**Early logic machines and the problem of elimination**

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It is known that some symbolic logicians in the nineteenth-century, notably the British William S. Jevons and the American Allan Marquand, designed “digital” logic machines. Such devices were described in history of computing literature (Gardner 1958; Buck & Hunka 1999). These machines got a mixed reception and were not adopted by the developing community of symbolic logicians. Buck and Hunka (1999) wondered “what the course of computer development and implementation would have been like had the work of Jevons and Marquand become widely known and elaborated, rather than having many individuals rediscover principles and methods that had been developed 50 years earlier” (p. 26). To understand this poor reception, it is important to consider the problems for which these machines were designed and how they were viewed by their designers. Early symbolic logicians were mainly interested in the problem of elimination that Jevons (1870) defined as “the problem of logical science in its complete generality: — *Given certain logical premises or conditions, to determine the description of any class of objects under those conditions*’ (p. 499). To solve this problem, symbolic logicians designed symbolic, diagrammatic, and sometimes mechanical solutions (Durand-Richard & Moktefi 2014). To compare their methods, logicians addressed complex problems. Yet, many among them viewed these problems as artificial since they seldom occur in real life while some philosophers denied that such problems would belong to the serious business of logic. Hence, the utility of such innovations was questioned, especially for high numbers of terms and premises. This scepticism was faced by logicians who designed logic diagrams for such problems (Moktefi & Edwards 2011). In this paper, we examine the role of the elimination problem in early symbolic logic and how it motivated the design of early logic machines. Then, we argue that logicians’ disbelief in the occurrence of complex elimination problems contributed to their scepticism as to the practical utility of such machines.

**References**

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