical knowledge . . . In fact the very concept of research in its familiar form seems not to have been clearly articulated before 1790. (Turner 1975:528)

The thrust of Turner’s argument was that the great majority of pre-French Revolution German scholars valued instead a “scholarship of a broader, more synthetic” nature (Turner 1975:523), of wisdom and insights across a wide range of fields such as philosophy, metaphysics, and theology; and that “[they] perceived creativity in a far wider range of scholarly activities [including in the teaching of others]. In particular they refused to equate scholarly creativity with discovery alone” (Turner 1975:525).

Of note, too, is that until the American Civil War of the 1860s, in the United States, there were only “university colleges” (Harvard College, Yale College, etc.), providing no postgraduate training of any substance. But in the three decades of the nineteenth century following this war, the current “modern” system of American PhD training (by coursework and thesis) was set up in graduate programs, on top of the undergraduate structure, and shaped by a culture of “research as discovery” like that adopted in German universities as part of the first academic transformation (Geiger 1986:chapter 1). A leading American scholar of higher education systems, the sociologist Edward Shils, had no doubt that this new PhD-cum-professor research system, which mushroomed in all departments across leading American universities soon after the founding in 1876 of Johns Hopkins University (initially only as a postgraduate institution, with PhD training linked to research), involved a major revolution in the universities of the Western hemisphere: “The

foundation of Johns Hopkins University was perhaps the most decisive single event in the history of learning in the Western hemisphere” (Shils cited in Geiger 1986:13–14).

I thus suggest that for the period from the early 1800s until the 1970s, we can see a gradual consolidation of a first academic revolution (joining the second mission to the first mission) across the universities of Europe, spreading to the Americas and then finally into the ex-colonial universities of Asia and Africa after 1945. Slowly, the second mission of basic research—discovery of new knowledge through “systematic application of definite scholarly techniques to some limited area of investigation” (Turner 1975:528), which is also the definition of the (sole) requirement for a doctoral thesis—became established as the “normal work” of professors globally (alongside their first mission: teaching duties). This, too, is the powerful insight of Burawoy in his concept of professional sociology: how, especially after 1945, with the consolidation of the discipline of sociology within North American universities, this second mission of new knowledge production, of PBR, “the quest for understanding without thought of practical use,” in Stokes’s terms, took hold of academia within sociology in terms of directing their core activities and also as becoming the core criterion for tenure and promotion. In many respects, Burawoy’s call for public sociology is also a claim that American sociology is stuck within the firm grasp of the first academic transformation, which began some 200 years ago in Europe.

### *The Second Academic Transformation Symbiotically Linked to a Third Capitalist Industrial Revolution*

The brief historical sociology of universities presented above has sought to show that there was a fairly sharp break, a real academic revolution, in the course of numerous decades after 1800 in Europe, during which a new university second mission (basic research) became fused with the earlier dominant first mission (teaching). The argument here following is that a similar, fairly sharp break or second academic transformation has occurred globally during the decades after the 1970s, with a new third mission of societal development (albeit with heavy initial stress on economic development) taking root alongside the other two missions. Beginning in the 1980s with a third mission being self-consciously articulated by leaders of research-intensive universities in the United States, this third mission movement has spread to European universities and is now gaining momentum internationally, including in South Africa (albeit just emerging there as an overt discourse, still smothered by the second mission architecture of PBR at, for example, the UCT).

It is important to insist on a *break* to justify the claim of a real (second) academic revolution/transformation after the 1970s. My proposed explanation of why such a transformation has taken place—because this academic transformation has been symbiotically linked to the post-1970s emergence of a third capitalist industrial revolution—will strengthen the argument.

However, before presenting a brief argument for this third capitalist industrial revolution being directly linked to a significantly enhanced idea of the university in development, it should be mentioned that the third mission discussed above was not entirely absent prior to the 1980s. Historically, even in the early universities, there was always some idea of a university serving the needs of societal development; thus, some elements of the third mission have always been present within universities. For example, the first mission of teaching has always implicitly embodied elements of (third mission) societal development through providing students with skills useful to society. And in reference to the second mission of basic research, even after the 1870s, the time of onset of a new, more technically based second capitalist industrial revolution, for example, in technologies based on electricity and chemistry (see Table 3), there were also some links to more use-oriented university research: in engineering, in health sciences and natural sciences, and sometimes in sociology (e.g., in the development of questionnaire survey research techniques). For the case of the United States, Mowery et al. (2004) argued in their article, pointedly titled “Ivory Tower and Industrial Innovation,” that the American ivory tower has always, at least since the Land Act of

