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## The disenchantment of skillful bodies

### Early modern guilds as knowledge communities

\* Work in progress. Not to be quoted \*

#### Introduction

The link between science, modernity and Western dominance is a persistent one in historiography and social sciences. Whereas traditionally a distinction has been drawn between, on one hand, oral and embodied knowledge and, on the other, written, abstract and theoretical knowledge, the standard account of the history of knowledge and communication within Europe (or Eurasia) can be summed up as a gradual shift from the former to the latter.<sup>1</sup> As such, the encounter between Western and non-Western forms of communication and knowledge formation has been typically depicted as a confrontation in which the West eventually prevailed.<sup>2</sup> Alternative accounts inevitably encounter the fact that Western science, whatever the influence from the periphery and so-called contact zones, did indeed become dominant. Anyone writing about this history, including postcolonial and subaltern scholars, are also writing from within it and thus face the challenge of writing a sort of self-reflexive meta-history, i.e., the history of how Western forms of knowledge became dominant.<sup>3</sup>

In so doing one inevitably faces the near impossibility of distinguishing the circulation and transformation of knowledge from the justification of knowledge. Adopting new forms of knowledge always to at least some degree implies acceptance of this knowledge as legitimate. Postcolonial studies often address this, as do Science and Technology Studies (STS) and Actor Network Theory (ANT) in their attempts to better understand 'science in action' and the acceptance of 'matters of fact' as 'objective'. Bruno Latour's concept of 'immutable mobiles' (or more precisely 'immutable and combinable mobiles') lies at the

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<sup>1</sup> E.g., Elizabeth Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early Modern Europe* (2 vols.) (Cambridge UK: Cambridge University Press, 1979); Walter Ong, *Orality and Literacy: The Technologizing of the Word* (2nd ed. New York: Routledge, 2002); Also: Jack Goody, *The Logic of Writing and the Organisation of Society* (Cambridge: Cambridge University Press, 1986); and Idem, *The Interface Between the Written and the Oral* (Cambridge, Cambridge University Press, 1987).

<sup>2</sup> Two excellent counter-narratives: Diana Taylor, *The Archive and the Repertoire: Performing Cultural Memory in the Americas* (Durham: Duke University Press, 2003); Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900* (London: Palgrave Macmillan, 2007).

<sup>3</sup> Dipesh Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton: Princeton University Press, 2007); Gurinder Bhambra, *Rethinking Modernity and the Sociological Imagination* (London: Palgrave Macmillan, 2007).

crossroads of these two intellectual approaches. In this concept Latour referred to such techno-scientific objects as texts, schemes and illustrations which on the one hand are easy transportable (mobile) yet also retain key features of the knowledge inherent in them (immutable). Latour thus included 'non-human' elements (which in ANT are notoriously placed on the same level as human ones) while discarding the opposition between local and universal knowledge.<sup>4</sup>

The ingenuity of Latour's concept is that it focuses on circulation and networks yet also allows for the growing abstraction and codification of knowledge in Western history which resulted from, among other things, literacy and the printing press. The traditional western versus non-western divide based on cognitive and cultural differences is replaced with the idea of 'long distance control' through accumulation of immutable mobiles in 'centres of calculation'.<sup>5</sup> However, both conceptual terms remain targets of criticism. On the one hand, mobility is not necessarily confined to abstract and codified knowledge. As historians of migration and others have amply demonstrated, knowledge moved through migration.<sup>6</sup> On the other hand, Kapil Raj and others have not only focussed on circulation and interaction, but have also qualified the immutability of knowledge in circulation.<sup>7</sup> Knowledge transforms when it is translated, adapted and appropriated in myriad local settings, such that circulation itself can come to be seen as a site of knowledge production. In short, the field of tension between abstraction and codification, on one hand, and the local and contingent, on the other, continues to raise conceptual issues.

One crucial question concerns the historical coming about of the 'immutability' of knowledge. Can this phenomenon be reduced to the proliferation of texts, plans, schemes, instruments and the like, or is there in fact a more profound epistemological shift involved? Earlier accounts have connected the shift from (residual) orality to a written and printed culture to abstract thinking, analytical reasoning, the primacy of visual perspectivism, and interiorized individuality.<sup>8</sup> In the terminology of ANT, historical transformations include changes in how the human body and the human subject relate to objects in the context of networks. While the immutability cannot be confined to growing quantities of either codes on paper or of instruments and objects, a growing immutability can in theory also concern knowledge related to the human body and mind. Moreover, the political and the social are not 'contexts' in ANT but rather emerge from the network as well. The formation of knowledge – whether embodied or in the abstract – is inextricably connected to the formation of the collective. As such, the definition and circulation of knowledge should be examined as integral parts of the construction of collectives and communities (and vice versa) – including the way individuals or subjects relate to them.

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<sup>4</sup> Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge MA: Harvard University Press, 1987), Chapter 6.

<sup>5</sup> See also: John Law, 'On the Methods of Long-distance Control: Vessels, Navigation and the Portuguese Route to India', In John Law (ed.), *Power, Action and Belief: A New Sociology of Knowledge?* (Boston: Routledge, 1986), pp. 234-63, 1986.

<sup>6</sup> Warren G. Scoville, 'Minority Migrations and the Diffusion of Technology', *Journal of Economic History*, 11 (1951), pp. 347-360; Carlo M. Cipolla, 'The Diffusion of Innovations in Early Modern Europe', *Comparative Studies in Society and History*, 14 (1972), pp. 46-52; Heinz Schilling, "Innovation through Migration: the Settlements of Calvinistic Netherlanders in Sixteenth and Seventeenth Century Central and Western Europe", *Histoire Sociale – Social History*, 16/31 (1983), pp. 7-33; Salvatore Ciriaco, 'Migration, Minorities, and Technology Transfer in Early Modern Europe', *The Journal of European Economic History*, 34/1 (2005), pp. 43-64.

<sup>7</sup> Raj, *Relocating modern science*.

<sup>8</sup> Ong, *Orality and Literacy*. Also: Eisenstein, *The Printing Press*.

As a start, these questions are perhaps best tackled by focusing on the European history of knowledge itself. Influenced in good part by STS Studies and ANT, historians have already explored the 'construction' of science and matters of fact as an ideological activity. One especially relevant example is Steven Shapin and Simon Schaffer's magisterial *Leviathan and the air-pump*, which de-naturalized the experimental method as it became dominant in the seventeenth century, and as such has inspired subsequent works of numerous historians of science.<sup>9</sup> These works have included analyses of the collective and communal character of knowledge and knowledge production. Historians have focussed on learned and intellectual milieus, including the ways in which social and cultural contexts influenced and determined how knowledge was constructed.<sup>10</sup> To date, however, they have only hesitantly taken into account local 'subalterns', i.e., artisans and artists who cultivated and reproduced a type of embodied and, to a certain degree, local knowledge – with 'local' understood as being tied to the social and material context – which differed significantly from the knowledge produced among 'men of letters'.

