English Summaries

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Page 8 | Pamela O. Long

Bricolagic Practitioners and the Fluid Culture of Skilled Work in Late Sixteenth-Century Rome

This paper explores the culture of skilled practice in late sixteenth-century Rome. It takes specific examples of engineers, architects, printers, engravers, and painters to show the ways in which individuals in this time and place led particularly fluid work lives – moving from different kinds of skilled occupations as a way of moving up the social ladder. At the same time, skilled individuals and learned humanists often communicated in substantial ways and even developed friendships in arenas that I have called trading zones. This paper discusses the implications of this fluidity of occupation and the development of trading zones in early modern Europe. The examples are taken from Rome, but it is suggested that although Rome was in some ways unique, these conditions also prevailed in many other places in Europe.

Page 16 | Gerhard Dohrn-van Rossum

Clockmakers as the prototype of technical experts in pre-modern Europe

The interaction of technical competencies among engineers in the Renaissance.

Clockmakers were long regarded as the prototype of mechanical engineers in the early industrial age. Clock movements of every kind are frequently found among the machines and mechanisms devised or designed by Renaissance engineers in the 15th century. Their clocks were sensational technical innovations not only as timepieces, but also as the basis for a wide range of innovations that were to follow.

Page 24 | Reinhold Reith

Animal laborans and homo faber

An historical approach to the "craftsman orientation"

The "rediscovery of craftsmanship" and the "renaissance of manual skills" derive primarily from Richard Sennett's attempt to get to the essence of craftsmanship. This paper is therefore devoted to examining Sennett's thesis of craftsmanship, which he regards as a perpetual human impulse: "the desire to do a job well for its own sake." The paper closes with a dissenting plea for an historical analysis of craftsmanship and argues for a technology-history perspective as a complement to Sennett's "powerful materialism".

Page 34 | Leonard N. Rosenband

Journeymen Paperworkers, the Industrious Revolution, and the Industrial Enlightenment in Europe, c. 1700–1800

This article considers how the realities of hand papermaking framed the search for a papermaking machine. The manufacturers longed for a device that would sever the links joining the journeymen's skills, custom, and familiar output, and produce vastly more paper. The absence of an industrious revolution in papermaking and the modest contributions of the industrial Enlightenment to the trade intensified this drive. A mechanized mimic of the journeymen's skills, the papermaking machine put an end to their mechanical art.

Page 42 | Nina Schläfli

Transnational technology transfers

Launch and establishment of steamship construction at Escher, Wyss & Cie.

At the beginning of the 19th century, Switzerland not only had no continuously navigable access to the sea but also no ship-building tradition like the major sea-faring nations of the early modern age. When Escher Wyss & Cie. began building steamships in Zurich in 1836 – 14 years after the introduction of steam navigation on Swiss waters – the company had neither theoretical or practical know-how nor trained and experienced specialists. Drawing on the company's early history and three friends from Hans Caspar Escher's network, the paper describes how steamship technology transfer took place and how the development of ship-building became an independent department within the company, leading to the establishment of a new sector during the 1840s and 1850s.

Page 50 | Fay Lundh Nilsson, Per-Olof Grönberg

For the Promotion of Industrialization

Technical Upper Secondary Schools in Sweden 1855–1920

The lack of middle-level technical education, which could provide local and regional industries with technically skilled labor and prepare students for higher technical studies, led to the establishment of technical upper secondary schools in five Swedish cities from the middle of the 1850s. When the Parliament made its decisions about the schools' locations, cities that already had significant industrial or proto-industrial activities were initially favored. In the case of Malmö, about 50 percent of the graduates became employed in the school region, another 30 percent in the rest of Sweden. Thus we conclude that the school functioned as a regional institute for technical education. Around 20 percent went abroad, mostly to Germany and the US, for studies or to further their career. Many of them returned with new knowledge and skills.

Page 58 | Serenity Sutherland

Women in Chemistry's Workforce

The Women's Laboratory at the Massachusetts Institute of Technology, 1876–1911

In the 1870s, the Massachusetts Institute of Technology (MIT) began offering educational opportunities to women scientists. Ellen Richards, the first woman to graduate from and teach at MIT, paved the way for future female students by beginning a Women's Laboratory that later transitioned into a Sanitary Science Laboratory. This paper outlines the network of women who studied in MIT's laboratories, and describes their scientific and technical research into the chemistry of water pollution and fire prevention. Beyond their laboratory work, women like Ellen Richards also engaged in the emotional labor of mentoring and network building.

Page 66 | Peter Moser

"Motor culture" overrides "steam culture"

Konrad von Meyenburg's rotary tiller: development and reception history

The engineer Konrad von Meyenburg (1870–1952) played an important role in technology history. While his achievements are largely forgotten today, his obscurity is due in part to the fact that he left no written legacy. One approach to increasing our knowledge of the ideas and work of this inventor, who was active on both sides of the Atlantic, is to reconstruct and analyze the reception history of his inventions. This paper examines the reactions triggered by Meyenburg's rotary tiller, an invention that owes as much to the abilities of the mole as to the ideas of Frederick Winslow Taylor. The focus is on the way farmers and market gardeners responded to the motor-driven tiller, as they were the ones most closely affected by the invention.