1862, allocated land for state universities, requiring these institutions to be involved in “practical scholarship,” especially in agriculture and engineering; and that “by the start of World War II, the applied sciences and engineering disciplines were well established within U.S. higher education” (Mowery et al. 2004:20). I, too, have traced how in engineering science at MIT from the 1930s, and at Stanford University after 1945 (which eventually gave rise to Silicon Valley), we can clearly see the beginnings of a strong third mission based on Stokes’s UIBR, itself built on a firm foundation of PBR, combining, in particular, physics with electronic engineering in some fields at these two universities (Cooper 2011:chapter 2, drawing especially on Etzkowitz 2002).

So how is it possible to argue for a fairly sharp break after the 1970s, in terms of a second academic transformation with an associated university third mission becoming clearly, strongly, and globally articulated? In brief, I suggest that a long historical sociological view as shown in Table 3 provides the correct perspective, with reference to three “100-year long wave” capitalist industrial revolutions (see also Cooper 2011:chapter 3).<sup>9</sup>

In the first capitalist industrial revolution after the 1770s, led by Britain, all major technologies (textiles, water power, later railways, etc.) were based on inventions by practical men (not women); the knowledge underpinning these technologies was embedded in such inventions (e.g., the steam engine) and was not the kind of knowledge primarily generated within universities of the time. Then, in the second capitalist industrial revolution from the 1870s led by Germany, university science did play some part in technologies such as electricity and chemicals; but the famous comment by Thomas Edison in relation to his electricity-related discoveries (displayed on the entrance wall to the Edison section of the National Museum of American History in Washington) should be remembered: “I am an inventor not a scientist.” Moreover, in general, private company industrial laboratories played a more significant role than university laboratories in these innovations, which were generally based on empirical observation and experimentation without drawing on an advanced theoretical understanding of the processes involved.<sup>10</sup> And other factors not linked to a knowledge economy were significantly more important for this post-1870s capitalist industrial revolution: for example, the development of national shareholding corporations within manufacture, or new forms of factory organization (like the Fordist assembly line), or the role of colonies themselves in providing raw materials.

For these reasons, in Table 3, the first academic transformation (involving the joining of the second mission to the first mission) is shown as not directly linked to either the first or second capitalist industrial revolutions: This earlier academic transformation sits uneasily between these two capitalist industrial revolutions. Admittedly, science increasingly became linked to the later phases of the second capitalist industrial revolution (with respect to aircraft technology, synthetic materials, etc.), but these links were never as central as is the case in the more recent third capitalist industrial revolution.

However, for the post-1970s, globally based new capitalist industrial revolution linked to what I term its knowledge-economy society, I suggest that the role of universities (especially research-intensive ones) is absolutely fundamental: Table 3 shows the second academic transformation as directly or *symbiotically* connected to this post-1970s third capitalist industrial revolution. University-based scientific knowledge *led by scientific theory* has been a crucial factor in this revolution. This was rooted initially in the 1980s in ICT and then in biotechnology, fields in which physics, chemistry, biogenetics, and even mathematics and computational methods have been indispensable. For example, the electronics on which much ICT is based (e.g., cell phones) is inconceivable without the theories of modern physics developed by university professors (including theories in quantum mechanics), while the unexpected flowering of biotechnology after the 1980s would have been impossible without the fundamental biochemistry (including DNA theories) developed in universities some decades earlier.

I hypothesize, moreover, that UIBR, rooted in advanced scientific theory, has provided the essential foundations for the cutting-edge technologies of this new capitalist industrial revolution, which

is itself led by a new global economic organizational form, the TNC. I have argued further, in terms of a causal explanation (Cooper 2011:91–104), that for about a decade after the late 1960s, there was a slowdown of the global economy linked to some stalling of profitability of these TNCs, and that to sustain and increase their profits, they needed to seek UIBR to “help them out” with technological innovation. And they found such UIBR (by trial and error) there for the picking, initially sourced from university professors and their high-quality laboratories (mainly within the fields of natural science) in the United States and then in Europe. This also therefore throws a different light on prevailing arguments about global neoliberal capitalism, which usually focus on “the market and banks and financial systems”—not on the underlying technology rooted in a knowledge-economy society, where universities play a key role within what Etzkowitz has termed the triple helix matrix.