This paper will examine the intricate relationship between knowledge and community in a guild context (in early modern Europe) and how this relationship changed at the end of the *ancien régime*. I will proceed from the assumption that even historians of science and technology who have focused on the cross-overs and mergers between scientific and artisanal knowledge – and have attributed agency to artists and artisans in the coming about of the Scientific and Industrial Revolutions – often misapprehend practices related to the knowledge of early modern artisans.<sup>11</sup> First, I will show that guild-based knowledge was related to ethico-political views on the nature of local 'corpses' (i.e., guilds and cities). The crucial product element for guild-based masters was intrinsic value, which they related (and guaranteed) by their political standing as urban freeman. This standing materialized through local institutions and practices such as the obligation of each master to be an urban citizen, to fulfill an apprenticeship term and to make a master piece. Second, I will reflect upon the decline of the guilds' ethos and political clout and the relationship thereof with shifts in the nature of their products and the skills and knowledge involved. I will argue that the shift from intrinsic value to design, decoration and mass production was related to the guilds' collective practices becoming discredited, and vice versa.

My overall argument is thus that the epistemological and the socio-political were fundamentally related. While the growing rift between knowledge and urban communities were due to new ways of knowing and constructing truth, this epistemological perspective

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<sup>9</sup> Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985).

<sup>10</sup> Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994); Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: University of Chicago Press, 1998); Deborah E. Harkness, *The Jewel House: Elizabethan London and the Scientific Revolution* (New Haven: Yale University Press, 2007); Larry Stewart, 'The Laboratory, the Workshop, and the Theatre of Experiment', In Christine Blondel and Bernadette Bensusan-Vincent (eds), *Sciences and Spectacle in European Enlightenment* (Aldershot: Ashgate, 2008), pp. 11-24.

<sup>11</sup> Joel Mokyr, *The gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton: Princeton University Press, 2002); Liliane Hilaire-Pérez, 'Pratiques inventives, cheminements innovants, crédits et légitimations', In Liliane Hilaire-Pérez and Anne-Françoise Garçon (eds), *Les chemins de la nouveauté: innover, inventer au regard de l'histoire* (Paris: Éditions du CTHS, 2003), pp. 9-38; Liliane Hilaire-Pérez and Catherine Verna, 'Les circulations techniques: hommes, produits, savoirs au Moyen Age et à l'époque moderne', In Michel Cotte (ed.), *Circulations techniques en amont de l'innovation: hommes, objets et idées en mouvement* (Belfort: Université de technologie de Belfort-Montbéliard, 2004), pp. 11-36; Liliane Hilaire-Pérez and Catherine Verna, 'Dissemination of technical knowledge', *Technology and culture*, 47/3 (2006), pp.536-566.

should in turn be connected to the practical and political construction of communities and networks. Nor can the relationship of subjects to their social and material environment be isolated from this. As we will summarize in the last section of this paper, transformations on the level of the relationship between knowledge and community cannot be separated from changes in the relationship of subjects to knowledge – whether embodied or codified.

### **The craft guilds' local knowledge**

Historians of science and technology have recently focussed on the relationship between prescriptive and propositional knowledge. Using these concepts, Joel Mokyr has made a distinction between the hands-on, experimental knowledge of doers (knowing how to do something) and the insights into natural phenomena developed by scientists and philosophers (understanding how something works). For Mokyr, western exceptionalism can be explained in large part by the gradual rapprochement and eventual reciprocal fertilisation between these two knowledge systems, which are thought to have unleashed a type of Schumpeterian growth.<sup>12</sup> Mokyr was criticized for adopting a Eurocentric view, yet the relationship between the hand and the mind – or between practical, experimental and hands-on skills on the one hand and theoretical and abstract knowledge on the other – is central in current research.<sup>13</sup> Some scholars have adopted the concept of 'circulation of knowledge' in order to avoid conceptualising knowledge transfers as having been top-down or from core to periphery.<sup>14</sup> Others have argued that the Scientific Revolution was to a large extent a bottom-up process in which artisans and artists played a major part. In this view, while the Scientific Revolution can be summarized as a shift from deductive reasoning towards observation and experimentation, both the realism developed by artists and the daily handling of matter by artisans are considered to have substantially contributed to this shift.<sup>15</sup>

However, this is not to say that any difference between artisans and artists on the one hand and intellectuals and new philosophers on the other has become obsolete. While the mechanical arts appear to have increased in status in the fifteenth and sixteenth centuries,<sup>16</sup> their subsequent evolution is very ambivalent. According to Pamela H. Smith, 'artisanal bodily experience was absorbed into the work of the natural philosopher at the same time that the artisan himself was excised from it.'<sup>17</sup> Smith hints at a process in which the mechanical arts underwent a shift in which *savoir-faire* and skills became distinguished from the artisans' personhood. In a way, this is how Enlightenment ideas towards the mechanical arts can be summarized. At first sight, it would seem that Enlightenment thinkers

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<sup>12</sup> Mokyr, *Gifts of Athena*. Also: Joel Mokyr, *The lever of riches. Technological Creativity and Economic Progress* (Oxford: Oxford University Press, 1990). An overview in: Maxine Berg, 'The genesis of useful knowledge', *History of Science*, 45/2 (2007), pp. 123-133.

<sup>13</sup> See e.g., Peter Dear, Lissa Roberts and Simon Schaffer, *The Mindful Hand: Inquiry and Invention from the late Renaissance to Early Industrialization* (Amsterdam: Elista, Koninklijke Nederlandse Akademie van Wetenschappen, 2007).

<sup>14</sup> Hilaire-Pérez and Verna, 'Les circulations techniques'; Hilaire-Pérez and Verna, 'Dissemination'.

<sup>15</sup> Especially Pamela H. Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago: University of Chicago Press, 2004). Also: Pamela H. Smith, 'Vital Spirits: Redemption, Artisanry, and the New Philosophy in Early Modern Europe', In Margaret J. Osler (ed.), *Rethinking the Scientific Revolution* (Cambridge, 2000), pp. 119-136; Idem, 'Artists as Scientists: Nature and Realism in Early Modern Europe', *Endeavour*, 24 (2000) 1, pp. 13-21.

<sup>16</sup> Pamela O. Long, 'Power, Patronage, and the Authorship of *Ars*. From Mechanical Know-how to Mechanical Knowledge in the Last Scribal Age,' *Isis* 88 (1997), 1-41, 3.

