

Engineers vs political and financial stakeholders in Portuguese railways: a sociotechnical approach to a peripheral nation (1850s-1910s)

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Abstract

In the 1850s, after thirty years of political turmoil, Portuguese technocrats agreed to put investment in science and technology before sterile ideological disputes and to set *progress* as the aim everyone should aim for. Benefitting from the adherence to the gold-standard in 1854, the country began an ambitious public works program, spearheaded by railways. Throughout the second half of the nineteenth century, the main branches of the Portuguese railway system, which extended for roughly 2,500 km, were built and surveyed (Alegria 1990). Historiography about Portuguese railways usually considers the rationale behind their discussion as entirely technological and focuses mainly on their outputs, taking railways for granted, or black-boxed. However, the planification of large transportation systems depends on the sociotechnical context and on hierarchies of power of their time (cf. Latour 1999: 304-306 and Kranzberg's Fourth Law – Kranzberg 1986: 550). In this paper, I propose to open the black box of Portuguese railways. I use technical and military reports, parliamentary debates, and sundry bibliography to analyse the influence different stakeholders (or system-builders to use the expression of Hughes 1983: X), like engineers, army officers, policymakers in the central government, and corporations, had in the final design of the Portuguese railway network, considering their expectations, priorities and agendas. Specifically, I will focus on the input of Portuguese engineers (most with specialized training in the Saint-Simonian schools of France and Belgium, Matos 2009: 180-181) and compare it with the lobbying of decision-makers at central government, local caciques, and private financiers and entrepreneurs. I claim that engineers played a decisive role in the planning of the network (besides being responsible for the transfer of knowledge about railway construction and operation from the European core), but a large part of its design was due to non-technical issues, including political and diplomatic machinations, budgetary constraints, and corporative lobbying. I aim to add to the debate about the co-construction of society and technology, the importance of social factors to technological implementation and how technology is a sociotechnical construction (Hackett et al. 2007).

Keywords: planning, policymaking, black-boxing, Saint-Simonianism, co-construction

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