Conceptualizing Pennsylvania’s Industrializations, 1850-1950

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Editor’s Note: What follows is the revised text of an address delivered at the annual meeting of the Pennsylvania Historical Association on October 28, at Wilson College.

Thirty-odd years ago, like tens of thousands of other eighth graders, I sat in a classroom and endured a semester of Pennsylvania history, taught by our junior high head football coach. In senior high, we only got assistant coaches for history courses, as the head football coach had to concentrate on beating Beaver’s rivals in the ever-tough W.P.I.A.L.¹ Neither our old football league nor Pennsylvania history is the same these days. Many of the schools in that conference have disappeared into mergers while almost two generations of scholarship have dramatically transformed our understanding of the commonwealth’s past.

What I remember from that eighth grade course is minimal, I confess, but the image remains of two long trajectories: one, from Penn’s proprietorship to the early 19th century, in which history was chiefly past politics, and a second, from the middle 19th century into the vigorous 1950s, in which railroads, coal, oil, and steel and giants like Carnegie and Frick took center stage, overshadowing both faceless governors (except Gifford Pinchot) and puzzling efforts to reform the state’s constitution. Memory is tricky, though. Recently, in one of my flea market rambles, I picked up (for a quarter) an old Pennsylvania history text and found to my surprise that politics dominated its post-1850 chapters nearly as much as its earlier ones. It was just that for me at age 13, its review of industrialization was far more vivid and engrossing. This was surely because I lived spot in the middle of a built environment dominated by huge plants: Jones and Laughlin Steel, St. Joe Lead, Hussey Copper, Crucible Steel, Westinghouse circuit breaker, Babcock and Wilcox, Phoenix Glass, and U.S. Steel’s fabrication works at Ambridge, where my father worked in specialty engineering.

Context is crucial to perception’s necessary selectivity and to the construction of meaning. Both my geographical context and my father’s tales of contests with Bethlehem, Weirton, or Inland Steel disposed me toward taking industrialization as central to the
meaning of Pennsylvania and progress as the core metaphor for its modern history, the spine of a continuously evolving and improved anatomy, culminating in the world of the 1950s.

Such self-assured narratives of technical, organizational, and social progress in industrial Pennsylvania are with us no more. It is increasingly difficult even to conceive of a grand, linear account that runs from the early craftshop, charcoal iron and water-powered mill trades through the wild competitive eras in oil, coal, and railroad development to the durable profitability of leading corporations sustaining hundreds of thousands of stable, often union-wage jobs and scores of prosperous, factory- proud communities. Those histories may have minimized the bumps along Progress Road - the depressions, bankruptcies, bitter strikes, ethnic/racial antagonisms, and hazardous workplaces - but they seem almost quaint now for three other reasons. Most obviously, the substantive decay of Pennsylvania's manufacturing base since the 1960s dislocates their "onward and upward" rhetoric into variations on Peter Laslett's "world we have lost" metaphor. All but a few of the great plants that dominated the landscape of my teen years are now rusting hulks, as are most of those I encountered on arrival as an undergraduate in Philadelphia. Perhaps the progress theme can be revised by enlarging the spatial shed ("It's not happening here any longer, but elsewhere in the nation or the world") or by moving laterally to embrace the deployment of a service-centered, post-industrial economy, but this only reworks its basic teleology.

Two other problems are relevant, one empirical, the other more conceptual. Events in my lifetime have pressed Pennsylvanians to reassess the costs of industrial and technical gains. From Donora's killer smog in the forties to Three Mile Island, from the asbestosis deaths of thousands of shipbuilders and insulation workers to the discovery of toxic hazards at hundreds of abandoned factory sites, the cumulative downsides of the industrial era represent the human and economic counterpoints of once-celebrated achievements. Both aggregate decline and the recognition of unintended negative consequences seriously complicate fashioning any convincing portrait of progress, a point environmental historians have made effectively. More broadly, analysts of historical narrative from Hayden White to Joan Scott have increasingly critiqued familiar synthetic accounts of historical development for their unacknowledged assumptions about significance, their multiple silences and exclusions, and their encoded political commitments. The parallel explosion of research in social and cultural history, of "history from the bottom up," of monographs on long-ignored industrial centers and sectors, from Rockdale to Harrisburg, from styled
textiles to locomotive construction, make conceptualizing a fresh "path to the present" story virtually impossible. The paths are multiple and twisting, and the present is thick with ambiguity.