Page 76 | Rupert Pichler

Innovation in large enterprises

Hubert Hauttmann – an Austrian career in industrial research

In as much as they are "people in technology", scientists are of eminent importance for innovation in large-scale steel enterprises, and in-house research departments provide the necessary institutional structure along with the required human and technical resources. The career of Hubert Hauttmann (1895–1982), one of the inventors of the LD process in steel production and a research scientist and head of research at GHH and VÖEST, reflects these functions in exemplary fashion. Since many questions in steel research arose only during the production and processing phases, persons like Hauttmann at the interface of science and industry gained new insights and built up powerful research organizations.

Page 86 | Corinna Schlombs

Unrecognized persons in computer technology

Data input in the banking sector

This article examines the hitherto largely unnoticed work of women in computer technology in the context of the early days of data digitization in the banking sector, taking the USA and West Germany as examples. It presents initial findings of a research project that spotlights women engaged in data input (keypunch operators) for West German savings banks. The findings, for instance about job satisfaction and motivation, are taken from a series of interviews with former long-serving part-time keypunch operators.

Page 94 | Laura Platte, Kathrin Schönefeld, Frank Hees

Artificial intelligence in production technology – a humiliation for engineers?

The idea of systems of artificial intelligence has served, since it took off in the 1950s, as a projection screen for anthropological questions; the technology sociologist Sherry Turkle described this as the fourth humiliation of mankind's vain view of himself. Thanks to ever more powerful computers, artificial intelligence (AI) is moving from the realm of hypothesis to that of practical application. Against the background of the digitization of industrial production,

which affects high-tech and high-wage locations in particular, the spread of AI is having an impact on the engineering profession. Is the engineer's role as planner and decision-maker being threatened by intelligent systems? This paper presents initial findings from five interviews with scientists from the German Research Foundation's cluster of excellence "Integrative Production Technology for High-Wage Countries".

Page 102 | Olaf Schmidt-Rutsch

Not a textbook example of labor

The Industrial Labor Memory Archive of the LWL Industrial Museum

The Landschaftsverband Westfalen-Lippe (LWL) founded a decentralized museum in 1979, whose aim was to document the life and work of people in the industrial age at historically authentic sites. Employing methods of oral history, documentation was compiled on the former industrial plants, thus laying the groundwork for future use by the museum. This gave rise to the Industrial Labor Memory Archive, which now boasts some 1600 units. The article deals with the origins of the Memory Archive in the context of the discourse about industrial culture. Taking selected examples, it illustrates the variety, opportunities and limitations of oral history in the scientific examination of technically oriented work environments.

Page 114 | Franziska Eggimann

Technology's walk-on roles

A series of photographs from the Corporate Archives of Georg Fischer Ltd illustrates large-scale steel castings, which were "stage-managed" by the company's photographer, Max Graf, at the Schaffhausen steel foundry in the 1950s and 1960s. The engineers, foundrymen and shop floor workers – who were active protagonists in the production process – play walk-on roles in this "comédie technique".

Page 126 | Nicolau Lutz

"Dear Fischer, we are of one mind!"

The relationship between Johann Conrad Fischer and Archduke Johann of Austria – a story of metallurgy, sense of rank, and restoration

A recently discovered manuscript containing excerpts from discussions between the Schaffhausen metallurgist and entrepreneur Johann Conrad Fischer and Archduke Johann of Austria throws new light on their long-standing friendship and on Fischer's involvement in both technology and politics.

Page 134 | Franziska Eggimann

"Working together means thinking together"

The history of the employee suggestion system at GF

Towards the middle of the 20th century, Georg Fischer Ltd in Schaffhausen instituted a company-wide suggestion system in an effort to give full rein to employees' ideas and creative potential. The suggestion scheme was an instrument to promote employee participation, but it also contributed to making significant savings and to streamlining. This paper outlines the history of the GF employee suggestion system and places it in the context of Switzerland as a whole. In particular, the efforts of Hans Weber, who was head of personnel in the 1950s, formed the basis for the growing acceptance and consolidation of the suggestion scheme, which continues to function today as an element of participatory innovation management.

Page 142 | Florian Ruhland

Where do our books come from?

Provenance in the Iron Library

To mark its 70th anniversary, the Iron Library held a special exhibition in which it presented a selection of book provenances from the 16th to the 20th century. The present article provides more detailed information on some of the provenances displayed and explains the historical background of the collections where the books were housed before the Iron Library acquired them. Even though the Iron Library is only beginning to research and catalog its provenances, there is evidence of a large reservoir and a great deal of potential that offer a wide range of starting points for further research.