Thus, according to the arguments above, a university third mission in place since the 1980s has greatly expanded in force within university academic departments in North America and Europe (Cooper 2011), but it has also spread through Australasia, Asia, Latin America, and even Africa (Cooper 2011). As important has been the ideological role of university leaders (especially in countries like England in the last two decades; see, for example, the pages of the U.K. journal *Times Higher Education*), who have taken on the rhetoric of a third mission of economic development for their universities with great force and enthusiasm.

This concept of an emergent global third capitalist industrial revolution provided me with new ways of looking at the Western Cape case studies of research groupings within my study. In particular, it provided insights into why the research missions of most of my 11 cases of use-oriented research for primarily economic development (in other words, the third mission according to Etzkowitz) were so frequently oriented toward industry and sometimes national government as clients. I therefore found that what Etzkowitz and Leydesdorff (1999) defined as the triple helix of U-I-G research relationships was alive and strong within most of my cases.

Yet I have also argued (Cooper 2010) that there is enormous potential for a university third mission to go beyond these narrow triple helix U-I-G boundaries, and to extend into a quadruple helix (U-I-G-CS), as shown in Figure 2 above. Looking toward future global challenges and possibilities, I do not see why the twenty-first century cannot experience an increasing spread of new technologies derived from a much wider range of academic disciplines and fields, including the social sciences. These technologies (innovative ways of developing practices or products) can include, for example, new and sustainable forms of transport and housing, new modes of city planning, new socioeconomic strategies for dealing with environmental problems, innovations in work organization and employment creation, development of new cultural forms, and so on, in addition to the existing technologies listed in Table 3 that have been at the cutting edge of the third capitalist industrial revolution. All these university-based social science and humanities-linked technologies could, moreover, have a major and very positive impact on the lives of poor people across the globe, including the vast majority of people in a country like South Africa—if their use-orientation were what I term social justice-centered.

And surely these socioeconomic and cultural innovations will not be meaningful unless CS organizations and groups are treated not only as central “clients” for many of these technologies but, as importantly, are enabled to *engage with* universities in diverse collaborative partnerships, so that they participate in shaping the nature and form of these technologies. This point leads into discussion about the need for clarity about a quadruple helix in relation to prevailing ideas about public sociology and applied sociology.

### *Clarifying the Components of the Quadruple Helix (U-I-G-CS)*

This bigger picture of a post-1970s third capitalist industrial revolution, in symbiosis with a second academic transformation that has increasingly swept across our universities with demands for the university in development embedded in U-I-G relations, provides a broader context for

the call for public sociology in the ASA presidential address of 2004. Burawoy (2005a:7, emphasis added) put it succinctly when he said, “What should we mean by public sociology? Public sociology brings sociology into a conversation with publics, understood as people who are themselves involved in conversation. It entails, therefore, a *double conversation*”—that is, a dialogue of engagement or two-way relationship between academics and nonacademics. And the AACS mission statement implicitly seems to hold similar views of sociological engagement with the public or community, aiming to “[p]romote the application of sociological knowledge for *beneficial social change* through scholarly, educational, programmatic, *community, and policy initiatives*” (AACS 2015, emphases added). Similarly, this association’s *Journal of Applied Social Science* states,

Specifically, we encourage submission of manuscripts that, in a concrete way, *apply critical social science or critically reflect* on the application of social science. Authors must address how they either have *improved a social condition* or propose to do so, based on social science research. (AACS 2014, emphases added)

Admittedly, the AACS in the statement quoted above appears to combine public and policy sociology in its vision (“community, and policy initiatives”), and in its journal seems also in effect to include critical sociology (“critically reflect on the application of social science”). This contrasts with the view of Burawoy, who clearly distinguishes public sociology from policy sociology, which he seems to regard as “less progressive,” perhaps because it is impacted upon by contractual engagements with clients, including the government. For, as he argues,

The first step is to distinguish public sociology from policy sociology. Policy sociology is sociology in the service of a goal defined by a client. Policy sociology’s *raison d’être* is to provide solutions to problems that are presented to us, or to legitimate solutions that have already been reached. (Burawoy 2005a:9)