It is difficult to bid farewell to an old friend, for the optimism and simple linearity of progress narratives have provided a comfortable framework within which to locate our research. Many historians have and will utterly refuse to abandon them, contending perhaps that in their period and place, progress materialized in belief and practice, even if it has gone awry in recent decades. Others, recognizing that the writing of history is ever an attempt to explain the present by organizing traces of the past into stories, may hesitate for want of alternatives. This talk is an attempt to sketch several such alternatives; for if an industrial history of Pennsylvania is becoming an elusive notion, there is sufficient industrial history in Pennsylvania to keep us all busy indefinitely.

My title compresses this into a few words. First, Pennsylvania. In my view, Pennsylvania, a political unit, had multiple experiences of industrialization which generated diverse and distinctive productive spaces, both through the deployment of manufacturing and through industry-linked initiatives in and feedbacks to extraction and transport. These varied constructions generated the image of our ragged rectangle as a particular sort of economic unit, Industrial Pennsylvania; but this was always a fiction, unlike the political Commonwealth. As a state, Pennsylvania fashioned clear boundaries, a set of formal institutions, regulations, and lines of authority and representation. Industrial Pennsylvania had none of these, but instead was a congeries of loosely connected processes, local, regional, interstate, or indeed, international processes neither bounded by the Commonwealth's borders nor governed by legitimate, uniform rules. This disjuncture between political and productive forms, spaces, and dynamics installs a fundamental ambiguity in any reference to Industrial Pennsylvania. To my mind, that the polity and the economy operated with incommensurate units of analysis severely limits the utility of state-level industrial studies, and indeed they are rare except in treatments of government-business relations.

Second, industrializations. I use industrialization in the plural to suggest that both in different eras and at various sites a series of overlapping but separate processes unfolded across the 19th and 20th centuries. This has often been concealed by a language of growth, transition, and relocation, as if there were an industrial genealogy in which heirs expanded capacity, revolutionized technologies, and shifted sites of their fathers' or forebears' enterprises. Of course, the whole business was far more messy. Aggregate growth in output and
employment was achieved in a context of the perennial slaughter of new firms and displacement of the old. Depending on the approach used, between 60 and 80 percent of manufacturing companies first appearing in one 19th century census year had vanished a decade later. Also, relatively few firms working in a classic technical format survived the introduction of decisive novelty. In Philadelphia handloom textiles, the arrival of basic powerlooms for cottons and woolens drove antebellum handwork firms into ever-tightening niches, a course followed by footpowered frame-knitters and carpet weavers shortly thereafter. Only in carpets was there a significant number of survivors, for there a tariff-protected, rapidly expanding market permitted stepwise adoption of powerlooms by a score of firms that faced minimal interregional competition. In shipbuilding, only the Cramps' family firm managed the shift from wood to iron. In consequence, the American Clyde of the late 19th century was populated by companies that were either new starts or had moved from other branches of metalworking into ship construction. As iron production relocated from east to west, it was rarely members of the charcoal crowd who sponsored Pittsburgh startups, and steel's arrival involved an elaborate mix of wrought-iron holdouts, more or less adroit shifters, and assertive new starts. Nothing was clean or linear in these changes.

Thus though there surely was growth, transition, and relocation, it is implausible to situate these features in a tidy sequence from craftshops to factories to corporate mass production giants or to imagine a continuous pool of adroit adapters. Nor was it the case that each successive format simply displaced its predecessor, despite the constant failures. As Walter Licht and I demonstrated in Work Sights and John Ingham showed for the Pittsburgh metal trades in specific sectors specialty craft operations and durable niche manufacturers prospered alongside bulk and mass production oriented corporations well into the present century. Moreover, the emergence of big business did not correlate tightly with achieving mass production. Crossstate from tonnage steel producers and their associated Connellsville cokers stood the huge flexible and specialty enterprises of Midvale Steel, Disston Saw, the Dobson and Bromley textile mills, and Baldwin Locomotive. Within the Pittsburgh region, giant Mesta Machine and Westinghouse Electric operated as diversified custom and small-batch makers of capital goods, even as Crucible and Hussey generated ranges of specialty alloys and intermediate materials. Any notion of a block homogeneity in developmental dynamics of large manufacturing units is an illusion.

