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## SECTION III REGIONAL ISSUES

### BETWEEN WAGE LABOR AND VOCATION: CHILD LABOR IN DUTCH URBAN INDUSTRY, 1600–1800

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#### Introduction

Françoise Loeram was only twelve years old when the Leiden draper Piere Blisijn employed her to spin for him for two years in 1640. In exchange, the girl received food, lodgings and a set of clothes, and at the end of her contract the sum of 15 guilders.<sup>1</sup> Françoise was not an exceptional case; in the seventeenth century many thousands of children worked in the Leiden textile industry. Nevertheless child labor is usually associated with the rise of industrial factory labor in the nineteenth century. This interpretation has dominated, because only from that time contemporaries started to perceive large-scale child labor as a social problem. Degrading conditions in the factories, such as long working hours, physically heavy labor and miserable working circumstances caused opposition among parts of the bourgeoisie and representatives of various political tendencies. In the course of the nineteenth century, moral indignation ultimately led to protective legislation in the area of child labor.<sup>2</sup>

Historical research on child labor has until now focused mainly on the industrial era. Because the effects of industrial factory labor were most visible, historians through most of the twentieth century considered child labor a 'social problem of industrialization'. Moral condemnation played an important role in this interpretation.<sup>3</sup> Influenced by new ideas about the course of the Industrial Revolution, and by attention given to the 'family economy', historians in recent decades have modified the dominant interpretation. They now recognize that child labor occurred not just in factories, but existed on a large scale in—for example—agriculture and pre-industrial crafts; also prior to industrialization, child labor was very common.<sup>4</sup>

In their well-known overview study, Jan de Vries and Ad van der Woude define the early modern Dutch Republic as 'the first modern economy'. Already in the pre-industrial period, the Dutch economy was in their view characterized by high productivity and a great demand for labor. De Vries and Van der Woude assume that large numbers of children helped to meet this demand. To a considerable degree, they worked in export industries that were organized in an early capitalist fashion, such as textiles, pipe-making and pin-making.<sup>5</sup> Leo Noordegraaf and Jan Luiten van Zanden likewise suggest that child labor may have been of great importance for the economic growth of the Dutch Republic.<sup>6</sup> Nevertheless little research has been done about child labor in the pre-industrial period

in the Netherlands. Only a few historians, and quite some decades ago, analyzed the subject. Quite similar to the traditional international literature they emphasized the exploitation of children by capitalist employers.<sup>7</sup>

However, by judging the immoral exploitation of children as an effect of the (early) capitalist production system, the whole story of child labor is by no means told. Recently historians have pointed to the importance of 'survival strategies' of families or households.<sup>8</sup> To survive, it was essential for large groups in society that all family members contributed to the family income. The earnings of children were therefore in many cases indispensable.<sup>9</sup> The authorities moreover had a vested interest in child labor, because it reduced the need for poor relief.<sup>10</sup> In the seventeenth-century Dutch Republic, the labor intensive industries offered plenty opportunities for poor children to work. However, when the economic trend declined in the eighteenth century, it was presumably exactly these groups who first suffered from unemployment and increased poverty. In this light, we might also understand initiatives to set up workhouses for the poor in the second half of the eighteenth century.<sup>11</sup> Of course, these projects were undertaken in many European countries in this era, inspired by new ideas about the approach of poverty by *Philosophes* of the Enlightenment.<sup>12</sup> But obviously, these initiatives also served to both discipline and absorb the large numbers of unemployed laborers and their children after the economic prosperity of the Dutch Republic waned in the course of the eighteenth century. The Republic's economic prosperity in the seventeenth and decline in the eighteenth century make it an interesting case study for the development in the work of children over this long period of time.

