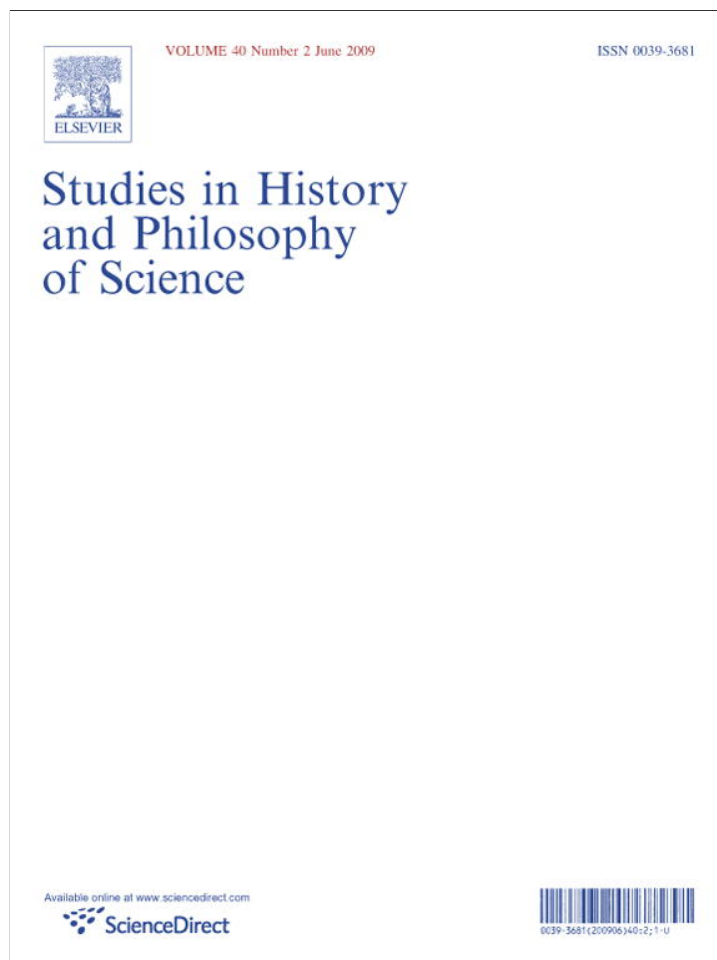




This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>



Contents lists available at ScienceDirect

Studies in History and Philosophy of Science

journal homepage: www.elsevier.com/locate/shpsa



The Left Vienna Circle, Part 2. The Left Vienna Circle, disciplinary history, and feminist philosophy of science

Sarah S. Richardson

Stanford University, 450 Serra Mall, Bldg. 240, Room 108, Stanford, CA 94305-2022, USA

ARTICLE INFO

Article history:

Received 28 May 2007

Received in revised form 1 August 2008

Keywords:

Vienna Circle

Logical empiricism

Political philosophy of science

Disciplinary history

Feminist philosophy of science

ABSTRACT

This paper analyzes the claim that the Left Vienna Circle (LVC) offers a theoretical and historical precedent for a politically engaged philosophy of science today. I describe the model for a political philosophy of science advanced by LVC historians. They offer this model as a moderate, properly philosophical approach to political philosophy of science that is rooted in the analytic tradition. This disciplinary-historical framing leads to weaknesses in LVC scholars' conception of the history of the LVC and its contemporary relevance. In this light, I examine the claim that there are productive enrichments to be gained from the engagement of feminist philosophy of science with the LVC, finding this claim ill-formulated. The case of LVC historiography and feminist philosophy of science presents a revealing study in the uses and ethics of disciplinary history, showing how feminist and other perspectives are misconceived and marginalized by forms of disciplinary self-narrativizing.

© 2009 Elsevier Ltd. All rights reserved.

When citing this paper, please use the full journal title *Studies in History and Philosophy of Science*

1. Introduction

A dominant theme of Left Vienna Circle scholarship is the development of theoretical and historical precedents for a politically engaged philosophy of science. This paper, the second in a two-part study of Left Vienna Circle (LVC) historiography, examines claims that the 'political' logical empiricism of the LVC provides resources for developing a political philosophy of science today. In particular, I look at the claim that there are productive enrichments to be gained from the engagement of feminist philosophy of science with the history of the LVC.

I focus on concerns about methodology, ethics, and practices of scholarly citation and engagement raised by the link between LVC historiography and a contemporary agenda for philosophy of science. I examine the discursive and disciplinary context in which political histories of the Vienna Circle are being generated and warmly received at this time. I argue that LVC historiography operates as a new disciplinary history reflecting anxieties within analytic philosophy of science about the proper aims, methods, and objects of analysis of the subdiscipline. Looking in particular at suggestions by LVC historians that the LVC offers a resource for

(or alternative to) feminist philosophy of science, I document how this historiography participates in the 'disciplining' of knowledge in analytic philosophy of science. Finally, I examine claims that there are links, points of common ground, or analogies between the LVC and feminist philosophy of science that might yield fruitful philosophical inquiry. I find the historical comparison between the two movements ill-formulated and insubstantial—an example of the limitations and hazards of narrating the history of philosophy as disciplinary history.

Attempts to connect the LVC with contemporary feminist philosophy of science should invite close critical examination. These comparisons are not merely casual gestures toward the contemporary relevance of the LVC. They have received much uptake and are becoming part of common disciplinary understanding of both the Vienna Circle and feminist philosophy of science. Yet these comparisons are rich with loose assertions and complex disciplinary tropes.