<sup>17</sup> Smith, *The Body*, p. 186.

stressed the importance of artisanal skills and the mechanical arts, yet closer inspection – of, among other things, the prints in the famous French *Encyclopédie* – suggests that the artisans who embodied these skills were equated with tools and instruments.<sup>18</sup>

Adam Smith, in his diatribes against the guilds' rules and monopolies, not only argued that lengthy apprenticeships were unnecessary because they hindered the application and employment of labour and skills at one's convenience; he also implied a division between ingenuity and invention on the one hand and the routinely manufacturing of artificialia on the other.

'Long apprenticeships are altogether unnecessary. The arts, which are much superior to common trades, such as those of making clocks and watches, contain no such mystery as to require a long course of instruction. The first invention of such beautiful machines, indeed, and even that of some of the instruments employed in making them, must, no doubt, have been the work of deep thought and long time, and may justly be considered as among the happiest efforts of human ingenuity. But when both have been fairly invented and are well understood, to explain to any young man, in the compleatest manner, how to apply the instruments and how to construct the machines, cannot well require more than the lessons of a few weeks: perhaps those of a few days might be sufficient.'<sup>19</sup>

Thus, notwithstanding the high appreciation of the mechanical arts in the eighteenth century, manufacturing artisans were regarded as lacking talent and ingenuity.<sup>20</sup> However, we should not a priori approach this via Enlightenment concepts of talent and emulation – in short, through the lens of meritocratic ideas – rather, we should try to understand the manufacturing artisans' own sensitivities. In the following pages I will argue that a crucial ideological dimension of the artisans' embodied skills had in fact become obsolete during this period. This dimension becomes visible when focusing upon the artisans' guilds (at least in the case of so-called strong guilds in which the manufacturing masters themselves held control) and how they organized apprenticeships, regulated product quality and expressed their collective identity.

From an economic point of view, all early modern guilds faced the challenge of producing or attracting a competitive amount of technical knowledge and skills.<sup>21</sup> Urban authorities and guilds were typically eager to welcome and attract masters and journeymen

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<sup>18</sup> Cynthia J. Koepp, 'The Alphabetical Order: Work in Diderot's *Encyclopédie*', In Steven L. Kaplan and Cynthia J. Koepp (eds), *Work in France. Representations, Meaning, Organization, and Practice* (Ithaca/London: Cornell University Press, 1980) 229-257; William H. Sewell Jr., 'Visions of Labor: Illustrations of the Mechanical Arts Before, In, and After Diderot's *Encyclopédie*', in *Ibidem*, 258-286; Simon Schaffer, 'Enlightened Automata', in William Clark, Jan Golinski and Simon Schaffer (eds), *The Sciences in Enlightened Europe* (Chicago: University Of Chicago Press, 1999), 126-165, 126-34.

<sup>19</sup> Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Book I (London, 1778, 2d ed.), 151-153.

<sup>20</sup> Bert De Munck, 'Corpses, Live Models, and Nature. Assessing Skills and Knowledge Before the Industrial Revolution (case: Antwerp)', *Technology & Culture*, 51/2 (2010), pp. 332-356.

<sup>21</sup> A recent state of the art and additional references in Bert De Munck and Anne Winter (eds), *Gated Communities? Regulating Migration in Early Modern Cities* (Aldershot: Ashgate, 2012). On the economic function of guilds in general: Stephan R. Epstein and Maarten Prak (eds), *Guilds, Innovation, and the European Economy, 1400-1800* (Cambridge: Cambridge University Press, 2008). Also: Jan Lucassen, Tine De Moor and Jan Luiten van Zanden (eds), *The Return of the Guilds* (Cambridge, 2009), *International Review of Social History*, Supplement 16.

who brought with them new and up-to-date technical knowledge and skills. Resourceful immigrants were offered free burghership, infrastructure accommodations, tax exemptions and waivers from civic duties, etc.<sup>22</sup> In this vein, migrating artisans can be seen as a type of ‘immutable mobiles’. As newcomers, they were expected to actively transfer their knowledge of techniques and products to local youth; such transfer was often a condition for their inclusion in the guild and for the facilities offered.<sup>23</sup>

However, guilds almost invariably also organized apprenticeship systems. It was generally not sufficient that apprentices conclude a contract with a master and then pay an entrance fee to the guild. An apprentice who wished to become a master usually had to train for a specific number of years and make a master piece. The knowledge passed to the apprentice during this apprenticeship period was, to a certain extent, local. This is apparent from the master test, which consisted mostly of making a product sold regularly on the local market.<sup>24</sup> Moreover, during his term the apprentice became accustomed to local standards, norms and values which were often difficult to distinguish from skills. Labour, of course, has always had a moral dimension connected to the love of the product and, more prosaically, to the taste of consumers. In the case of guild-based artisans, however, there was an extra dimension, in that guilds typically guaranteed the intrinsic value of their products, i.e., the value of the raw materials used.<sup>25</sup>

In contrast to what is often assumed, the guilds did not guarantee a sufficiently high skill level, but rather the honesty of the artisans – a moral quality. As is well known, craft guilds typically held a monopoly (their privilege) over production and sale of a specific cluster of products in a particular place (usually a city). This privilege was politically and morally justified by the claim that the products made within the guild (or the city, which theoretically amounted to the same) were superior in that the customer was not cheated by use of inferior basic materials. As such, the guilds’ regulatory system was geared towards a dimension of product quality that was invisible to the naked eye: such quality would have included the alloy and purity of metal wares, the origin and quality of leather, the type of wood, etc. While the guilds’ rules carefully prescribed product standards and control and sanction mechanisms such as workshop inspections and the obligation to have finished

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<sup>22</sup> E.g., Erika Kuijpers and Maarten Prak, ‘Burger, ingezetene, vreemdeling. Burgerschap in Amsterdam in de 17e en 18e eeuw’, In Joost Kloek and Karin Tilmans, *Burger: Geschiedenis van het begrip van de Middeleeuwen tot eenentwintigste eeuw* (Amsterdam: Amsterdam University Press, 2002), p. 121; Marc Boone and Peter Stabel, ‘New Burghers in the Late Medieval Towns of Flanders and Brabant: Conditions of Entry, Rules and Reality’, In Rainer C. Schwinges (ed.), *Neubürger im Späten Mittelalter. Migration und Austausch in der Städtelandschaft des alten Reiches (1250-1550)* (Berlin: Duncker & Humblot, 2002), p. 320; Ulrich Niggemann: *Immigrationspolitik zwischen Konflikt und Konsens. Die Hugenottenansiedlung in Deutschland und England (1681-1697)*, (Cologne/Weimar/Vienna: Böhlau-Verlag, 2008), pp. 290-301. Additional examples and references in De Munck and Winter (eds), *Gated communities?*

<sup>23</sup> E.g., Corine Maitte, ‘The Cities of Glass: Privileges and Innovations in Modern Europe’, In Bert De Munck and Dries Lyna (eds), *The Location of Value in Early Modern Discourse and Economic Practices (Late Middle Ages – Nineteenth Century)*, forthcoming.