Next to the economic importance of child labor for both families and the wider economy, also the educational aspect of children's work deserves attention. Since the end of the 1960s, economists have emphasized the importance of the formation of 'human capital'. Investing in education, training on the work-floor, or general development would, according to this theory, provide both the economy and the individual with long-term advantages. It is important to recognize that children might learn skills and gain experience during their work from which they benefited for the rest of their lives.<sup>13</sup>

An analysis using such broader perspectives and taking into consideration the economic importance of child labor for families and the wider economy, and the educational aspects, can yield new insights about the significance of child labor in the early modern era, and the ways in which its appearance and organization changed throughout this period. For this purpose, however, a number of factual questions need to be answered first. At what age exactly did children begin to work, what did they earn, where did they live, and were arrangements made about the skills to be learned? In answering these questions, we aim to establish how we should classify the activities of children: as wage labor pursued to obtain indispensable income, or as schooling for a future occupation? In other words, should child labor in early modern times be assessed as 'work' or as 'vocational training'? In this article about child labor and industry in various towns in the Dutch Republic (Leiden, Gouda, Tilburg, Zwolle and Utrecht) it will be shown that the significance of child labor as wage labor or alternatively vocational training strongly varied with age, sex and social background.

### Children in the early modern urban labor market

In studying child labor, it is appropriate first of all to clearly define the terms 'child' and 'labor'. Whereas nowadays the International Labor Organization (ILO) uses the limit of 15 years, early modern criteria for the definition of a 'child' were not so clear-cut.<sup>14</sup> The age at which children legally became adults in the Dutch Republic varied from 21 to 25 years. Another criterion was marriage without required permission from parents, which boys were able to do at age 25 and girls at age 20. The age until which orphanages accepted orphans likewise varied. Children older than 17 were not usually placed in orphanages; apparently they were expected to look after themselves by then. For many children work had already taken the place of education well before that time.<sup>15</sup>

In this article, it will be shown that the phase from twelve to fourteen years marked an important turning point, but there are also many indications that children of that age were not yet considered adults. Thus, they usually received adult wages only when they were older than 20. Research reveals that one was regarded an adult worker only between age 21 and 24.<sup>16</sup> Especially the valuation of youths as workers therefore seems to have played a role in the definition of adulthood. For this reason we have studied a group of boys and girls mainly up to age 21.

The second definitional question is "What is labor?". In recent decades, more and more historians recognize that labor is more than formal, paid work. Precisely in research on women's and child labor, the importance has been shown of all kinds of less official and (therefore) less documented kinds of work, in the form of production or services in informal circuits, for commercial or domestic use, which moreover often were unpaid, or paid in kind.<sup>17</sup> Be that as it may, we focus here especially on labor that children performed for non-domestic use, paid in cash or in kind either to themselves or to their guardians. This choice is due on the one hand to the visibility of these kinds of work in the sources. On the other hand, because of our focus on the distinction between work and education, the analysis of 'production for own use' is of less interest. The boundary between labor for pay or turnover and apprenticeship nevertheless remains vague since apprentices often yielded an income, and one could learn from working for pay. It is precisely the boundary between the two which is questioned in this article.

Although scarce, there are sources containing information about early modern child labor. In the first place, the archives of orphanages provide information about activities and earnings by orphans. Orphans, however, were also in the early modern era a minority, and it is an open question how representative their labor was. For that reason, we also include sources about non-orphans, such as apprenticeship registers from the textile industry and the archives of the export industry of pipe making. Another category of sources, archives on poor relief and archives on workhouses and work schools, provide insight into the work that children did to supplement the income of poor families. These sources also say something about the education of children: to what extent did the children learn a particular trade in the 'work and spinning schools' which were established (especially) in the second half of the eighteenth century?