Don Howard's (2003, 2006) discussion of feminist philosophy of science exemplifies this complex of acknowledgment, appropriation, and marginalization of feminist work in LVC scholarship. Howard suggests that understanding the role of politics in the ori-

E-mail address: richardson@stanford.edu.

gins of analytic philosophy may provide philosophers with reasons to look more generously upon feminist philosophy of science—without feeling that their identity as philosophers is threatened. Taking the LVC seriously, he argues, ‘might make possible our welcoming our feminist colleagues into the mainstream’ (Howard, 2006, p. 12). The LVC example, he believes, will reassure philosophers that this can occur ‘without a threat of a loss of philosophical rigor upon which we philosophers of science have always prided ourselves’ (ibid., p. 13). Howard bemoans that politically engaged philosophy of science—as in the case of feminist philosophy—has been farmed out to other theoretical resources and disciplinary locations:

The tragedy lies in the fact that when the discipline of the philosophy of science disengaged itself from politics, there appeared a left-liberal political vacuum that was to be filled by other philosophical movements, much to the detriment of the left-liberal political cause, in my opinion . . . Then, especially after 1968, the banner was taken up by social and political philosophers newly energized by the post-1968 revival of critical theory and Marxist humanism, and politically active engaged students followed this trend. (Howard, 2003, pp. 26–27)

The eclectic influences in feminist philosophy of science, in Howard's view, represent an example of this problematic out-sourcing to non-analytic or non-philosophical approaches. Howard asserts that had the original LVC vision for a political philosophy of science been sustained, ‘criticism of such new perspectives as feminist philosophy of science and social constructivism’ would have been ‘more difficult, thanks to the clearer articulation of their intellectual links to science-friendly naturalisms of the Neurathian and Deweyan varieties, and of making more sophisticated the debates growing out of the critical analyses put forward by these new theorists’ (ibid., p. 27). Thomas Uebel (2005) and Alan Richardson (Richardson & Hardcastle, 2003; Richardson, 2004) make similar overtures, as have others.¹

2. LVC historiography as disciplinary history

In history of science, ‘disciplinary histories’ are traditionally histories of scientific disciplines written by practitioners of those disciplines outside of an independent academic specialty in the history of science. They are histories of the academic discipline as a sociohistorical institution, generally conceived as a continuous historical entity with certain mainstream methods, approaches, and questions. These histories tend to be internalist and progressivist, paced by the chronological emergence of exceptional figures and dominant research programs.²

Disciplinary histories often seek to identify the unique voice or contribution of the discipline among other fields and in the larger academy. Articulating or interrogating the overall contemporary agenda and scope of the discipline often motivates the writing of these histories. Disciplinary histories help to produce a common self-understanding of the field among professionals and condense

and simplify the narrative presented to the public, deans, and prospective students.

Disciplinary histories are rewritten by each generation in response to changes in the common experience. New disciplinary histories are often provoked by a crisis or change in experience that dates the old narrative. New disciplinary histories emerge against and from old ones. Change is shown to be, if at all possible, gradual, progressive, and rational, respectful to predecessors while assimilating new advances in the field. A sense of the forward-moving direction of the discipline is reinforced. Disciplinary histories are not disinterested and do not just describe history; they may themselves be an independent causal factor leading to new developments in the discipline.

The uses and conceptual practices of LVC history may be illuminated by considering its place in the rarified genre of disciplinary history. LVC scholars explicitly hope that their new histories, which run against the politically neutralist professional self-conception of many philosophers, will help generate a new vision for philosophy of science at a time when, they say, the subdiscipline seems to have lost its sense of public intellectual mission. In this light, LVC historiography has a remarkably forthright disciplinary agenda.

The idea that the history of the LVC is a starting point for building a new agenda for philosophy of science today takes a number of forms in LVC scholarship. The first is a ‘riches of history’ argument, that history can help us avoid the repetition of error and benefit from those who precede us. Howard's ‘Hansel and Gretel’ metaphor in his article, ‘Lost wanderers in the forest of knowledge’, reflects this view: ‘might we not be more like Hansel and Gretel, having found that the crumbs with which we marked the trail into the woods have all been gobbled up? I worry that we are seriously lost’ (Howard, 2006, p. 3). A. Richardson (1996, p. 5) similarly argues that the history of logical empiricism offers ‘lessons of value for current debates’ and may help to ‘maximize philosophical perspectives at a time when philosophy of science can little afford to luxuriate in close-mindedness’. He specifically suggests that historical engagement with the LVC is necessary ‘to clarify the sorts of political voice philosophy can properly have here and now’ (Richardson, 2004, p. 1). For those working to build a politically engaged philosophy of science, he writes, failure to look at early efforts such as the LVC would be ‘foolish’, demonstrating a disregard for ‘the honest efforts of our colleagues and teachers from the past’ (ibid., p. 11).

In a second respect, historical reflection is to be valued for its potentially therapeutic benefits to the discipline—psychoanalytic metaphors abound in History of Philosophy of Science (HOPOS) literature. History as a means of ‘overcoming’ old and unproductive disputes, divisions, and resistances is a common trope. A. Richardson (1996, p. 5) contends that understanding the intellectual history of logical empiricism ‘can free philosophers of science of a felt need for refutations of logical empiricism and allow them to rest content with rejections’. In a plenary talk at the 2004 HOPOS conference, A. Richardson argued that serious engagement with

¹ Some feminists have embraced the LVC narrative. Janet Kourany, for example, asserts that, ‘The program for a socially engaged science and philosophy of science envisioned by the Vienna Circle . . . was thwarted before it could develop . . . But now, in the late twentieth/early twenty-first century, scientists and philosophers and others have again been involved in constructing a philosophy of science that features science reforming society and being reformed by it, with philosophy expediting the reforms. This time, however, the individuals involved are *feminists*. Feminists are providing us with a new program for philosophy of science for the twenty-first century, a program for a socially responsible philosophy of science’ (Kourany, 2003, p. 3). Similarly, in *Siblings under the skin: Feminism, social justice and analytic philosophy*, Sharyn Clough references new histories of the Vienna Circle to support her claim that ‘the relation between the analytic tradition, feminism and social justice more generally is not as distant as was once thought’ (Clough, 2003, p. 8). In the same volume, and citing Uebel, A. Richardson, and Howard, Steve Gimbel asserts that analytic philosophy has a ‘historically entrenched commitment to social justice’ (Gimbel, 2003, p. 33) that has been ‘hidden or denied’ (ibid., p. 32). Gimbel uses the narrative of the LVC to chastise (unnamed) feminists and others who ‘write off’ (ibid., p. 15) analytic philosophy as a resource for theories of science and social justice. Other feminist philosophers (Longino, 1997; Okruhlik, 2004) have been far more reserved about the prospects for historical parallels and philosophical insights in new histories of the LVC.