<sup>24</sup> E.g., Bert De Munck, *Technologies of Learning. Apprenticeship in Antwerp from the 15th Century to the End of the Ancien Régime* (Turnhout: Brepols, 2007), chapter 2.2. An excellent synthesis and additional references on guilds in James Farr, *Artisans in Europe, 1300-1914* (Cambridge: Cambridge University Press, 2000).

<sup>25</sup> Bert De Munck, ‘Skills, Trust and Changing Consumer Preferences. The Decline of Antwerp’s Craft Guilds From the Perspective of the Product Market, ca. 1500 – ca. 1800’, *International Review of Social History*, 53/2 (2008), pp. 197-233; Bert De Munck, ‘One Counter and Your Own Account. Redefining Illicit Labour in Early Modern Antwerp’, *Urban History*, 37/1 (2010), pp. 26-44; Barbara Bettoni, ‘Usefulness, Ornament and Novelty: The Debate on Quality in Button and Buckle Manufacturing in Northern Italy (XVIII-XIX century)’, In De Munck and Lyna (eds), *The Location of Value*.

products checked, the quality of the product was communicated to customers through hall marks. These marks were typically collective, although they were often accompanied by individual (master) marks (and marks referring to the inspectors), so as to trace possible fraudulent masters.<sup>26</sup> In this vein, artisanal knowledge was to a large extent local (or particular) and implied familiarity with local standards, customs, and tastes.

Moreover, the local dimension of knowledge should not be understood solely from an economic perspective. Standardization is easily connected to the economic need for niche products and customer loyalty, yet for the artisans there was more involved here than just economic efficiency. First, the status of master was often conditional upon his membership in the city as a political community. In order to become a master one typically had to be, or become, a burgher to the city in question; this implied a political and moral commitment to the city and included an oath pledged in public.<sup>27</sup> Immigrating artisans who were granted privileges often committed themselves to training local youth, thus linking their professional knowledge to the local urban context.<sup>28</sup> Second, guild-based artisans linked their skills and trustworthiness to the urban context through specific rituals and visual culture. Their blazons, coats of arms and paintings typically featured their instruments and products alongside their patron saints and other religious elements. These references to their work and products were made visible in public processions and parades and by hanging them in the guilds' chapels, above the altars or (for coats of arms) outside their homes and halls.<sup>29</sup> All this suggests that for guild-based artisans skills had an important moral and political dimension intimately tied to the local (urban) context. Per Latour's theory, their bodies cannot be seen as conveying immutable knowledge.

### **The disappearance of the artisans' corps**

To put it differently, it is not sufficient to argue that the skills of manufacturing artisans were embodied. Learning was essentially a matter of both learning by doing and imitating a superior; and skills were very much rooted in the bodies of the artisans. Books, plans, schemes, recipes and the like were of minor importance for these artisans. But, the artisans' physical bodies should not be reduced to instruments or conveyors of skills, as has been customary since the Enlightenment. Following the revelatory ideas of Pamela Smith, I am inclined to afford more credit to the religious context in which these artisans worked. Smith has compared the attitude of artisans towards materiality with the approach of sixteenth-century scientists such as Paracelsus. According to Paracelsus, knowledge resulted not from reason but from a fusion of the divine powers of both matter and the human body and soul.<sup>30</sup> Due to God being present in everything that was created, science ('scientia') was in a way inherent within these things themselves. Applied to artisans, this meant that artificialia

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<sup>26</sup> Bert De Munck, 'The Agency of Branding and the Location of Value. Hallmarks and Monograms in Early Modern Tableware Industries', *Business History* (2012) forthcoming.

<sup>27</sup> \*Farr, Rappaport, Archer?\*. Also: Christopher R. Friedrichs, *The Early Modern City* (London and New York: Longman, 1995), pp. 143-144; Jonathan Barry, 'Civility and Civic Culture in Early Modern England: the Meanings of Urban Freedom', In P. Burke et al. (eds), *Civil Histories: Essays Presented to sir Keith Thomas* (Oxford, 2000), pp. 181-196, p.191.

<sup>28</sup> Maitte, 'The cities of Glass'.

<sup>29</sup> E.g., De Munck, 'The Agency of Branding'; Bert De Munck, 'From Religious Devotion to Commercial Ambition? Some Marginal Notes on the Religious Material Culture of the Antwerp Crafts in the 16th century', In Ria Fabri (ed.), *From Quinten Metsijs to Peter Paul Rubens: Masterpieces From the Royal Museum Reunited in the Cathedral*, (Antwerpen: De Kathedraal, 2009), pp. 21-31.

<sup>30</sup> Smith, 'Artists as Scientists', 17.

not unlike naturalia can be seen as deriving their value from their relationship with ‘the Book of Nature’ or the wonders of the universe, rather than from human dexterity or virtuosity as we understand it today.<sup>31</sup> As Smith cleverly observes, the approach of a gold- or silversmith in the seventeenth century did not differ fundamentally from an alchemist’s.<sup>32</sup>

Ultimately, manufacturing can be seen as the encounter of two religiously and morally charged ‘bodies’: the body of the artisan and that of the matter he worked with. Not coincidentally, guilds were traditionally organized according to the raw materials central to each profession. Typically, shoemakers were clustered with tanners, carpenters with cabinet makers, and so forth. While this could at first sight be explained by business-related networking or the need for regulations spanning the various groups within a single sector, the history of the nomenclature related to labour and professions suggests otherwise. Historians have identified a shift, in the eighteenth and nineteenth centuries, from basic materials to production techniques and the use of products as the prime organizing principle underlying guild membership.<sup>33</sup>

Nor is it sufficient to note that artisanal skills were collective. The social and collective nature of skills alone does not explain the presence of the artisans’ bodies in the public sphere. The artisans’ skills and bodies were not only *represented* in public but were physically present as well. This is evidenced by the idealized images of labour and craft presented by artists such as Jost Amman in sixteenth-century Germany and the Luiken brothers in the Dutch Republic. Their engravings and prints typically depict the labour process as being situated at the front of the home, with doors and windows open. Customers and passers-by are often pictured peering inside the work space; likewise, parts of the city are often discernible, and thus these images suggest a close link between labour and the urban context in both a symbolical and material sense.<sup>34</sup>

To be sure, this could to a certain degree be explained from an economic perspective. Working in the front of one’s home was often obligatory for artisans, in order to prevent fraud and moonlighting. But the presence of manual labour in the public realm was also part of a corporative culture in which artisans demonstrated their skills and honour in public. Like artisans, who made their masters’ tests in public or semi-public spaces and who worked in visual spaces, rhetoricians also physically demonstrated their abilities and eloquence (itself partly physical) in public forums, on the occasions of competitions and contests.<sup>35</sup> It would

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<sup>31</sup> Smith, ‘Artists as Scientists’ and ‘Vital Spirits’. Also: Lorraine J. Daston, ‘The Factual Sensibility’, *Isis*, 79/3 (1988), pp. 452-467, particularly 456-458; Lorraine J. Daston and Katharine Park, *Wonders and the Order of Nature, 1150-1750* (Cambridge MA: Zone books, 1998); Lorraine J. Daston, *Things That Talk: Object Lessons From Art and Science* (Cambridge MA: MIT-Press, 2004).