Further, if we add to the mix product-diverse machine tool builders, specialty chemical firms, and hardware producers, plus style-sensitive makers of fabrics, apparel, shoes, lamps,
fine leather, furniture, and ornamental glass and ceramics, a radically-differentiated array of industrializations becomes plausible amid highly varied sectoral conditions. Finally, if we include the local/regional market oriented manufacturers, - printers, newspapers, bakers, confectioners, brewers, foundries and machine shops - yet another realm of industrial variation is introduced. To be sure, these groupings suggest patterns within this diversity,
but I believe that no single theme can encompass it and thus substitute for engaging multiple pathways of industrial development carved out by differently-situated sectors and firms. Thus it is worth thinking about multiple industrializations that materialized both temporally and spatially with varying degrees of unevenness across Pennsylvania.

Third, conceptualizing. Concepts are tools for organizing our expectations. Discarding customary formats for organizing historical narratives is of little value unless clusters of alternative concepts can be put forward around which novel ventures into history can be positioned. Let me offer here a four-element concept cluster: disconnection, locale, diversity, and environment. Each has to do with processes, but none is an independent grand notion that could structure a fresh synthesis. Rather, each has potential to reframe varied aspects of the Commonwealth’s industrializations.

Disconnection

For most of this century the example of Yankee textile corporations has been a standard historiographical template for the lineages of industrialization. The reinvestment of Boston or Providence merchant fortunes in domestic textile production through Slater Mill, Waltham, and in time, the Lowell, Lawrence, Manchester, and Fall River complexes has become a canonical element of the story of America. However, that smooth redeployment of commercial capital into corporate manufacturing ill describes Pennsylvania, whose elite investment patterns differed from New England’s. As Baltzell documented eastern Pennsylvania’s landed and merchant gentlemen avoided industrial investments with rare exception, venturing into land speculation, banking, coal region development, and the railroad involvements coal mining mandated. Antebellum linkages in the eastern segment of the Commonwealth ran from commerce to extraction to transport, but among the elite, not toward manufacturing.

Nor did early, scattered-site or “proto-industrial” efforts automatically feed 19th century industrial expansion. Craftshop masters, rural millers, or iron makers did not commonly reorient themselves to participate significantly in the southeast’s rising industrial capacity. There was a disjuncture between the Wissahickon and Brandywine mills and industrialization at Manayunk, Kensington, and along the upper Schuylkill. Philadelphia landowners like the Leverings more often sold riverside acreage to new entrepreneurs than exploited its potentials themselves. And those entrepreneurs were frequently newcomers to the districts, particularly immigrants from Britain and Germany, a decisive departure
from the New England paradigm. Similar disconnects from linearity can be noted in those immigrant and in-migrant enterprises that overmatched established locals in metalworking, textiles, and other trades at Philadelphia, Lancaster, Chester, and other eastern sites. While there was continuity between merchantry, landownership, extraction and railroad ing, including the efforts of my Scranton forebears in the northeast, there was disjunction in those centers where a magnetic production dynamic drew in fresh talent from other regions and from abroad. In a thoroughly American fashion, new people with fresh techniques sought and created new, profitable nodes of demand, from materials handling equipment to shirtwaists and silk hosiery. In later eras they might well represent branch-planting national corporations (e.g., GE, Nabisco, et al.), as the spatial shed widened, as displacement and disjunction took new forms.

When these deployments succeeded one another in the same places, space was dynamically reconfigured by repeated industrializations, yielding the complex, layered landscape we find in Philadelphia, Allegheny County, and perhaps Harrisburg. In places where initiatives stalled after a first industrial thrust, we have a landscape of dead ends or instant museums, as at Hopewell, the silk mill towns of the anthracite region, or the increasingly deserted, post-1950 greenfield industrial parks like that at Fort Washington. The disconnectedness of these landscapes of production from one another and from any common evolutionary dynamic emphasizes the multiplicity of industrialization experiences that crowd the Commonwealth’s past.

Locale

If the state is a problematic organizing concept for industrial history, recent practice suggests that the locality and the region remain solid bases on which to mount research efforts. Until the rise of the new social history in the 1960s, local history was presumed to be a backwater of nostalgia, trivia, the celebration of once-prominent worthies, and the preservation of their mansions. Social history’s predilection for community studies relegitimated local history, pulling it away from a focus on early settlers and first families toward discovering how particular places were involved in and structured by the overarching changes of the 19th century: mobility, immigration, urbanization, industrialization, the democratization of consumption, and so forth.