² The concept of ‘disciplinary history’ and my discussion of it is stimulated by the introduction and first chapter of Peter Novick's *That noble dream: The ‘objectivity question’ and the American historical profession* (1988), Reinhart Koselleck's *The practice of conceptual history: Timing history, spacing concepts* (2002), Herbert Butterfield's *The Whig interpretation of history* (1959 [1931]), and Thomas Kuhn's reflections on disciplinarity in *The structure of scientific revolutions* (Kuhn, 1996 [1962]).

the LVC's ideas is necessary 'at the end of the day' to 'attempt to heal some of the divisions of late analytic philosophy' (Richardson, 2004, p. 10). A. Richardson expressed hope that historical work on the left-progressive orientation of early logical empiricists would help contemporary philosophers 'find direction,' 'recover,' 'reinvigorate,' and 'reconnect': 'Immersion into the literature in scientific philosophy of the 1920s and 1930s may serve to refresh our flagging philosophical spirits and reinvigorate increasingly narrow specialisms' (ibid., p. 11).

Third, disciplinary self-reflection facilitated by the historical thesis of the LVC is figured as a means of building up disciplinary identity through tradition. On this view, the history of the LVC has a part to play in restoring pride and energy to the subdiscipline of philosophy of science. As Howard writes, 'we certainly have not had much fun lately' (Howard, 2003, pp. 76–77). He argues that philosophy of science has increasingly lost a clearly defined sense of its public intellectual role, a 'vacuum' filled, at a loss, by non-philosophers:

Outside of philosophy departments, the marginalization of the philosophy of science is made evident by the fact that when our colleagues in other departments ask themselves the kinds of questions about science currently at the forefront of interest, they turn, more and more, not to philosophers of science but to sociologists, historians, literary theorists, and faculty members specializing in such areas as gender studies and African American studies for the kinds of answers that they find relevant and illuminating. If a 'traditional' philosopher of science is invited to participate in such discussions, as often as not it is to represent a retrograde, 'positivist' conception of science, a point of view to be pitied or pilloried rather than seriously engaged as a significant alternative. (Ibid., pp. 75–76)

Howard holds up the LVC as an example of a time when philosophy of science had a strong 'cultural, social, and political mission' (ibid., p. 77). In his view, the disappearance of the Left Vienna Circle model of politically engaged analytic philosophy has blunted the discipline's development of a public intellectual role. Resuscitating the forgotten LVC may help build a new sense of identity that would permit the development of a stronger and more distinctive public voice for philosophy of science.

The questions of disciplinary identity, cohesiveness, and mission that frame LVC scholarship make clear that this work is more than just 'intellectual history' or 'history of philosophy.' It self-consciously participates in what A. Richardson (1996, p. 2) has called a 'battle for the hearts and minds' of contemporary philosophers of science. The rewriting and reinterpretation of the history of analytic philosophy—specifically, North American analytic philosophy of science—to include a political dimension to its origin story is a foothold in a project to advance a particular new vision for philosophy of science.

This vision is not merely implied, but actively advanced and articulated by LVC scholars. The 'Left Vienna Circle' model for a politically engaged philosophy of science revives and reinterprets the work of Vienna Circle members Otto Neurath and Philipp Frank and the American pragmatist John Dewey.³ Though it finds diverse and uneven expression among LVC scholars, a sketch of the LVC model emerges from a survey of the scholarship. LVC historians draw centrally on two elements of Vienna Circle 'political philosophy of science.' First, they admire the LVC's emphasis on the role of science

and technology in social progress. For instance, A. Richardson argues that the LVC model might revive 'the whole question of how and to what extent and in what ways science is a motor of social progress,' which 'has disappeared almost entirely from the purview of philosophy of science' (Richardson, 2004, p. 10). Second, LVC scholars elevate the LVC's defense of empiricism in the broad sense, as an emancipatory form of knowing that people can use to improve their conditions of life. Neurath's advocacy of the 'empiricalization of every life,' A. Richardson writes, 'retains an attraction' today (ibid., p. 11).

LVC scholars see several virtues in a Neurath-Frank-Dewey model of 'political philosophy of science.' First, they suggest that this model is appropriate to the current political climate. A. Richardson (2004) cites the increase of religious discourse in politics and the jingoist political propaganda of President Bush's War on Terror in building his case for an LVC-inspired political philosophy of science. 'The degradation of the official public discourse of the great Enlightenment experiment of the USA is almost too upsetting to speak of,' he writes (ibid., p. 1). The LVC saw empiricism as a critical and pro-active model of citizenship and an important guard against religious and metaphysical social forces. In the face of the rise of conservative, corporate, and nationalistic forces, LVC scholars advocate this Enlightenment vision of rational public discourse and rational political actors and subjects.

Second, LVC scholars suggest that the LVC model prescribes a political engagement that is uniquely moderate and middle ground. Philosophers of science have tended to look askance at social constructivist theories of science that seem to relativize science to social context. Howard argues that the LVC model offers a '*via media* that is lost in the polarized contemporary debate' (Howard, 2003, p. 79 n. 3), a model which 'provides a robustly empiricist, nonrelativist understanding of the role of social factors in theory choice' (ibid., n. 1). Uebel has pressed a similar view. In 'Logical empiricism and the sociology of knowledge,' for example, he contrasts the 'cheerful antirealist relativism' of sociologists Barnes and Bloor with the LVC's political philosophy of science (Uebel, 1998, p. S148). He argues that the LVC presents a model of a position 'the very space of which is often denied' in contemporary interdisciplinary disputes around politics and scientific knowledge (ibid., p. S149).⁴

Third, LVC scholars pose the Neurath-Frank-Dewey model as a political philosophy of science that is *properly philosophical*, retaining a distinctive role for the philosopher of science apart from that of the sociologist, politically critical scientist, or cultural critic. A. Richardson (2004, p. 8), for instance, has remarked that the 'hopeful modernist reliance on science and technology ... everywhere in evidence' in the work of the early logical empiricists should be the protectorate of philosophy of science today. While it may 'seem naïve' to contemporary audiences, this approach spells 'critical engagement' where others recourse to 'cynical theorizing' (ibid.). Early logical empiricists, it is further suggested, had a better view of the proper relationship between philosophy and science (e.g. Giere, 1994). The LVC, like the Vienna Circle more generally, emphasized the autonomy and self-governance of science. On this model of the relationship of philosophy of science to science, the role of the philosopher is to support science so that it remains free of bias, abuse, or contamination by the ideologue and is afforded the greatest range of freedom to act and advance unhindered. Exemplary, I think, is Uebel's (2003, p. 163) admiring description

³ Because of the present focus on LVC historiography, I do not treat Dewey in this study. A leading representative of American pragmatist philosophy, not a logical empiricist (nor a member of the Vienna Circle), Dewey's work requires a different set of interpretive tools and contextual backdrop. In contrast to early logical empiricism, there also exists substantial extant literature on the relationship of Dewey's thought to present-day feminist epistemology and philosophy of science.