Since child labor is usually not registered, it is difficult to assess exactly how many children worked. However, it is possible to give a sketch of the extent

of child labor. We do know that in seventeenth century Leiden, thousands of children were put at work either by their parents or by orphanages in the textile industry. In Tilburg in 1810, more than one quarter of the children younger than 18 had a recorded occupation. Therewith, they formed 18% of the entire labor force.<sup>18</sup> Among the poor, the proportion of children in the labor force was even greater: in seventeenth-century Zwolle and Delft they comprised about a third of those registered for poor relief with an occupation.<sup>19</sup> They worked in all kinds of sectors. Little is known about child labor in agriculture. Children from farmers' families had less often a recorded occupation, probably because helping parents on the farm was so obvious that it was not mentioned as work.<sup>20</sup>

Many children worked in the services sector. Sometimes they were active in the informal sphere, running errands or working as shop assistant.<sup>21</sup> Like farming, this work often occurred in a family context.<sup>22</sup> Another large employer in this sector, especially for orphaned boys, was the Dutch East India Company (the 'VOC'). An unknown number was hired as sailors.<sup>23</sup> Also the number of girls working as maidservants must have been a large, and possibly even growing, group. Around 1800, becoming a servant was one of the few employment opportunities for Leiden orphan girls apart from spinning, sewing wool and linen and knitting.<sup>24</sup> Many young adults worked in domestic services. In other services, children only sporadically worked, at least according to official documents.<sup>25</sup>

By far the most children worked in industry, in particular in pre-industrial textile production. Thus we find in the Leiden textile industry some 8,500 registered working children between 1639 and 1697.<sup>26</sup> Furthermore, the Leiden orphanage committed hundreds of children to employment during the seventeenth and eighteenth centuries, the majority in industry.<sup>27</sup> The Tilburg census reinforces this picture. More than 90% of all working children we find in the industry sector.<sup>28</sup> The same pattern is visible among the poorest: in Delft, 70% of the children of paupers worked in industry and in Zwolle 85%.<sup>29</sup>

Because of its importance for child labor, and the relative visibility of working children in this sector, in this article we will focus on the industrial sector. We will discuss the ages at which children started work and the work they did, and pay attention to both their living and working conditions. Special attention is given to differences between boys and girls in this regard. In conclusion, we attempt to characterize child labor in the early modern period: can we define this child labor especially as 'labor' for pay, or should we rather interpret it as preparation for a future 'occupation'?

## Starting work

The ages at which children in the Dutch Republic began to work varied. The girl Lysbet Volders was six years old when in 1614 she entered service with her boss Israel Bouten, but she was an exception among the 300 Leiden orphans for whom an age is specified. Two seven-year old boys went knitting stockings and reeling respectively, but most children started work for a boss at eight or nine years.<sup>30</sup> This was also the normal minimum age for orphans in other cities. Evidence from orphanages all over the Dutch Republic, in cities such as Amersfoort, Doesburg and Gouda, shows that boys and girls started working at age eight or nine.<sup>31</sup>

Not all orphaned children met the same fate, however. First of all, there seem to have been distinctions according to social background. Orphans who had already been hired out prior to losing their parents were employed in their previous trade, regardless of their young age.<sup>32</sup> The average age of orphans hired out by the Amsterdam almoners was also younger, as for them there were no objections to put children to work in silk winding at the age of seven.<sup>33</sup> This difference might be explained by the social distinction between the almoners' orphan care and the burghers' orphanage which existed in some Dutch towns. In Amsterdam, as in Utrecht and in Gouda, admission to the *Burgerweeshuis* was reserved for children of burghers, residents who by birth or purchase had the burghers' right, whereas the almoners cared for (often poorer) children whose parents did not hold full citizenship status, such as migrants, or residents without burghers right's.<sup>34</sup> The division between burghers and residents reflected an important social division within early modern urban society, as, for example, citizenship was required for guild membership. It is likely that this also influenced the policy of training and work placements of orphans and explains why orphans who fell under the responsibility of almoners were put at work at a younger age. However, the division between citizens and non-citizens did not exist everywhere, as for example the Leiden orphanage admitted children irrespective of their parents' official citizen status.<sup>35</sup>

Information about the age of those children who still had their parents is scarce. The administration of the Leiden cloth industry seldom mentions the age of boys and girls who were hired out by parents or relatives to a draper or weaver. About Michiel Gerritse, who in 1654 was put to work with a boss to learn spinning, it was noted that he was 'only 9 years old'. The fact that his age, and that of a handful of ten- and eleven-year old children, was specifically mentioned implies that it was unusual for apprentices to start this young. Most probably the normal starting age for children from a family was about twelve years, i.e. three to four years older than for orphans working in the seventeenth-century Leiden industry.<sup>36</sup>