From a South African perspective, this exclusion of policy sociology from public sociology, and thus perhaps from “progressive” work, seems strange; for example, in the postapartheid period after 1994, a range of South African university academics were significantly involved in policy work of various sorts with the new African National Congress government, such as the drafting of the new (and globally respected) national constitution. Nonetheless, Burawoy (2005a) does make the interesting distinction, within his category of public sociology, between “traditional” and “organic” public sociology:

In the same genre of what I call *traditional public sociology* we can locate sociologists who write in the opinion pages of our national newspapers where they comment on matters of public importance . . . they do not generate much internal interaction, [they are] passive in that they do not constitute a movement or organization, and they are usually mainstream. (P. 7) (emphasis in original)

In contrast,

There is, however, another type of public sociology—*organic public sociology* in which the sociologist works in close connection with a visible, thick, active, local and often counter-public. The bulk of public sociology is indeed of an organic kind—sociologists working with a labor movement, neighborhood associations, communities of faith, immigrant rights groups, human rights organizations. Between the organic public sociologist and a public is a dialogue, a process of mutual education. (Burawoy 2005a:7–8) (emphasis in original)

While I endorse major components of these visions as quoted from both Burawoy and the AACS above, my query in relation to the “bigger picture” is the following: Are they focusing on

society/community in a broad way, or via a more theoretically understood “civil society,”<sup>11</sup> with reference to sociological *engagement* with nonacademics? It can be argued that the AACS takes the broad view, in that its mission statement seems implicitly to include industry and even government (local and national) among those for whom applied and clinical sociology should be of benefit; while Burawoy seems explicitly to narrow the field of beneficiaries to the general public (i.e., nonacademics) when he refers to traditional public sociology. One must also ask whether this general public excludes industry and government, both of which may nonetheless be included as clients with reference to his policy sociology category. And he narrows the field even further in relation to his category of organic public sociology, with reference, as noted, to a Gramscian concept of CS organizations that seems to exclude industry (thus excluding both large and small firms) and government (thus excluding provincial and local city administrative bodies).

The problem for me is all this ambiguity, especially in relation to what I have referred to as a quadruple helix. Surely if one is calling for sociological *engagement* with the *wider society*, which is the essence of what Burawoy and the AACS are envisioning, there needs to be clarity about whether one is including sociological engagement of U with I-G-CS (as the AACS seems to imply) or only with CS (as Burawoy specifies, particularly in relation to his concept of organic public sociology). However, it might be suggested that when Burawoy includes the idea of “double conversation” in his actual definition of public sociology (as quoted above), he is seeking also to bring in some elements of what I have referred to earlier as engagement incorporating a social-justice orientation.<sup>12</sup> And the AACS, in including in its mission statement (cited above) the requirement that sociological knowledge should strive for “beneficial social change,” is perhaps even more direct about this; the same is true of its *Journal of Applied Social Science*, which seeks articles that present social research practices that “have improved a social condition or propose to do so” (as cited above).

In my view, this appears to be confusing for another reason. Some of these approaches perhaps implicitly assume that sociological engagement with industry is generally lacking in a social-justice orientation. Yet in one example used for one of the annual *Social Responsive Reports* prepared by the UCT (2006), our University Social Responsiveness Committee unanimously agreed that the work of an economics professor who had been involved in policy research for the South African automobile industry in association with an allied trade union organization (the National Union of Metalworkers of South Africa, perhaps the leading socialist trade union in the country), on how to enhance this industry’s productivity to increase automobile exports to the rest of Africa, exemplified “social responsiveness for the public good” (or perhaps even “social justice-centered engaged scholarship,” at least in terms of the motivation of this academic staff member). So clearly, U-I engaged scholarship relations between university academics and capitalist industry may embody social-justice components in specific contexts at certain points in time.

In contrast, one cannot assume that organic public sociology is always social justice-centered. One example from my own context serves to demonstrate this. In South Africa currently there has been a strong move by some white community civic organizations to create “gated communities” for themselves, whereby their historically white suburban areas are fenced in and guarded at specific entry points by private security firms to “keep out criminals,” as they often put it (while a major reason is actually to retain the neighborhood as primarily white). Some social scientists with research skills have been assisting such white communities to conduct social surveys using good sampling and questionnaire techniques, to impress the local municipal government bodies with well-written “social attitude survey reports” so as to obtain permission for the gating of sections of a municipality.