⁴ A. Richardson, Howard, and Uebel have not made explicit precisely how the LVC model resolves the question of how to take account of social context without relativism. Howard (2003, p. 78 n. 1) has characterized this 'middle ground' as a 'holistic, underdeterminationist variety of conventionalism' which permits that politics may play a role in theory choice but also holds to some form of naturalist realism.

of Frank's conception of 'proud positivism', in which scientists operate as a class of resisters to forms of social control that would subvert empirical ways of knowing. For the proud positivist, as Frank wrote in 1951, 'where science has no answer no one else has any answers either. One has to wait until a scientific solution is reached' (quoted in Uebel, 2003, pp. 162–163). 'Proud positivism' nicely captures the kind of role for philosophy of science envisioned by the Neurath–Frank–Dewey model. As opposed to containing the relevance of science to the laboratory or smothering the scientist with methodological prescriptions, the philosopher of science should work to support the broadest possible role for science and scientific ways of thinking in society.

In summary, the LVC model for a politically engaged philosophy of science, in the variety of forms and degrees of development advocated by Howard, A. Richardson, Uebel, and others, focuses on the practice of science and the spreading of scientific ways of knowing as the form of political engagement most suited to philosophy of science. Science and technology represent politically transformative models of reasoned social discourse and offer the best hope for advancing the common lot of humanity. The aim of a political philosophy of science, in this view, ought to be to analyze how science may aid 'social progress' and to develop research agendas to encourage science in that direction. This model for a politically engaged philosophy of science is, like the historiography, framed in strong disciplinary terms. In the historians' locution on this subject, a consistently key issue is to find the *proper* voice for philosophy among others.

LVC historiography, then, is implicated in at least three projects. First, there is the historical thesis of an 'LVC' political philosophy of science, discussed in part one of this paper, previously published (Richardson, 2009). Second, there is the new disciplinary narrative of a lost tradition of politically engaged analytic philosophy of science to be reclaimed today by the heirs of logical empiricism. Finally, there is the contemporary philosophical agenda, a resuscitated Neurath–Frank–Dewey program for a politically engaged philosophy of science.

To find that this is disciplinary history with presentist interests is not to dismiss its contributions. One might say that the larger project of LVC historiography is to recover, with an eye to contemporary debates, the various ways that early analytic philosophers of science thought about the relationship between science and politics. Historical work on the LVC has indeed revealed a political dimension to the origins of analytic philosophy of science that challenges dominant understandings and, at least discursively, gains new ground in the field's internal dialogue about the viability of a politically engaged philosophy of science. Thus in one sense, LVC scholars are participating in the construction of a corrective 'counterhistory' of the discipline of analytic philosophy—a history not so much of the victors as the vanquished.

At the same time, LVC scholars bundle insights gleaned from their reinterpreted historical work with a nostalgic disciplinary narrative to advance a specific vision for contemporary philosophy of science. LVC scholars enter present-day disciplinary debates over the proper methods and objects of philosophy of science, offering the LVC as inspiration for a contending model for the future of the field. They use the call of intellectual lineage to prevail upon philosophers innovating politically engaged philosophy of science to root themselves properly in the traditions of analytic philosophy of science. They mobilize disciplinary history to position themselves as arbitrators of the properly philosophical and the properly analytical.

In this way, LVC historiography retains the insular and presentist quality of a history that is for and by philosophers of a particular disciplinary self-understanding. The 'discipline' and 'disciplinarity' attain a reified status in this work. As shaping concepts of the historiography, they go unquestioned and unnoticed. As a result, LVC

scholarship carries forward a narrow framing of 'philosophy of science' and its proper influences and interlocutors.

While at once presenting a counterhistory to dominant professional self-understandings of the discipline of philosophy, LVC historiography reinscribes and reproduces a number of the conventions of disciplinary history. In service to changing attitudes toward politically engaged work in philosophy of science, LVC scholarship updates histories of analytic philosophy of science to include early interest in the social and political dimensions of science and offers a modest, 'properly philosophical' vision of how this putatively 'lost' tradition might be reinvigorated today. With this new disciplinary narrative in place, philosophers of science can superficially assert a lineage of socially engaged work in philosophy of science since its inception. I believe that this helps to explain why, within mainstream philosophy, the story of the 'Left Vienna Circle' has received a largely genial reception and the integration of the political context of early logical empiricism into dominant disciplinary narratives has been rapid, uncritical, and uncontroversial.

3. Historical comparisons and other hazards

Is the LVC similar to feminist philosophy of science today? Does the LVC offer a model for contemporary political philosophy of science? Both of these questions presume, first, that an LVC existed, and that it indeed developed (or sought to develop) a political philosophy of science. Unfortunately, in their eagerness to reconstruct a countertradition of politically engaged analytic philosophy of science, contemporary scholars have shoehorned the LVC and feminist philosophy of science into a disciplinary narrative and important differences in the context and content of the LVC's work and contemporary feminist philosophy of science have been swept aside. This carelessness is revealing, as it makes stark the narrow boundaries within which many philosophers of science are comfortable to narrativize the history of their area of intellectual inquiry. The result is conceptual flaws in LVC historiography and weaknesses in LVC scholars' contemporary model for a political philosophy of science.