For children of the poor, however, starting young was not extraordinary. Some of the families receiving poor relief in seventeenth-century Zwolle let their children work from ages two or three in button making, although they were an exception. Children from the poor began working on a large scale from age six. That their work served to supplement family income is illustrated by the fact that families with working children received significantly less poor relief than single adults or childless couples.<sup>37</sup>

Next to social variations, there were differences over time. There are indications that the minimum age for orphans in Gouda was lower in the seventeenth century than a century later.<sup>38</sup> And at the end of the eighteenth century, children from the Leiden orphanage were on average a little older still. Girls were hired for some craft between the ages of twelve and thirteen, boys between the ages of twelve and fourteen.<sup>39</sup> This might be explained by the improvement of general education towards the end of the eighteenth century. At age twelve, orphans had completed their schooling and a new phase began in their lives: it was time to learn a trade.<sup>40</sup>

Experiences were different for children of the poorest families, who probably did not receive as much general education in the eighteenth century. The official

purpose of the workhouses or spinning schools that were established in the second half of this century in several towns was to train children from poor families in a trade—usually spinning—and to stimulate urban industry. The underlying thought was that one kept the ‘idle’ poor from the streets, and unburdened the poor relief system by letting children (and sometimes adults) work for little pay. This happened from a young age. The children working in the Leiden workhouse established in 1796 could be very young. The five-year old Betje Kram who started working in 1799 topped the bill. The largest influx of children occurred when girls were eight or nine and boys were nine or ten years old. Girls stayed in the workhouse longer. While up to the age of 16 or 17 years there were approximately the same number of boys and girls, the number of boys declined rapidly after this age. The possibility of finding other work apparently increased with age for boys, as will be shown in the following section.<sup>41</sup>

The deacons of the Utrecht Dutch Reformed Church established a spinning school in 1777 for “children [ . . . ] whose parents live from spinning, weaving, or other low crafts.”<sup>42</sup> The project was therefore explicitly aimed at children from the lowest social classes. From 1779 they did not accept children older than ten years, because they apparently left school too soon in order to find employment with a free spinning boss, for a higher wage.<sup>43</sup> The deacons apparently had no objection to putting children under the age of ten to work. In Gouda, there were no objections either, as the children who worked 13 hours per day in the spinning mills, established in 1780 to prevent beggary and promote industry, were between eight and ten years.<sup>44</sup>

It is no surprise that the age at which children started work depended strongly on their social background. In the seventeenth century, children whose parents were both still alive and who were not dependent on poor relief, were on average the oldest and entered the labor market between 12 and 14 years old. More often than orphans they received vocational training, although, as will be shown, there were important differences between the sexes in this regard. Both in the seventeenth and the eighteenth century, children of poor parents contributed to family income from a very early age and were usually younger than ten years when they began to work. Child labor for this group was an essential element in the repertoire of survival strategies and their employment was very much supply driven. Labor-intensive urban export industries gladly used the labor of young children from the age about eight or nine, both orphans and non-orphans, but this applied especially to the seventeenth century. In the course of the eighteenth century, when the export trades had diminished due to economic decline, for them alternative labor opportunities were sought by establishing workhouses. Eighteenth-century orphans, either from poor families or not, were probably a little better off than their non-orphaned counterparts. In this century, orphans ideally made the transition to work and learning a trade around their twelfth birthday, although poorer orphans were even then usually younger.