To be sure, many of the social scientific ambitions of the new social historians proved difficult or impossible to achieve. Manuscript censuses held endless frustrations, provided
static portraits at long intervals, and proved expensive and exhausting to translate into databases for statistical analyses. Multiple studies showed convergence on a few points (Americans were in constant motion, the size of families shrank), but differences among communities stood out and large cities overmatched the best efforts of well-funded research teams like the Philadelphia Social History Project. Yet even as social history fragmented into specializations and syntheses eluded its practitioners, the emphasis on the local endured and, in industrial studies, often extended to the regional level. Gerald Eggert's fine work on Harrisburg, Ted Muller's continuing probes into the Three Rivers district, Walter Licht and Tom Dublin's ongoing research on the northeast's coal and silk towns, plus Howell Harris's and perhaps my own inquiries into industrial Philadelphia exemplify this approach.

While it is evident that these analyses are not additive, they do provide in different ways histories of localized industrial development that seek to account for patterns of industrial decay. To achieve this, they not only reconstruct locale in rich detail, but also reach beyond it to wider realms of technological change, state policy, absentee ownership, and international competition. If with Tolstoy, unhappy families are all different, accounts of the miseries of industrial communities should hardly be expected to converge. The locational, investment, and technological decisions taken by Big Steel executives after all reflected a world apart from that of specialty metalworking firms in the southeast or staple silk fabric manufacturers in the northeast. Explaining decline is both a pressing matter and a depressing experience, yet it brings into focus the shifting and asymmetrical power relations among institutions and interest groups that constitute the politics of economic action, as is clear from John Hoerr's and Dale Hathaway's recent books on steel. Such linking of the local with the global is a worthy, perhaps urgent task for industrial historians.

Diversity.

As I have argued for some time now, the received account of industrialization which emphasizes the rise of big business, mass production, and the modern corporation flattens the historical diversity of manufacturing approaches in two ways. First, it tends to homogenize large enterprises as a body of scale-seeking standardizers. Second, it marginalizes the array of midsize and small firms that profitably generated an immense variety of specialty producers' and styled consumer goods from the mid-19th century into the Great Depression. Recent work, in part stimulated by critiques from our European colleagues, has
begun to address both deficiencies.

Dissertations by John Brown and Tom Heinrich exploring respectively Baldwin Locomotive and Cramps shipbuilding have illuminated the managerial, marketing, and technical practices of two of Pennsylvania's giant, product diverse companies, each of which employed six to ten thousand workers early in this century and each of which, for different reasons, slipped into permanent decline by the 1920s. Other work is exposing the complexity of what I have clumsily termed "mixed output majors," firms like Bethlehem Steel and General Electric which made both high value-added specialties and mass produced goods (armor plate and ships vs. tonnage steel, turbines and generators vs. lightbulbs and toasters). Would that something comparable might appear for Westinghouse, which crafted the "big stuff" (as Steve Meyer calls it) in East Pittsburgh and staple electrical goods at other plants. On the second count, John Ingham's and my own work has identified sets of firms successfully devoted to specialty manufacturing, usually operating on smaller scales than bulk production giants and often in those interfirm networks that characterize flexible industrial districts. Dissertations in progress by Regina Blasczyk and David Jardini are extending these lines of investigation by reconstructing the dynamics of sectors having nodes of both batch and bulk manufacturing, namely china and glass. Increasing recognition of the significance of diverse industrial practices, of the complementarities and conflicts between different production formats, and of the varying spatial and institutional deployments of specialty and mass production opens new avenues for understanding the complexities and contingencies of industrial development.

Environment

After nearly two decades of provocative research, historians are coming to appreciate that environment can no longer be regarded as just a synonym for context. Rather, it signals human beings' relationships with a socially-constructed "nature" from which we distinguish ourselves intellectually and upon which we operate practically to create landscapes of husbandry, extraction, transport, industry, and residence. Shifts in our conceptualizations of nature and of our relations with it are by now staple elements of environmental history. Shifts in practice, evident in law and politics as well as landscape, beckon historians of industry, much as interpreting its physical residues appeals to museum professionals. Acclaimed studies by Donald Worster and William Cronon have addressed both ideas and practice at the regional level in the far West and Midwest respec-
tively, whereas work in progress by Brian Black and Fred Quivik treats Pennsylvania's oil and coking coal districts. Museum interpretation that lacks a well-considered environmental dimension is increasingly rare. However, initiatives that involve an explicit, environmentally-alert approach to urban and industrial dynamics are as yet less richly developed, except for the recent cluster of city park and air pollution control studies. The built environment, the created industrial cityscape, or what Cronon terms the "second nature" of human construction awaits both fuller conceptualization and empirical inquiry.