Context helps us appreciate both the specificity and highly contingent nature of the political engagement of the early logical empiricists. Among the conclusions of my analysis of the historical thesis of a 'Left Vienna Circle' in part one of this paper (Richardson, 2009) is, first, that although some logical empiricists strongly believed in the social value of science, a philosophy of the relationship between science, values, and social context was not among the projects—or achievements—of the early logical empiricists. In addition, we have only the spottiest outline of the 'LVC' as a philosophical movement—perhaps a handful of scholars producing intermittent commentary on the subject of science and politics between the 1920s and 1940s. Finally, the aspirations of the Vienna Circle to ally with liberatory social movements of their day reflect the very particular intellectual atmosphere of technosocialist Red Vienna and were so fleeting as to vanish upon transfer of logical empiricism to North America. All of this underscores the slippery nature of LVC historians' equation of the efforts of members of the 'left wing' of the Vienna Circle with 'analytic philosophy of science', and the further assertion that the LVC's approach to politically engaged philosophy of science is more 'rigorous' and 'properly philosophical' than other efforts by virtue of its association with the 'scientific philosophy' of the Vienna Circle.

It is necessary to examine the ways in which the recent reconstruction of the LVC as a coherent sociohistorical body, and the political ambitions of Neurath, Carnap, and others as a disciplinary agenda for a political philosophy of science, reflect today's conceptions of both disciplinarity and political philosophy of science.

When LVC historians pose the LVC as an early movement for a politically engaged philosophy of science, they artificially constitute a pre-disciplinary knowledge community in the terms of contemporary disciplinary strictures. This amplifies and overstates the LVC philosophical agenda, making it seem both more programmatic and coherent than it was.

In contrast, feminist philosophy of science is part of a large international body of scholarship (and political movement) now thirty-five years old, and takes the role of values in science and the relationship of science to social justice as its primary area of study. There exist several excellent introductions to the history of feminist thought and academic feminism, and to feminist epistemology and philosophy of science specifically (Wylie et al., 1990; Boxer, 1998; Tong, 1998; Potter, 2006; Rooney, 2006); these introductions, of course, cannot substitute for sustained immersion in the literature. For the present purposes, I provide a thumbnail sketch of the history of the field of feminist epistemology and philosophy of science, its disciplinary location, and its central insights.

Feminist epistemology and philosophy of science (FEPS) emerged in the mid-1980s, a result of the convergence of three trends in academic feminism. First, the 1980s saw the tremendous institutional growth of feminist scholarship in the academy, indexed by the emergence of women's and gender studies departments, conferences, journals, and professional societies, and increasing recognition, reward, and integration of feminist scholarship in the mainstream of the humanities and social science disciplines. Second, attempts to canonize feminist theory and methodology and fights for academic legitimacy led to the blossoming of 'feminist theory,' a high-prestige and exciting field that attracted more scholars trained as philosophers into academic feminism. Finally, the accumulation of a prolific decade of feminist work on science, raising novel and challenging questions about models of science and reason in mainstream analytic philosophy of science and epistemology, led feminists trained as philosophers to perceive valuable philosophical work (and work that would be legible to colleagues in philosophy) to be done in this area.

Since its inception, FEPS has operated in the multiple borderlands of feminist theory, feminist science studies, and social studies of science, and at the periphery of analytic epistemology and philosophy of science. In these unstable and unauthorized transdisciplinary locations, FEPS has been supported primarily by the institutions and scholarly networks of academic feminism. As a consequence, its work has been at least as engaged with debates and developments in the larger field of academic feminism, and in feminist science studies, as in either philosophy or social studies of science. In feminist theory, FEPS has helped to ground epistemologies for feminist research and scholarship and develop general feminist critiques of positivist epistemology and philosophy of science. In feminist science studies, feminist philosophers of science have contributed substantial case study work examining gender bias in particular scientific fields. In philosophy of science, feminists have worked to reconstruct philosophical models of epistemology and science to take into account the observations and critiques of feminist scholarship on the sciences. FEPS has also often carried the additional burden of translating, speaking for, or defending academic feminism for non-feminist philosophers, in a discipline that among the humanities remains the least welcoming

to feminist work and the least inclusive of women and minorities (American Philosophical Association, 1995, 1996; Alcoff, 2003; Kukla, 2004; Brogaard, 2007; Haslanger, 2008).⁵

Feminist science studies takes up three general problems: first, improving the status of women in the science professions; second, critiquing sexist science; and, third, building both practical and theoretical models for better science. Feminist philosophers have contributed to all three areas. It is the third, however, that is most often associated with 'feminist philosophy of science.' This involves both a critique of positivist models of science and a constructive project to devise normative epistemological and methodological principles for a more just and inclusive practice of science.

FEPS may be seen as offering general insights about science that result from starting analysis of science from a feminist standpoint or analytical framework. This starting framework includes an analysis of gender oppression and systematic attention to the role of gender in constituting modern science, including scientific language, practices, institutions, models, and research priorities. Over the past thirty years, this strain of FEPS scholarship has yielded searching and original normative and descriptive work on science, values, and politics. The outcome is a set of starting questions and core insights, none of which are exclusive to questions of gender, nor to feminist analysis of science, and which do not constitute a general theory of science. While some feminist philosophers have developed frameworks for analyzing science that they recommend to philosophers of science (such as Helen Longino's [1990, 2002] critical contextual empiricism), FEPS cannot be said to be a programmatic movement within philosophy advancing a 'political philosophy of science' over other approaches.

Without obscuring differences in emphasis, approach, and aims within the field of feminist philosophy of science, it is possible to extract some of its core insights. Extensive case study literature on the role of gender ideology in scientific models, practices, and descriptive language forms the bedrock material of feminist philosophy of science. These case studies demonstrate that values (such as gender beliefs) play a role in the cognitive work of science, supporting scientific reasoning at many levels. Case studies also reveal scientific reasoning to be a social practice, inflected by its social context. Analysis of these case studies led feminist philosophers of science to emphasize that science is best understood as a set of local and plural knowledge practices, rather than an abstract method, universal language, or codified practice. A consequence of this understanding of science is that descriptive philosophy of science must appreciate the particular context of an area of science and engage with sociological, ethnographic, and historical analysis of a field of science.