<sup>32</sup> Smith, ‘Artists as Scientists’, 19.

<sup>33</sup> Bernard Guibert, Jean Laganier and Michel Vovelle, ‘Essai sur les nomenclatures industrielles’, *Économie et Statistique*, 20 (1971) 23-63. Cited in Alain Desrosières, ‘The economics of convention and statistics : The paradox of origins’, *Historical Social Research* 36/4 (2011) 67 (Special issue on ‘Conventions and institutions’).

<sup>34</sup> E.g., Rolf Dieter Jessewitsch, *Das ‘Ständebuch’ des Jost Amman (1568)* (Münster, 1987); Jan and Kaspar Luiken, *Spiegel van het Menselyk Bedryf, vertoonende honderd verscheiden ambachten, konstig afgebeeld, en met godlike spreuken en stichtelyke verzen verrykt* (Amsterdam, 1694).

<sup>35</sup> Arjan Van Dixhoorn, ‘Writing Poetry as Intellectual Training. Chambers of Rhetoric and the Development of Vernacular Intellectual Life in the Low Countries between 1480 and 1600’, In Koen Goudriaan, Jaap van Moolenbroek and Ad Tervoort (eds), *Education and Learning in the Netherlands, 1400-1600* (Leiden: Brill, 2004), pp. 201-222, Idem, ‘Chambers of Rhetoric: Performative Culture and Literary Sociability in the Early Modern Northern Netherlands’, In Arjan Van Dixhoorn and Susie Sutch (eds), *The Reach of the Republic of Letters. Literary and Learned Societies in Late Medieval and Early Modern Europe* (Leiden: Brill, 2008), pp. 119-159.



thus seem that the presence of the body was not an instrumental one, but rather one part of a culture or ideology in which bodily metaphors (*corps de métiers*, corporations, etc.) related to the body of Christ were part of daily life.<sup>36</sup>

That historians have so often failed to recognize this dimension may be due to its subsequent evolution. This moral and religiously charged link between raw materials, the artisan's body and the city as a political body gradually disappeared from about the mid-seventeenth century on. This is revealed especially clearly by a superficial visual scanning of eighteenth-century prints and images of the labour process and crafts, such as the print collection *L'art du Potier d'Étain* from the French pewterer Pierre-Augustin Salmon<sup>37</sup> or the French *Encyclopédie*. In sharp contrast to sixteenth- and seventeenth-century images, artisans are depicted here in closed spaces and in environments dominated by instruments and machines. The public, urban environment has vanished, and the artisans' bodies are less pronounced in these images.<sup>38</sup> However, what was at stake was neither a shift from people to machines nor the simple increase in specialisation and division of labour; it was rather the human body becoming subject to the same laws of nature as were machines. To quote one anecdote: While efforts were being undertaken to produce a disciplined workforce through an idealized work place, the renowned entrepreneur Josiah Wedgwood in 1782 advised James Watt to handle and manage his own body like 'any other machine under your direction'.<sup>39</sup>

Concurrently, intrinsic value appears to have become less important in the appreciation of products. Jan de Vries, widely cited among historians studying material culture and changing consumer preferences, has postulated a shift from intrinsic value (in so-called old luxuries, typically manufactured within a guild context) and to design and decoration (new luxuries) being the important element for the value of products.<sup>40</sup> As a result, the guilds' hallmarks, rules and discourses lost credibility for policy makers and customers alike. But, given the simultaneous disappearance of the material and political context of the city, we should again be wary not to reduce this to an economic issue. The materiality of both raw materials and the social context appears to have declined, yet the bodies of the artisans would seem to have become objectified – or, perhaps, transformed into 'immutable mobiles'.

To date, the eventual abolition of the guilds has been attributed to either the economic strategies of large merchants and entrepreneurs operating outside the guild frame or the political strategies of administrators and policy makers of central and territorial states. In both cases, Enlightenment thinking serves as an important backdrop, albeit absent any thorough understanding of why French physiocrats and Scottish political philosophers were so profoundly opposed to the guilds. Typically a distinction is drawn between the

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<sup>36</sup> Cf. Farr, *Artisans*, pp. 258-260. Also: Natalie Zemon Davis, 'The Sacred and the Body Social in Sixteenth-Century Lyon', *Past and Present*, 90/1 (1981), pp. 40-70.

<sup>37</sup> Published by *l'Académie des Sciences* in 1788

<sup>38</sup> See Bert De Munck and Arjan Van Dixhoorn, 'The Body in the Performance of Knowledge: The Mechanical and Liberal Arts in the Civic Community (1568-1713)', In Sven Dupré, Bert De Munck, Werner Thomas and Geert Vanpaemel (eds), *Embattled Territory. The Circulation of Knowledge in the Spanish Netherlands*, forthcoming.

<sup>39</sup> See Schaffer, 'Enlightened Automata', cit. on p. 150.