Moreover, there is genuine interest in applying historical resources to present problems confronting Pennsylvanians. A project in which I have become entangled illustrates an environmental dimension of this concern. At present, the city of Philadelphia holds title to several thousand abandoned industrial sites which several of its agencies are striving to restore to productive use, thus creating both jobs and fresh tax revenues. However, federal environmental law makes present and previous property owners "jointly and severally" liable for cleanups of toxic residues left behind before such sites can be reactivated, a process that not unusually costs millions of dollars. As a result, despite enterprise zone incentives, potential new users shy away from once-industrial urban locations and seek "virgin" outlying property, figuring that unknown liabilities for cleanup outweigh higher "greenfield" land prices and transport or labor recruitment problems. Thus the market for recycling the city's vacant industrial sites is nearly paralyzed.

At present, the University of Pennsylvania's Institute for Environmental Studies is attempting to use historical analysis as a lever to break this logjam. Due to inadequate staffing and divided responsibilities, the City government has never been able to develop an inventory of vacant industrial properties that would, by documenting their histories of use, differentiate those likely to have high toxic liability from others with far less exposure. Instead, city representatives have proceeded case by case, trying to match possible users with individual sites, but too often preliminary soil sampling shows serious cleanup problems that scuttle the deal. The Institute's historical research will create a property triage mechanism or protocol. Starting with several hundred sites in one enterprise zone, we will explore census manuscripts, business and industrial directories, plat and insurance maps, and city tax, zoning, and property records to create histories of post-1880 use for each site, once a subset of locations too small or already established as toxic have been eliminated. Environmental science colleagues will prepare a roster of industrial activities that entail high, moderate, or low probability of residual toxicity which we will match against site histories. Plainly, foundries converted into metal scrap yards have less viability than yarn
mills later transformed into clothing factories or warehouses. Once the historical analysis has identified a group of probable low-toxic sites, geologists will undertake soil and water table sampling to provide a cleanup liability baseline, ultimately yielding what we expect will be a far more marketable inventory of adaptive reuse properties.

If the experimental methodology of this pilot project proves effective, its generalization to the universe of city-owned industrial land will follow in due course. Further, such an approach will enable city officials to determine in advance which among the thousand or so additional tax-delinquent industrial properties can be seized and recycled with the least probability of paralyzing toxic contamination. Clearly, as the multiple initiatives of our colleagues at Carnegie Mellon illustrate, this is but one way in which industrial history can be deployed in relation to current public policy dilemmas. Together, environment-related ventures in academic and public history offer vital new frameworks for interpretation of Pennsylvania's past and application of historical research findings to present issues.

Of course, much more than has been noted here has been going on in recent studies of Pennsylvania's industrial history. Articles, dissertations, exhibits, and monographs over the past decade richly reflect our wider concerns with gender, ethnicity, and race, for example. In addition to vitalizing distinctive specializations, these themes are increasingly being integrated into studies of working class families, consumption, technical education, labor processes, neighborhood institutions, and in Walter Licht's recent book, the complex business of *Gettin Work*. To profile these interrelated achievements and their implications for a further opening up of our understandings of industrialization would demand fully as much, and perhaps more, space than the foregoing discussion has consumed. Such an expanded review could readily be supplemented by fresh perspectives drawn from material culture studies, the history of photography, industrial archeology, legal and medical history, and the history of technology. Even were I competent to work up such a synoptic assessment, its presentation would exhaust the patience of any audience, no matter how sympathetic.

Yet just listing the additional viewpoints that could extend this discussion underscores the heart of my message. As the plausibility of synthetic narratives of industrial progress diminishes, historians gain the freedom to ask an extraordinary array of novel questions about the past, questions that spring from the diverse challenges of our current political, economic, and cultural settings. Answering them will generate plural histories, differently focused and executed, to be sure. But that outcome seems to me entirely congruent with the task of coming to terms with the pluralistic, multi-focal, and omnidirectional society.
we encounter in late 20th century Pennsylvania. Very little remains of the clarity and certainty that infused my Beaver County context and our industrial history in the 1950s. Now multiple perspectives, multiple dialogues, multiple histories seem to me to open a wider realm of possibilities than replacing a battered optimism with a tired pessimism that merely adds "fall" to "rise." In diversity there is strength.

Notes

1. The Western Pennsylvania Interscholastic Athletic League.

2. Presently the topic of Lynn P. Snyder's dissertation work, "Air Pollution, Community Health, and Manufacturing in the Post-War United States," being completed in the History and Sociology of Science program at the University of Pennsylvania.


10. John Hoerr, And the Wolf Finally Came (Pittsburgh, 1988); Dale Hathaway, Can Workers Have a Voice? (University Park, PA, 1933).