This is also true for normative projects in philosophy of science. A traditional task of philosophers of science is the working out and elaboration of epistemological and methodological ideals for science. Seeking a more inclusive and accountable science, feminists have been especially interested in normative work—traditional as well as nontraditional. For example, they have pressed the need for greater representation of women and minorities in science, invoking expanded ideals of epistemic diversity and epistemic equality. FEPS joins naturalizing trends in philosophy of science in acknowledging that these normative projects must be responsive to and rooted in

⁵ Women and minorities have been largely excluded from professional philosophy. Over the past several decades, women have achieved near-parity in other areas of the academy more accommodating to women and minorities and to scholarship in feminist and ethnic studies. During this period, many women and minorities trained in philosophy migrated to these other disciplines. The personal essays in *Singing in the fire: Stories of women in philosophy* (Alcoff, 2003) document the substantial transformation in women's opportunities in philosophy over the past thirty years but also underscore the continuing obstacles for women and minorities in philosophy. For instance, the American Philosophical Association remains the only professional academic association that does not offer childcare at its meetings (Kukla, 2004). In 1996, of 369 American Ph.D.s granted in philosophy, only 108 were women, 12 Asian, 6 Black, 10 Hispanic, and 0 Native American (American Philosophical Association, 1995, 1996). At nearly every level, the representation of women and minorities in philosophy is worse than any other humanities discipline and is similar to the representation of women and minorities in physics (Brogaard, 2007). Haslanger (2008) presents data showing that publications by women and feminists are significantly underrepresented in the most prestigious journals of the field.

our best empirical understanding of how science works—and of how science and society interrelate. Since practitioners of FEPS have close ties to feminist activism, they are also more likely to seek normative approaches that engage present-day scientific practice in realistic, concrete ways. Conditioning feminist approaches to science, then, is an appreciation that philosophical ideals for science cannot alone transform science, that the ideal and actual practice of science rarely meet, and that the social practices of science often cannot change without commensurate changes in the society in which it is embedded. The tools of epistemology, therefore, must be supplemented by an account of power and ideology and a theory of social change. Since the conventional terms of epistemology are limited for these ends, feminist philosophical analysis of science mandates intra- and interdisciplinary engagements between philosophy of science and ethical, moral, social, and political philosophy, continental philosophy, rhetoric, and cultural theory in ways that analytic philosophy of science generally does not (see, for example, Longino & Hammonds, 1990, pp. 174–176).

For all of these reasons, a comparison between Carnap's, Neurath's, Frank's, and Hahn's thoughts on science and politics and feminist theories of social change, science, and ideology, is also a comparison of highly different contexts. The point is not merely that they are different in many ways, which surely LVC scholars recognize, but that the comparison is a tortured, ahistorical, and harmful one. To analogize the traces of political interest in the Vienna Circle to this substantial stream of present-day feminist scholarship betrays an exceptionally indelicate appreciation of the context and intellectual history of both. In this way, the case of feminist philosophy of science and LVC historiography presents a revealing study of the uses and ethics of disciplinary history and shows how feminist and other perspectives are systematically misconceived and marginalized by forms of disciplinary self-narrativizing.

The characterization of FEPS as an aspirant to the politically engaged philosophy of science (putatively) envisioned by the LVC forces a transdisciplinary knowledge formation into a wholly inadequate framework and decontextualizes, distorts, and mislocates the field. FEPS, feminist science studies, and academic feminism more generally are strongly interdisciplinary (often transdisciplinary), both in institutional location and in theory and methodology (Zanish-Belcher, 1998).⁶ Feminist academic knowledge production also has a different shape and horizon than disciplinary scholarship in philosophy. Over the last several decades, feminist philosophers have allied with scientists, historians and sociologists of science, and activists to bring the tools of philosophy to bear on understanding—and changing—the complex and troubled relationship between science and gender. Feminist scholars often train their pens on specific contemporary questions and debates without regard to the prestige or priority of those questions in their discipline. While FEPS is rooted in the methods and questions of epistemology and philosophy of science, it has not been *primarily* interested and invested in developing a 'political philosophy of science', but rather in advancing feminist knowledge. In striving for reflective knowledge practices, feminist scholarship is also characterized by a questioning of its own authority and the authority of disciplines and of academia generally. Disciplinary concerns about shoring up the proper role of the philosopher or cohering the sense of pride of the discipline are foreign to feminist scholarship and in many cases inimical to it. For

these reasons, disciplinary histories that situate the LVC as the predecessor to FEPS or analogize the two projects distinctively fail to acknowledge the streams, circulations, and sources of FEPS and block engagement with many central insights of the field.

This has consequences for LVC scholars' view of the contemporary relevance of their new histories. While LVC scholars appear to acknowledge the relevance of FEPS to their discussion of contemporary models for politically engaged philosophy of science, FEPS primarily figures in the LVC literature as the flawed or floundering effort that has reinvented the wheel and mistakenly strayed too far from its analytic roots. Thus the assertions that ties to early logical empiricism will ground a more 'middle ground', 'properly philosophical', 'sophisticated', or 'clear' political philosophy of science than developed so far. As a result, and perhaps unwittingly, LVC scholars' new disciplinary narrative does not advance a vision of political philosophy of science that invites and engages insights of feminist philosophy of science but reiterates and reinscribes the view of feminist work as marginal, illegible, and unrigorous held by much of mainstream analytic philosophy of science.

Properly conceived, FEPS *should* be a resource for developing a more politically engaged contemporary philosophy of science. Yet because LVC history carries forward a rigid and historically circumscribed professional conception of the discipline, in the LVC historians' locution on the possibility of a politically engaged philosophy of science there is a general lack of awareness of the shape of contemporary intellectual inquiry on this very topic. In LVC historiography, 'philosophy' is conceived in a narrow disciplinary sense, as what professional philosophers do and what is published in mainstream philosophy journals, and there is a failure to comprehend, engage with, and take seriously the past thirty-five years of theoretical work in feminist studies that bears on the questions they raise about public intellectual and politically engaged scholarship in the contemporary academy.

Therefore, while FEPS should clearly be a resource in any effort to develop a political philosophy of science today, efforts to compare or link feminist philosophy of science with the LVC are ill-formulated. Additionally, there is insubstantial evidence of enriching insights from the LVC that would make such a comparison anything more than an ahistorical exercise.