<sup>40</sup> Jan de Vries, *The Industrious Revolution. Consumer Behavior and the Household Economy, 1650 to the present* (Cambridge: Cambridge University Press, 2008), Chapter 4. See also Helen Clifford, 'A Commerce With Things. The Value of Precious Metalwork in Early Modern England', In Maxine Berg and Helen Clifford (eds), *Consumers and Luxury: Consumer Culture in Europe, 1650-1850* (Manchester: Manchester University Press, 1999), pp. 147-169.

guilds' 'trade secrets', which were to be made public or, rather, made subject to the invisible hand according to the guilds' opponents. Similarly, rules related to apprenticeship (as a prerequisite of mastership) were abolished, so as to allow everyone to work where one's talents were best remunerated.<sup>41</sup>

However, these ideas may well be the result of misunderstanding the guilds' sensitivities regarding technical knowledge and skills. The artisans were opposed not to the use of machines but to the reduction of their own bodies into machines. While in the view of intellectual elites, knowledge and skills are already reified and instrumentalized, for guild-based artisans, they were part of their political and religious identity and related to the value of 'matter'. Consequently, the eventual decline of the guilds can be adequately understood only when including both the politico-ideological dimension of skills (and the human body) and sensitivities related to the materiality of products. On the shop floor and in economic practice, the disappearance of the guilds proceeded in a myriad of activities in which the guilds' rules concerning intrinsic value were circumvented. Instead of buying products from masters, merchants employed journeymen, apprentices or masters themselves, thereby trespassing on the production terrain reserved for masters. In so doing, entrepreneurs used hall marks obtained from deceased masters' widows or sold products, without hall marks, made by illegal workers; while retailers sold products made outside the guild framework and started to strike their own marks.<sup>42</sup>

What these strategies had in common is that the link between intrinsic value and the political body of the artisan had vanished. On a daily level of economic practice, it became increasingly difficult to guard and cultivate the links between the inherent qualities of the raw material used and the identity of the artisan – if only because of the proliferation of products which combined different sorts of raw materials, such as earthen pots with tin lids and leather shoes with silver buckles.<sup>43</sup>

### **Towards an epistemological approach?**

In my idea, then, the decline of the guilds is part of a wider cultural and ideological transformation in post-renaissance Europe. In recent decades, historians have thoroughly revised their views on the guilds' regulations. While such regulations were traditionally seen as having hindered progress and the development of the free market, they are now understood as having added to economic efficiency. Under the strong influence of new institutional economics, economic historians now argue that guilds lowered transaction costs by solving information asymmetries and defining property rights. The former was done through their hall marks and rules related to product quality; the latter refers to, among other things, the guilds' privileges as a type of patent. While this may be correct to a certain degree, the paradoxical net result is that it has become even more difficult to explain why the guilds vanished within a timespan of decades.

Should the disappearance of the artisans' 'corporations' and the reduction of their 'corpses' to a sophisticated robot be explained through the changing nature of the skills needed in a new economic and technological context? At first sight, this context appears to have changed more slowly and later than the chronology of the guilds' decline would presuppose. While the first industrial revolution was a very limited process in terms of scope

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<sup>41</sup> A state of the art in Heinz-Gerhard Haupt (ed.), *Das Ende der Zünfte: ein europäischer Vergleich* (Göttingen: Vandenhoeck & Ruprecht, 2002)

<sup>42</sup> De Munck, 'Skills, Trust'; and 'One counter'.

<sup>43</sup> *Ibidem*.

and chronology – most sectors experienced very few technical shifts before the end of the nineteenth century<sup>44</sup> – the guilds were generally abolished around 1800 and had become discredited decades earlier.

Between the sixteenth and the eighteenth centuries there may have been less visible transformations which prepared for the guilds' decline. On the one hand, there may have been processes of de-skilling, as a result of processes of specialization and a premature division of labour. In-depth research of master pieces and apprenticeship contracts reveals that from at least the sixteenth century on some apprentices learned only particular elements of the trade, even within one guild.<sup>45</sup> On the other hand, however, a more synthetic type of thought and transversal knowledge may have gradually become required.<sup>46</sup> Both product innovation (e.g., products which crossed the borders between guilds because different raw materials were involved in their production) and growing clusters of production (including subcontracting) may have resulted in the convergence of skills and 'technological interrelatedness'.<sup>47</sup> Artisans who devised and designed new products and organized production networks may thus have experienced and embodied a certain 'réduction en art', in which schematic and abstract thinking substituted for the contingent, hands-on and implicit knowledge of artisans.<sup>48</sup>

Moreover, there are indications that artisans gradually began to use more books and recipes. While prospective merchants typically learned languages and accounting through textbooks and in private schools, artisan learning typically happened at the worksite and through practice. Until the sixteenth century, most manufacturing artisans did not use books and recipes, except perhaps for models and model books (which were often brought from Italy) used in luxury trades and art workshops.<sup>49</sup> In the course of the seventeenth and eighteenth centuries, however, books may have gradually become more commonly used among artisans. Textile dyers, for instance, concluded apprenticeship contracts before a

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<sup>44</sup> See, among others, Jonathan Zeitlin and Charles Sabel (eds), *World of Possibilities: Flexibility and Mass Production in Western Industrialization* (Cambridge: Cambridge University Press/Editions de la Maison des Sciences de l'Homme, 1997).

<sup>45</sup> E.g., De Munck, *Technologies*, part I; and Bert De Munck, 'Gilding Golden Ages. Perspectives From Early Modern Antwerp on the Guild-Debate, c. 1450- c. 1650', *European Review of Economic History*, 15 (2011), pp. 221–253

<sup>46</sup> See e.g., Helen Clifford, "'the King's Arms and Feathers". A Case Study Exploring the Networks of Manufacture Operating in the London Goldsmiths' Trade in the Eighteenth Century', In David Mitchell (ed.), *Goldsmiths, Silversmiths and Bankers. Innovation and the Transfer of Skill, 1500-1800* (Stroud: Centre for Metropolitan History, 1995) 84-95; Giorgio Riello, 'Strategies and Boundaries: Subcontracting and the London Trades in the Long Eighteenth Century', *Enterprise and Society*, 9/2 (2008), pp. 243-280.

<sup>47</sup> E.g., Maxine Berg, 'From Imitation to Invention: Creating Commodities in the Eighteenth Century', *Economic History Review* 60 (2002), pp. 1-30; Maxine Berg, *Luxury and Pleasure in Eighteenth-Century Britain* (Oxford: Oxford University Press, 2005).

<sup>48</sup> For the term 'réduction en art' (i.e., the replacement of the routines of artisans by the abstraction and systematization of engineers and architects from the sixteenth century on) see: Hélène Vérin, 'La réduction en art et la science pratique au XVIIe siècle,' In Robert Salais, Élisabeth Chatel, and Dorothee Rivaud-Danset (eds), *Institutions et conventions. La réflexivité de l'action économique* (Paris, 1998), pp. 119-145; Hélène Vérin, 'Généalogie de la 'réduction en art'. Aux sources de la rationalité moderne,' In Thierry Gaudin and Armand Hatchuel (eds.), *Les nouvelles raisons du savoir : vers une prospective de la connaissance* (La Tour d'Aigues, 2002) 29-41; and Pascal Dubourg Glatigny and Hélène Vérin (eds), *Réduire en art. La technologie de la Renaissance aux Lumières* (Paris, 2008).