One cannot therefore assume that organic public sociology, as defined by Burawoy (including the case of “sociologists working with neighborhood associations”), is always social justice-centered. In other words, there seems nothing intrinsically “progressive” about U-CS relations.

## Conclusion: On Social Justice-centered Engaged Scholarship

The conclusion to be drawn from the above, I maintain, is that the idea of the quadruple helix, as displayed in Figure 2, tells us nothing clearly about the orientation of the U-I-G-CS relations shown in that figure toward social justice or otherwise. Or, put another way, unless one explicitly spells out the “political orientation” in one’s definition of public sociology or applied and clinical sociology or sociological practice—something that it is difficult to do ethically while respecting important issues of academic freedom—essentially all talk of U-CS relations still begs the question of what type of politics informs these relationships (and the same is true for U-I or U-G relationships).

It seems to me that in taking account of the bigger picture, specifically (1) the growing institutionalization globally of the university third mission, hopefully around a broader idea of socio-economic-cultural development; and (2) the growth of university relations in terms of not only a triple helix but also a quadruple helix of U-I-G-CS relations, it is more fruitful to locate the concepts of public sociology and applied and clinical sociology (and sociological practice) within a broader concept of “engaged scholarship.” The latter term can apply not only to sociology but to all university disciplines and fields, including physics, mathematics, and fine art. In this regard, the UCT Social Responsiveness Committee in 2012 obtained Senate approval for a revised “social responsiveness” policy for academics with reference to the concept of engaged scholarship,<sup>13</sup> which draws on the valuable MSU definition of “scholarship”:

We believe that the essence of scholarship is the thoughtful creation, interpretation, communication, or use of knowledge that is based in the ideas of the disciplines, professions, and interdisciplinary fields. What qualifies an activity as “scholarship” is that it be deeply informed by accumulating knowledge in some field, that the knowledge is skillfully interpreted and deployed, and that the activity is carried out with intelligent openness to new information, debate, and criticism. (MSU 1994:214, quoted in Cooper 2010:29; see also MSU 1993:2; now incorporated into the UCT Social Responsiveness Policy Framework, UCT 2012:2)

With this definition of scholarship as a basis, there follows the current UCT concept of engaged scholarship, directly linked to a university third mission of responsiveness to the needs of societal development:

ES [engaged scholarship] as a form of SR [Social Responsiveness] refers to the utilisation of an academic’s scholarly and/or professional expertise, with an *intentional public purpose or benefit* [which] demonstrates engagement with *external (non-academic) constituencies*. It can help to generate new knowledge, promote knowledge integration, the application of knowledge, or the dissemination of knowledge. (UCT 2012:2, emphases in original)

It can be observed here that the inclusion of “intentional public purpose or benefit” begins to veer toward an idea of what I have termed social justice-centered engaged scholarship but leaves it open to diverse interpretations (including those with a neoliberal or even conservative orientation). Moreover, such a broadly defined concept of engaged scholarship provides ideas of public or applied sociology (also public or applied anthropology, etc.), as *subsets* of the wider concept of engaged scholarship (for all academics) linked to the pursuit of a university third mission. But academics must be persuaded of the value of the idea of social justice in relation to their academic orientation and practices; a struggle thus continues with the work of institutionalizing an academic “movement” with such a vision for university-associated social justice-centered development. But this transformation work within universities involves considerably more than creating new concepts like organic public sociology and sociological practice and clinical sociology, or bigger-picture concepts like engaged scholarship, even though these are very important elements within this struggle to institutionalize social justice-centered scholarship.<sup>14</sup>

