METAL PRODUCTION IN LATE ANTIQUITY:
FROM CONTINUITY OF KNOWLEDGE TO
CHANGES IN CONSUMPTION

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Abstract

The study of metal production in Late Antiquity falls between the Early Roman period and the Early Middle Ages—both of which left a more lasting impression. Late Antiquity marks an ambiguous boundary, or rather a period of transition in which significant continuity of knowledge of ancient techniques can be found, although sometimes translated into new forms, as a result of: a crisis in extraction activities of the central government; of contacts between peoples who brought with them different traditional techniques; and of changes in use, whether utilitarian or not. To examine these phenomena, three methods can be applied: firstly, one can differentiate products through their technical details; secondly, one can quantify production, and thus the metal that was actually available to the different social groups; thirdly, one can undertake archaeometallurgical research on sites of particular interest.

INTRODUCTION

Roman material culture reached a remarkable technological level, notably in terms of the manufacture of metal objects, which were widely distributed during the first centuries of the Empire. This simple observation once led some historians¹ to ask why, in Late Antiquity, the Roman World did not produce an industrial revolution. This debate was obviously connected with a view of Late Antiquity and the Early Middle Ages as a period in which much knowledge was lost, including proper technical knowledge. However, this discussion can be sidestepped if one

¹ Gibbon (1776); Rostovzeff (1957) 535 asks, from a Romanocentric view, “why does modern society always have to build upon the ruins of Antiquity, instead of being its direct continuation?”
Enrico Giannichedda considers the factors that made it difficult for something even vaguely resembling an industrial revolution to occur in the Roman world.  

Firstly, the Romans thought of their world, as being the best of all possible worlds: they did not reason using the modern logic of ‘progress’, but, on the contrary, “they thought they had reached the end, but they hadn’t even started”. Secondly, it was typical for the Roman world, in terms of social behaviour, to think of a vicious circle of wealth accumulation and loss, which was characterised by income distributed according to social status, and the absence of an economic logic driven by investment in productive activities. This was, furthermore, a society that in essence founded its wealth on the spoils of wars of conquest. A society which indulged in enormous waste—well illustrated by the luxury of private residences and public places—and which excluded the sphere of production and the trading economy from the ensemble of values that they perceived as positive. Thirdly, slave-organisation was present in every branch of production, where larger profitability could easily be reached by increasing the work force at low cost, instead of investing in mechanisation or improved power sources. 

Together these three factors suggest that the typically medieval experience of a combination of technique and science was not achieved. This combination, in later centuries, provided the basis for subsequent developments of a world that can be straightforwardly called pre-industrial, and was based on a completely new mentality and organisation that had been created with difficulty in the Middle Ages. It was in the Middle Ages (13th–15th c.), in fact, that mechanisation occurred—which led to the study of the physical powers at work during processes of production—and the intensification of trade, supported by an increase in demand for consumer goods. Unquestionable and enormous changes occurred from A.D. 1000 and which differentiate ancient from medieval metallurgy, especially in terms of scale.

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4. See for this topic: Giannichedda (forthcoming a). Rather dated, but still essential because of the extensive work with which they approach the technical problems are Gille (1985) and Gimpel (1988). The complexity of the relationship between technique and society in Roman society is very noticeable in, for example, Ciarallo and De Carolis (1999); González Tascon (2002).