<sup>49</sup> Bert De Munck and Hugo Soly, 'Introduction: 'Learning on the Shop Floor' in Historical Perspective', In Bert De Munck, Steven L. Kaplan and Hugo Soly (eds.), *Learning on the Shop Floor. Historical Perspectives on Apprenticeship* (London/New York: Berghahn Books, 2007), pp 3-32.

notary and the contracts referenced transfer of written recipes. Some of these recipes were written by artisans or were at least addressed directly to artisans.<sup>50</sup>

As such, some artisans may have gradually incorporated more abstract and theoretical types of knowledge. Such a scenario accords with the ideas of Joel Mokyr, who has proposed the gradual merging of prescriptive and propositional knowledge. Given that propositional knowledge could circulate more easily and apart from the human body (through plans, schemes and written texts, etc.), this could explain why the local nature of skills and the embodied nature of knowledge withered. However, we should again be careful not to reduce this state of affairs to either changing economic and technological circumstances or the proliferation of texts and objects which contained immutable knowledge. The transformations which concern us here include changes in how knowledge is contained in the human mind and body and how both knowledge and the human subject relate to the material and social environment (including texts, instruments, and products, but also the city as a political and moral community).

According to Adam Smith, '(t)he improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs a certain expense, repays that expense with a profit.'<sup>51</sup> Skills are entirely commodified here, subject to the same laws as other factors of production. As a consequence, the local context of both the use and acquisition no longer mattered (only market factors did). The guild officials themselves, however, continued to be very much concerned about where skills were acquired. In the Southern Netherlands, systems of reciprocal freeing existed, in which a network of cities (or guilds within these cities) agreed on acknowledging each other's apprenticeship systems. An immigrant from Brussels who fulfilled his apprenticeship term there was thus exempt from apprenticeship when arriving in Antwerp and could immediately undertake the master's test. What counted here was not that a newcomer had learned, in which case a certificate of his master would have sufficed, but that he had learned in a guild context.<sup>52</sup> If the ideological context had not mattered, even the local master's test would certainly have been sufficient.

From at least the end of the seventeenth century, this system grew obsolete, partly because the guild officials became distrustful of immigrating entrepreneurs – who had myriad of strategies to circumvent the system. In the long run, guilds even started to define immigrants differently from about mid-seventeenth century on. In the Antwerp guild of the diamond cutters, among others, 'foreign' no longer referred to 'originating from outside the duchy of Brabant' but to 'originating from outside Antwerp'. While this could simply be understood as a growing exclusiveness, things would seem to have been more complex. The Antwerp coopers started to distinguish native and foreign apprentices from 1646 on. Concerning the masters, however, a distinction emerged between those who had learned in Antwerp and those who had learned elsewhere.<sup>53</sup> Guild boards thus appear to have

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<sup>50</sup> Janneke Tump, *Ambachtelijk geschoold. Haarlemse en Rotterdamse ambachtslieden en de circulatie van technische kennis, ca. 1400-1720* (Onuitgegeven proefschrift, Vrije Universiteit van Amsterdam, 2012), hoofdstuk 7.

<sup>51</sup> Smith, *An Inquiry*, Book II, p. 217.

<sup>52</sup> Raoul De Kerf, 'The Early Modern Antwerp Coopers' Guild: From an Intended Contract-Enforcing Organization to an Empty Box', in Marco Belfanti, Karel Davids and Bert De Munck (eds), *Cities as Centres of Technological Innovation in Late Medieval and Early Modern Europe: Northern Italy and the Low Countries Compared*, forthcoming; and Bert De Munck and Raoul De Kerf, 'Cities as Centres of Innovation in the Spanish Netherlands', in Dupré et.al., *Embattled territory*, forthcoming.

<sup>53</sup> *Ibidem*. \*check gold and silversmiths\*

substituted the local urban context for the broader corporative context. In so doing, they reacted against the inroads in the corporative system from administrators and policymakers at the central level (in Brussels), who were very much influenced by French physiocratic and Enlightenment thinking. Before they started to remove the guilds' entry requirements altogether, they granted 'dispensations of apprenticeship' to immigrant entrepreneurs – thereby abolishing the link between skills and local environment the guilds had forged.

Underneath the laissez-faire discourse one can thus find implicit ideas in which embodied skills had become reified and isolated from the physical person and the social context. While current historiography connects this to the emergence of meritocratic ideas, there may be more at stake. In my view, it is also related to changing views on product quality which may, in turn, be related to epistemological shifts. This is perhaps best illustrated by the guilds' hall marks. Collective quality marks in the seventeenth century typically merged three types of references: reference to an individual master was often contained within a mark which referenced both the city (as a political body) and intrinsic value (as something material). Finished products in the Antwerp pewter industry, for instance, were often stamped with an image of the Antwerp fortress. This quality mark referred to the intrinsic value of the piece (the origin and purity of the tin) but also encompassing the master's initials. Another typical sign in this sector was the Tudor Rose, which referred to the English origin of the tin used but also included references to both the master (usually his initials) and the coat of arms of the city (such as an image of the Antwerp hand).<sup>54</sup> In the nineteenth century, however, this visual connection between artisan, city and intrinsic value had disappeared. Product marks referred to firms and family business apart from references to locality (such as 'made in...') and references to intrinsic value (like 'English blocktin'). The connection between product quality and the political 'quality' of the artisans had thus become obsolete.

While this discursive transformation set in long before the abolition of the guilds (which in the Southern Netherlands took place in 1795), it may have been part of a broad and fundamental epistemological shift. In the 'objectification' of product quality, references to intrinsic value and the status of the artisan were replaced with either an external discourse on product quality in trade cards, catalogues, leaflets, and the like, or a fashion system in which product value was the result of the product's place among other products. In my view, this is reminiscent of Michel Foucault's rupture between the Renaissance episteme and the classical episteme, which he situated around the mid-seventeenth century.<sup>55</sup> Until the first half of the seventeenth century, knowledge was accessible directly through words and things, which were considered to contain the ultimate religious truth (as if God had left his 'signature' on each of them during Creation). The fundamental principle was resemblance: things and words resembled what they meant, so as money meant wealth in economic theory because it resembled wealth.

At first sight, it may seem farfetched to link this episteme to intrinsic value, but besides a striking chronological overlap there are also interesting similarities between the subsequent classical episteme and both fashion as a new system and the new modes of communicating about product quality. According to Foucault, during the course of the seventeenth century truth stopped being arrived at through 'resemblance'. Knowledge was

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<sup>54</sup> De Munck, 'The agency of branding', forthcoming.

