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Round Table comment: From «useful knowledge» to a «culture of growth»

It is a very great honour and pleasure for me to present some ideas at this round table and to such a group of excellent scholars who have been experts in the topic of our *Settimana* long before I began to engage in this field of research. So, I only can try to deliver insight in some of my impressions I have got during this very inspiring Settimana, but it would not be possible to summarize all the well-prepared and ingenious papers presented to us in the last three and a half days. First of all, let me stress that from my point of view it was an excellent *Settimana* with such a broad variety of aspects of knowledge economy in pre- and early industrial times, whereby the term 'knowledge economy' (cf. Rooney et al. 2005) can be defined – according to Joel Mokyr (2002)[1] – «as one that produces sufficient 'useful' knowledge to generate a process of modern economic growth». It has been our aim to reflect on how knowledge facilitated economic growth before 1750 to 1820 by the improvement of productivity and by resilience[2] of European medieval and modern societies after subsequent demographic, economic, and war crises. In preparation of this *Settimana* three key terms were identified, «useful knowledge», innovation, and productivity. These key terms were the main subjects of the three working days, after Carlos Laliena Corbera had held his very inspiring *Prolusione* on the general topic on Sunday afternoon.

Before the conference, scholars have pointed to the substantial transformations that occurred in useful knowledge in the late medieval and early modern period, but in assessing the impact of these transformations on economic growth, they have tended to highlight institutional and social contexts more strongly than technological innovations. It was the aim of our *Settimana* to – let me say – 'modify' this a little bit and to shift the focus (again) to the economic aspects, at least to the same degree as recent research has emphasized cultural ones. From my point of view, this is a very important thought, because we dealt with economic knowledge!

So, I would like to point out that we should speak about useful economic knowledge or economically useful knowledge – not only simple useful knowledge. Most of the knowledge compiled by humankind was useful – I guess –, but was it

[1] Of course, not all ideas and arguments of Mokyr's idealistic approach are accepted for granted in the scientific community, and quite a body of criticism was expressed in some of the reviews, which, however, concern more single details than his main arguments (cf. Mokyr et al. 2004).

[2] In our context, "resilience" indicates «recovery capacity» and «development on a new basis» in the field of economy.

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economically useful as well? This differentiation is very important from my point of view, and especially for the appraisal of the results of our conference. We heard only one contribution concerning the economic knowledge on agriculture, peasantry and all features of rural economy (Yulia Altukhova-Nys), which covered up to 90 percent of the pre-industrial economic output and which was – in the scope of the so-called Agricultural Revolution – the most discussed and described economic field at least in 18th century England (Overton 1996; Allan 2000), perhaps in France and the Holy Roman Empire as well. Most of the pre-industrial technical skills constituted a fine background for innovations in crafts and industries since the Middle Ages (e.g. von Stromer 1977), and in the commercial activities the elaborate techniques of bookkeeping and costing became more and more essential instruments for crises and resilience management (cf. Denzel 2020) of commercial and later industrial enterprises. So, I think that economic historians should concentrate more on these economic factors than on the cultural ones. If we ask for the best basic parameters of economic growth, economic factors are decisive, and cultural factors take only the second or an even lower rank.

After these preliminary remarks, I would like to present some impressions of this fifty-third *Settimana*: First of all, I am impressed by the variety of sources we heard about, from the craftsmen's texts (Julia Bruch) to the tally sticks (Tanja Skambraks) as well as the Saxonian price competitions (Seiji Horii). These are only some examples. I guess that most of us did not have such sources in their focus when they thought of knowledge economy. Nevertheless, these sources give us excellent information in theory and practice and bring the material culture close to the classic economic history, and this can and will enrich our further research.

The speech of Bert De Munck who emphasised that the reputation of craftsmen went down when information on their crafts were published in a broader manner, made me pensive. His finding is quite correct when I think about the situation in the Holy Roman Empire in Early Modern Times. But it is the other way round, when we look at merchants and businessmen: Their reputation in society was strengthened as information on their profession was published in the merchants' handbooks of the 16th and 17th centuries and the famous encyclopedias of the 18th century. From the point of this question of research I would like to suggest that we should widen our perspective into the 19th century, because in the wake of the industrialisation many new institutions of practical education were founded, from the *Gewerbeschulen* up to the technical universities in Germany. The German lands and later the German Empire were leading in the latter sector followed by Austria, the United States with the MIT and Switzerland with the ETH. And the graduates of these institutions have enjoyed a very high reputation by their societies, which modifies the argument we have discussed in the long term. But this was outside of our focus, and therefore we concentrated on the dissemination of useful knowledge by classic universities and the crafts' apprenticeship system (Carlos Fernando Teixeira Alves; Maarten Prak and Patrick Wallis).

These two last-mentioned scholars made an almost perfect transition to the second day stressing that innovation may be interpreted as a result of improvement in human capital. All kinds of innovations enriched the economically useful knowledge, albeit in different manners and to varying degrees. We learned about

military innovation (Fabrizio Antonio Ansani), about technical procedures (Måns Jansson and Göran Rydén), and we gained a detailed insight in the English putting-out system (Nicholas Amor). In contrast to this focus on crafts and pre-industrial industry (the Germans have some issues with these terms), three papers on Monday and Tuesday presented innovations in the scope of commerce concentrated on bookkeeping (Heinrich Lang; Markus A. Denzel), and the role of the Hindu-Arabic numerals in this regard (Raffaele Danna). Goran Proot, Renaud Milazzo, and Andrea Ottone put the book at the centre of their contributions as the perhaps most important medium of early modern communication and useful knowledge transfer, as well as the book markets and the basics and strategies of book production.

The third day's papers confirmed Joel Mokyr's statement that «technological creativity blossomed in fifteenth-century Europe» (Mokyr 2016, 143), but no medieval Industrial Revolution in the full sense of this term took place (cf. Gimpel 1975; von Stromer 1980s). Didier Boisseuil showed us such technological creativity in his case study about the new alum production in Western Europe, and Louis Sicking demonstrated it by means of the spritsail and its effects on maritime transport and commerce. But not only such creativity boosted the productivity in a specific part of the entire economy, but also financial literacy could do this as Sandra De la Torre Gonzalo discussed in her case study on late medieval Aragón. Such useful knowledge – be it financial, technological or about markets – could contribute to a higher productivity and, in the last consequence, to economic growth. This became obviously clear in the outstanding speech of Richard W. Unger, who linked closely progress in naval technology over centuries to global economic growth, concluding: «The shipping sector offered … sources of growth and resilience of the economy». Last, but not least, Yulia Altukhova-Nys combined profitability with sustainability by using the example of agricultural accounting in mercantilistic France. This is it for a short survey of our Settimana so far!

Although one might assume that the variety of themes presented in our conference has been too broad, I would not agree. Only this wide spectrum of detailed insights in production, commerce, finance and agriculture gives us the possibility to answer the questions we expressed in our Call for Papers – at least partly. It is neither the time nor the place to answer all these questions here in detail, but I think that we can state that economically useful knowledge could induce innovations which further deepened and widened this economically useful knowledge; and this cycle was at least one of the decisive factors of raising profitability and, as a final consequence, of economic growth becoming obvious in the industrial evolutions in different European and later also non-European countries. To say it more clearly: Innovations did influence economic growth. Cultural and institutional processes, which generated knowledge and human capital, could influence the development of labour productivity. Knowledge did contribute to reduce risks in pre-industrial societies through information, communication, and resilience. But one question remains open: To what extent was the «culture of growth», which Mokyr (2016) has postulated for the Early Modern European economy, based on a specific European knowledge economy? And this question could be a starting point for further discussions and research.

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