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## Notes

1. This academically oriented literature is now quite vast; see, for example, Burawoy's own Web site, "Public Sociologies. Books/Papers/Symposia/Critiques/Videos," assembled around this topic (Burawoy 2015).
2. Later in this article, in the context of the discussion of "social justice-centered engaged scholarship," I provide an extended quote indicating how Michigan State University (MSU 1994:214) defines "scholarship"; it suffices to summarize here that the definition incorporates the ideas, to which I hold, that "the essence of scholarship is the thoughtful creation, interpretation, communication, or use of knowledge . . . that it be deeply informed by accumulating knowledge in some field . . . [and that it be] carried out with intelligent openness to new information, debate, and criticism."
3. Here it should be noted that the title of my book, *The University in Development*, embodies a double meaning: (1) the university involved in the third mission of (socio-economic-cultural) "societal development" while simultaneously (2) having to "re-develop" or restructure its own internal structures (rooted in the first mission of teaching and the second mission of basic research), to achieve or enhance its third mission based on use-oriented research. It should be further noted that in this book, and in the discussion that follows in the present article, a central idea is the role of *a university* in relation to use-oriented research; therefore, when the latter is discussed with regard to public or allied or clinical sociology here, a similarly central role is assigned to the university in regard to its "engaged scholarship." Nonetheless, it is implicit throughout that the argument for engaged scholarship is equally pertinent when referring to "extra-university" *academically research-based* organizations in South Africa (and in other countries) such as national "science councils" (e.g., the Human Sciences Research Council in South Africa) or similar stand-alone research bodies (e.g., institutes such as the South African Institute of International Affairs).
4. After 2004, the technikons or polytechnics throughout South Africa were renamed "universities of technology." Cape Technikon and Peninsula Technikon also merged into a single institution, the Cape Peninsula University of Technology.
5. In fact, Burawoy (2005b:160), when discussing the Bonacich case, referred to her as an "example of the synergy of professional and public sociology"; whereas I believe it is better to view her as an "organic public sociologist" (this is the title of her article about her work, Bonacich 2005) who incorporates use-inspired basic research (UIBR) *as central to her sociological practice*.
6. Note that Burawoy (2005a:10) preferred the term "research programs" with reference to the theoretical work of professional sociology.
7. Etzkowitz (2002) used the terms "first/second academic revolutions" but I prefer first/second academic *transformations* to distinguish these moments of change from the first/second/third capitalist industrial *revolutions* that I describe in this article (see Table 3).
8. My stress, as already noted, is on broad socio-economic-cultural development with respect to the third mission, not only on the narrower economic development stressed often by Etzkowitz and others in relation to the "I" of the university-industry-government (U-I-G) triple helix. This broader view of development is particularly relevant for university-based social sciences, and even some of the natural sciences, in their relationship to civil society (CS) in the U-I-G-CS matrix of a quadruple helix (discussed below).
9. In my construction of Table 3, I have used the analysis by Dicken (2003) of a series of 50-year economic growth cycles (1780–1830–1880–1930–1980), known to economists as Kondratiev long waves, but I have joined up each pair of 50-year cycles, making three nodes with 100-year-long waves. I refer to each of these nodes or moments as first/second/third capitalist industrial revolutions. These revolutions are each crucially shaped by what I term different "capitalist forms of economic organisation,"

- namely, the small family firm, the national shareholding corporation, and the TNC-cum-networks, respectively. I have found Dicken's technological descriptions for each Kondratiev cycle to be valuable, and the most important technologies listed by him for each period have been included in Table 3.
10. This even applies to later key technologies such as aeronautical engineering in the 1920s, for, as Mowery et al. (2004:16) themselves have noted, "[e]xtensive experimental [parameter variation] testing was necessary because of the absence of a body of scientific knowledge that would permit a more direct determination of the optimum design of a propeller of an aircraft."
  11. Burawoy, in his references to "[the] labor movement, neighborhood associations, communities of faith . . .," is clearly using a Gramscian concept of "civil society," which is close to my own Gramscian definition of CS as focused on "civil society groupings such as labor and community organizations, non-governmental organizations (NGOs) etc." (Cooper 2011:7). It should also be noted that in using such a conception of CS, the implied hypothesis is an "analytical separation" of CS from I and G; that is, this is a working hypothesis allied to the idea of the quadruple helix.
  12. As noted in Figure 2, I have defined social justice-centered engagement as oriented toward "the transformation of socio-economic-cultural inequalities such that significantly enhanced opportunities are provided for previously excluded groups, particularly with reference to race, class and gender" (Cooper 2015:240).
  13. This University of Cape Town (UCT) policy has implications for how procedures for tenure and promotion are being applied, which importantly now consider such engaged scholarship as one significant criterion for academic advancement.
  14. For example, at the UCT recently, a major struggle has taken place to enhance recognition of engaged scholarship practices (in research or teaching) as significant criteria for promotion and tenure, alongside "traditional" criteria relating to peer-reviewed basic research and teaching internal to the university (see Cooper 2010; Favish, McMillan, and Ngcelwane 2012).

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