<sup>55</sup> Michel Foucault, *Les mots et les choses, une archéologie des sciences humaines* (Paris, 1966); and *L'archéologie du savoir* (Paris, 1969). For a foucauldian analysis of economic thought, see Lara Vigo De Lima, *Foucault's archaeology of political economy* (Basingstoke, 2010).

no longer produced through the interpretation of God's signs but rather came about through man-made orders of signs. Basically, the principles of similitude and resemblance were replaced by the principle of comparison and difference. The value, meaning and identity of objects resulted from 1) ordering them and visually observing differences and 2) discourses in which thoughts and ideas are represented. Either way, resemblance was substituted with representation as a basic principle, as a result of which money could 'represent' wealth apart from its intrinsic value in economic theory and practice.<sup>56</sup>

From this perspective, the end of the *ancien régime* did bring about a new classificatory system in which a society of orders was replaced with a meritocratic order because of technological, economic or political transformations.<sup>57</sup> Yet, these transformations were themselves embedded in an epistemic shift in which the value and meaning of both products and producers had become the result of external systems of meaning. In Enlightenment discourse, rules related to product quality were unnecessary because customers could assess product quality themselves.<sup>58</sup> While in economic terms this evolution has been called a shift from an 'économie de l'offre' to an 'économie de la demande'<sup>59</sup>, it should be noted that the latter presupposes a Cartesian subject who attaches meaning and value to an object visually and autonomously. In the same vein, meaning and value are attached to labour and skills, whereas the persons embodying them have become detached from both their products and the political, ideological and religious context in which they work. As such, the decline of the guilds can easily be linked to Bruno Latour's 'purification process,' in which matter became dead and passive, subject only to the laws of nature and the rational and visual observation of individuals, while subjects created the myth of being detached from the fetishizing effects of objects.<sup>60</sup>

### **Preliminary conclusions**

Essentially, the nature of knowledge communities depends on the nature of knowledge and the technology by which it can be shared. While this is clearly the case with open-source software, the medieval and early modern guilds can also be addressed from this perspective, although it is not sufficient to say that the artisan's skills were embodied, or particular (in contrast to being abstract and universal). Guild-based artisans also connected a social and communal dimension to their skills. Technical knowledge could circulate in embodied form through migration, but was always tied to the local context through apprenticeship and rituals. While newcomers had to prove their familiarity with local standards and quality, the link between knowledge and community was forged in face-to-face interactions and on-site learning. Skills were thus local and collective, unlike today, when knowledge communities can be forged, for example, through the internet.

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<sup>56</sup> A pioneering attempt to connect Foucault's archeology of knowledge to the emergence of political economy is Lara Vigo de Lima, *Foucault's Archaeology of Political Economy* (London: Palgrave Macmillan, 2010).

<sup>57</sup> Steven L. Kaplan, 'Social Classification and Representation in the Corporate World of Eighteenth-Century France: Turgot's "Carnival"', In Kaplan and Koeppe, *Work in France*, pp. 176-228; Kaplan, *La fin*.

<sup>58</sup> See e.g., Philippe Minard, 'Micro-economics of quality and social construction of the market: disputes among the London leather trades in the eighteenth century', *Historical Social Research* 36/4 (2011) 150-168 (Special issue on 'Conventions and institutions'), pp. 150-168, esp. p. 155.

<sup>59</sup> Philippe Minard, 'Les corporations en France aux XVIIIe siècle: métiers et institutions', In S.L. Kaplan and Ph. Minard (eds), *La France, malade du corporatisme? XVIIIe-XXe siècles* (Paris, 2004) 39-51.

<sup>60</sup> Bruno Latour, *Nous n'avons jamais été modernes. Essai d'anthropologie symétrique*. (Paris: La Découverte, 1991). For an introduction to the work of Bruno Latour, see: Bruno Latour, *Reassembling the social. An introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005); and Graham Harman, *Prince of Networks. Bruno Latour and Metaphysics* (Melbourne: re.press, 2009).

The next question, then, is how to frame this with current conceptual tools such as particular versus universal, or immutable versus mobile. To start with, the guilds' attitudes and sensitivities cannot be reduced to privileges, standardization, and trade secrets, as Enlightenment thinking had it. What changed at the end of the *ancien régime* was not the direct result of laissez-faire economics and technological transformations. Nor can it be summarized through the proliferation of immutable mobiles such as texts and instruments. Looking at it through the lenses of STS and ANT, it becomes clear that both transformations were part of a deeper rift in which the perception of both codified knowledge and the embodiment of knowledge in the human mind and body transformed; this transformation was itself a result of broader epistemological transformations in which changing attitudes towards skills, changing consumer preferences and changing intellectual and political sensitivities were connected.

The technical knowledge of guild-based artisans themselves was part of a collective identity and habitus, in which their bodies and skills had a political and religious dimension. What changed at the end of the *ancien régime* was not only the knowledge acquired and used by artisans, but the very nature of knowledge, including the knowledge inherent in human minds and bodies. What ultimately emerges is not only a type of useful knowledge in which the distinction between prescriptive and propositional knowledge has disappeared, but also the superiority of intellectual labour over manual and embodied labour. Moreover, both intellectual and manual labour became, in a way, delocalized. In the guilds' discursive practices, the local character of the masters' skills was predicated upon the 'intrinsic value' of both matter and the body of the artisan, which were linked to the city in a material as well as symbolical way. The Scientific Revolution and Enlightenment thinking changed this, in that they induced processes in which the masters' skilled bodies became a type of tools or instruments (rather than political 'corpses'). While technical knowledge became increasingly written down and skills gradually included schematic planning and design, the body of the artisan experienced a process of abstraction, alienation, and objectification.

Linking this to the great divergence and Western dominance, it would seem that the concept of immutable mobiles needs further theorization. What differentiates western from non-western knowledge formations is that the former have the shape of a network 'transporting back and forth immutable mobiles to act at a distance'. As a consequence, Latour actually substitutes the ability to form networks and make allies for the cognitive and cultural factors of Western dominance – allies not to be understood in a geo-political sense, but including such technoscientific (non-human) actants as maps, navigation instruments, collections, and innumerable kinds of texts.<sup>61</sup> The subsequent question is how to relate this to the historical process of abstraction and disenchantment in European or Western history. My findings suggest that a careful return to both the historical sociology of Weber and the archaeology of knowledge of Foucault could be worthwhile. While the alienation and objectification of the human body is reminiscent to Weber's and others' 'disenchantment of the world', the approach to skills and labour by Enlightenment thinkers may fit Foucault's ideas about discipline. Last but not least, Latour's ideas on purification processes may be interesting as well. Combining, in a way, Weber's disenchantment and Foucault's episteme approach, they nicely summarize the changing subject-object formations experienced by the guild-based artisans examined in this article.

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<sup>61</sup> Amit Prasad, 'Science in motion: what postcolonial science studies can offer', *Electronic Journal of Communication Information & Innovation in Health (RECIIS)* 2/2 (July-December 2008), pp. 35-47. DOI: 10.3395/reciis.v2i2.187en. Quote in Latour, *Science in action*, 229.