4. Models for contemporary politically engaged scholarship

What of the historians' model for an LVC-inspired political philosophy of science today? More a set of shared doctrines and meta-philosophies than a developed prescription for philosophy of science, it is difficult to evaluate this model in detail. However, in light of the foregoing description of the insights and practices of feminist epistemology and philosophy of science in recent decades, a few observations are appropriate. The LVC historians' model advocates revival of the Enlightenment vision of the early logical empiricists (and some American pragmatists) of science as the principal means of social progress and a model for rational political discourse. This model emphasizes the institutional autonomy of science and the spreading of scientific ways of thinking as a brace against anti-democratic forces. The model urges philosophers of science to defend and advocate 'science' and scientific ways of thinking in public life. LVC historians offer this model as a

⁶ Bibliographic sources and publishing patterns in FEPS reveal that this highly interdisciplinary field is best located as a subfield of feminist science studies and academic feminism more generally. Most FEPS scholarship proceeds outside of the traditional publications and circles of philosophy. Tania Zanish-Belcher's (1998) study of the role of journals in feminist scholarship on women and science, which surveyed feminist journals as well as those in science studies and history of science, demonstrates that FEPS scholarship has been almost exclusively represented in feminist journals. In citational studies, the feminist journals *Hypatia* and *Signs* lead all others in publications on gender and science. *Isis* scores third, but this literature is principally on the history of women in science (ibid., p. 204). Zanish-Belcher concludes that feminist science studies 'has had to create its own forum where it may be heard and published more frequently' and that 'traditional mainstream journals . . . have neglected the topic of women and feminism in science' (ibid., p. 212).

moderate vision of a political philosophy of science with precedent in the analytic philosophy of science tradition.

The distinction and merit of this model is its reminder that much of the time science has been a positive force and that there was an era when science gave emancipatory movements great hope and aid. The model is inadequate to today's best descriptive and normative accounts of science and politics, however, in two principal ways.

First, it betrays its roots in a limited political analysis. The view that empiricism, or scientific discourse more broadly, presents a model of ideally rational discourse advances a flawed liberal account of political engagement and conveys a narrow vision of the political domain (e.g. Young, 1990). Very briefly, we might see LVC politics as located in an Old Left worldview, in which class structure is the primary analytic and socialist economic planning using the empirical strategies of the sciences a suitable answer. The Old Left model, however, failed to recognize how class oppressions are distributed differentially across race and gender and how nationalist, racist, sexist, and heterosexist ideologies work to maintain systems of social control. The emancipatory struggles of today are located in global movements of third world peoples, people of color, women, and displaced workers. Class is an important but insufficient category to understand why the great majority of the world's poorest people are women and people of color. Race and gender are not the same as class. They require a different analytic, one that incorporates theories of identity, embodiment, ideology, and the cultural construction of difference, as well as biology, cognitive science, social psychology, and rhetoric. To the extent that the LVC's vision is rooted in a political analysis, then, it is of limited value today, where our conception of oppression is quite different, and so too are the solutions considered appropriate.

A complex and realistic account of the relationship between science and society, as well as an explicit theory of power, ideology, and social change, must inform philosophical work on science, society, and values. This is not in evidence in the LVC model. In part because of the strong disciplinary-historical framing of the questions asked by LVC scholars, LVC scholarship has skipped right over the insights of feminist, ethnic, and other such studies regarding analysis of oppression, society, and ideology, how emancipatory knowledge projects in the academy might be structured, and the ethics, epistemology, and methodology of this kind of work. Thus, despite their welcome intent to play a role in moving philosophy of science toward a more politically engaged practice, LVC scholars will need to add this intensive body of work from the past quarter-century to their sense of the historical narrative and relevant sources of political philosophy of science in order to responsibly enter these debates.

Second, the LVC model advances an idealized conception of scientific epistemology. Whereas the early logical empiricists expressed generalizations about the power of science to transform and democratize society, today we benefit from a great deal more, and much more detailed, knowledge about the empirical practice and institution of science than was available to Neurath and Carnap in the 1920s and 1930s. There are several implications of this. The unity of science that grounded Neurath and Carnap's general conception of science has dissolved into various versions of a 'disunity of science' thesis. In light of our empirical understanding of science as a context-dependent social practice, it is archaic and naïve to see 'science' as a worldview that individuals or groups may simply adopt and act on without attending to the social conditions of public discourse itself. We also know from our best history of science that science—even when broadly accepted as 'good science'—can take the side of the oppressor, that criticism of and resistance to science is sometimes necessary, and that the scientific point of view can be a partial and inadequate one. Ethically and empirically, it is no longer possible to think of science as only a liberatory force or ideal way of knowing.

I hope that LVC scholars will shake off the boundaries that they have artificially set for themselves in searching for philosophical precedents and theoretical resources to build a politically engaged philosophy of science today. The peculiar disciplinary framing of LVC historiography has distorted its picture of contemporary academia and weakened the authority of its work. To the extent that it is invested in bringing the insights of history of philosophy to bear on contemporary projects for a politically engaged philosophy, LVC scholarship must appropriately figure the relevant empirical and theoretical work in fields such as feminist and ethnic studies if it is to avoid the reentrenching of old disciplinary borders, insularities, and narratives that have been hostile to these projects. Of course, this will require expanding the sensitivity to context and nuance that it has applied to the early logical empiricists of the 1920s and 1930s to these various efforts toward engaged philosophy of science in the decades since then. HOPOS scholars must also examine their uses and practices of disciplinary history and incorporate more reflexive and critical models. Only then will it be possible to consider the kind of politically engaged philosophy of science that is appropriate for our time, and what, if any, insights may be gained from the LVC.

Acknowledgements

I thank Lanier Anderson, Michael Friedman, Helen Longino, Paula Moya, and members of the Bay Area Feminism and Philosophy Workshop for their assistance, enthusiasm, and constructive conversation during the research and writing of this two-part paper and the two anonymous readers for their careful reading and insightful comments. Don Howard, Alan Richardson, and Thomas Uebel kindly shared their unpublished work with me. A Mary Anne Bours Nimmo Fellowship at Stanford University helped to support the final stages of this article's preparation.

References

- Alcoff, L. (2003). *Singing in the fire: Stories of women in philosophy*. Lanham, MD: Rowman & Littlefield.
- American Philosophical Association. (1995). Selected demographic information on philosophy Ph.D.'s. *Philosophy as a profession: Data on the profession*. <http://www.apaonline.org/profession/selected.aspx>. (Accessed 15 January 2004)
- American Philosophical Association. (1996). Ph.D.'s in philosophy by gender/race/ethnicity. *Philosophy as a profession: Data on the profession*. <http://www.apaonline.org/profession/phdgre.aspx>. (Accessed 24 January 2004)
- Boxer, M. J. (1998). *When women ask the questions: Creating Women's Studies in America*. Baltimore: Johns Hopkins University Press.
- Brogaard, B. (2007). APA report: The status of women in philosophy. In *Lemmings: A blog devoted to issues in language, epistemology, metaphysics, and mind* (23 April). <http://lemmingsblog.blogspot.com/2007/04/apa-report-status-of-women-in.html>. (Accessed 15 May 2007)
- Butterfield, H. (1959). *The Whig interpretation of history*. New York: Norton. (First published 1931)
- Clough, S. (Ed.). (2003). *Siblings under the skin: Feminism, social justice, and analytic philosophy*. Aurora, CO: Davies Group.
- Giere, R. N. (1994). Viewing science. *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 2, 3–16.
- Gimbel, S. (2003). Politics and the wissenschaftliche Weltanschauung: Neurath and Reichenbach on science and socialism. In S. Clough (Ed.), *Siblings under the skin: Feminism, social justice, and analytic philosophy* (pp. 13–36). Aurora, CO: Davies Group.
- Haslanger, S. (2008). Changing the ideology and culture of philosophy: Not by reason (alone). *Hypatia*, 23(2), 210–233.
- Howard, D. (2003). Two left turns make a right: On the curious political career of North American philosophy of science at midcentury. In G. L. Hardcastle, & A. W. Richardson (Eds.), *Logical empiricism in North America* (pp. 25–93). Minneapolis: University of Minnesota Press.
- Howard, D. (2006). Lost wanderers in the forest of knowledge: Some advice on how to think about the relation between discovery and justification. In J. Schickore, & F. Steinle (Eds.), *Revisiting discovery and justification: Historical and philosophical perspectives on the context distinction* (pp. 3–22). Dordrecht: Springer.
- Koselleck, R. (2002). *The practice of conceptual history: Timing history, spacing concepts* (T. S. Presner, Trans.). Stanford: Stanford University Press.
- Kourany, J. (2003). A philosophy of science for the twenty-first century. *Philosophy of Science*, 70, 1–14.

- Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd ed.). Chicago: University of Chicago Press. (First published 1962)
- Kukla, R. (2004). Childcare at the APA [message to Society for Women in Philosophy electronic listserve]. <http://listserv.uh.edu/archives/swip-l.html>. 9 December. (Accessed 9 December 2004)
- Longino, H. E. (1990). *Science as social knowledge: Values and objectivity in scientific inquiry*. Princeton: Princeton University Press.
- Longino, H. E. (1997). Comments on science and social responsibility: A role for philosophy of science? *Philosophy of Science*, 64, S175–S179.
- Longino, H. E. (2002). *The fate of knowledge*. Princeton: Princeton University Press.
- Longino, H. E., & Hammonds, E. (1990). Conflicts and tensions in the feminist study of gender and science. In M. Hirsch, & E. F. Keller (Eds.), *Conflicts in feminism* (pp. 164–183). New York: Routledge.
- Novick, P. (1988). *That noble dream: The objectivity question and the American historical profession*. Cambridge: Cambridge University Press.
- Okruhlik, K. (2004). Logical empiricism, feminism, and Neurath's auxiliary motive. *Hypatia*, 19(1), 48–72.
- Potter, E. (2006). *Feminism and philosophy of science*. New York: Routledge.
- Richardson, A. W. (1996). Introduction: Origins of logical empiricism. In R. N. Giere, & A. W. Richardson (Eds.), *Origins of logical empiricism* (pp. 1–16). Minneapolis: University of Minnesota Press.
- Richardson, A. W. (2004). Philosophy as science; philosophers as scientists: Some remarks on taking scientific philosophy seriously. Unpublished plenary talk, 2004 conference of the International Society for the History of Philosophy of Science. (Text available from author)
- Richardson, S. S. (2009). The Left Vienna Circle, Part 1. Carnap, Neurath, and the Left Vienna Circle thesis. *Studies in History and Philosophy of Science*, 40, 14–24.
- Richardson, A. W., & Hardcastle, G. L. (2003). Introduction: Logical empiricism in North America. In G. L. Hardcastle, & A. W. Richardson (Eds.), *Logical empiricism in North America* (pp. vii–xxix). Minneapolis: University of Minnesota Press.
- Rooney, P. (2006). *Feminism and epistemology*. New York: Routledge.
- Tong, R. (1998). *Feminist thought: A more comprehensive introduction* (2nd ed.). Boulder, CO: Westview Press.
- Uebel, T. E. (1998). Logical empiricism and the sociology of knowledge: The case of Neurath and Frank. *Philosophy of Science*, 67S, S138–S150.
- Uebel, T. E. (2003). Philipp Frank's history of the Vienna Circle: A programmatic retrospective. In G. L. Hardcastle, & A. W. Richardson (Eds.), *Logical empiricism in North America* (pp. 149–169). Minneapolis: University of Minnesota Press.
- Uebel, T. E. (2005). Political philosophy of science in logical empiricism: The left Vienna Circle. *Studies in History and Philosophy of Science*, 36, 754–773.
- Wylie, A., Okruhlik, K., Morton, S., & Thielen-Wilson, L. (1990). Philosophical feminism: A bibliographic guide to critiques of science. *Resources for Feminist Research*, 19(2), 2–36.
- Young, I. M. (1990). *Justice and the politics of difference*. Princeton: Princeton University Press.
- Zanish-Belcher, T. (1998). Still unheard by the mainstream: Locating serial articles on women in science. In K. H. Gerhard (Ed.), *Women's Studies serials: A quarter-century of development*. New York: Haworth Press.