## Work activities

In Leiden during the first half of the seventeenth century, by far the most orphaned children worked in textiles. A sample from the orphanage administration of putting children to work between 1607 and 1623 shows that 84% of

the boys (n=442) and 73.5% of the girls (n=315) worked in textiles.<sup>45</sup> More than 20% of the girls worked in the garment industry, and only four as house-keepers and two as button makers. Among boys the variation *outside* the textiles sector was greater: 108 of them worked in 20 different industrial occupations, including tailors and hat-makers, woodworkers and button makers, bookbinders, stonecutters, carpenters, leatherworkers and shipbuilders. It is significant that boys did not enter these higher-skilled occupations before they were ten years old, and usually only after they turned fourteen.

These data indicate a marked division of labor by gender among Leiden orphans. As the children became older, this division became more pronounced. For boys below age fourteen, only six occupations outside the textile industry were listed, and for girls only two. Boys older than fourteen worked in fifteen occupations outside the textile industry, whereas there was only one other branch for girls: the garment industry. With rising age, boys gained access to a wider spectrum of occupations, whereas girls did not.

Within the textile industry most children engaged in low-skill activities. More than 40% of all boys employed in textiles engaged in reeling, a lower-skilled job that was mainly performed by boys in the age group of seven to thirteen years. Another large group of boys (34%) did relatively higher-skilled work: serge or fustian weaving, but they were in contrast usually older than 14 years. Nearly 7% of all the boys working in textiles spun and close to 5% knitted. In addition some boys worked at various activities such as twining, wool separating, linen preparation and dry shearing. Again the variation for girls in textiles was smaller: 63% of them spun, 35% knitted and the last 2% worked as lace maker or weaver. Within the textile industry, boys mostly gained access to higher-skilled occupations from the age of fourteen. From this age onwards, only 21% of the boys did low-skilled work: reeling, spinning or carding. On the other hand, nearly all girls over fourteen employed in textiles stayed with low-skilled activities: spinning and knitting.

As mentioned, in the seventeenth century thousands of children who were not orphans were put to work in the Leiden textile industry by their families. Most of them contracted for one or more years. Samples for 1638–1641 and 1650–1656 demonstrate that most girls were spinning (see Table 1). Whereas fewer girls were employed in the second sample, i.e. 198 in seven years as com-

Table 1  
Boys and girls in the Leiden cloth industry, 1638–1656

Activities	1638–1641				1650–1656			
	Boys		Girls		Boys		Girls	
Spinning	475	71%	167	90%	551	55%	182	92 %
Carding	14	2%	0		17	2%	1	0.5%
Weaving/cloth making	156	23%	0		398	40%	0	
Burling/picking	1	0%	12	7%	2	0%	13	6.5%
Other	24	4%	6	3%	31	3%	2	1 %
<b>Total</b>	<b>670</b>		<b>185</b>		<b>999</b>		<b>198</b>	

Source: RAL, Archief Hallen, inv. nrs. 127a, 127b, 127j



pared with 185 in four years, the number of boys employed remained the same. In a short period of less than fifteen years, relatively more boys began to work as weaver or linen worker and fewer as spinner, thus gradually performing higher-skilled work. Possibly the educational aspect increased in importance for boys in the textiles industry.<sup>46</sup>

The activities of poor children in Zwolle differed from the children in Leiden. While some 80% of all working children worked in industry, the percentage in textiles was less than 27%. By contrast more than 55% of all adults worked in textiles. These were mainly women, who were thus overrepresented in the poor relief records.<sup>47</sup> Most children, and especially the young ones, worked as button makers: 42% of all boys and more than 22% of all girls. Until they turned fourteen they probably had few alternatives. In the age category of ten to fourteen years, girls worked in ten different occupations and boys in eight. But from age fourteen, boys were represented in many different occupations, both lower-skilled and high-skilled trades. Additionally, a significant number of these boys were soldiers. Girls could find work only in low-skilled activities, such as button making and spinning, washing and pin-making. Even among the poorest, we see that the division of labor by gender occurred around the age of fourteen.<sup>48</sup>

In the eighteenth century, the work possibilities of Leiden orphaned girls changed, but the spectrum of possibilities remained limited. Girls were placed in the knitting room as soon as they were able to do some manual work, with a dual aim: to learn the skill that was thought to be useful to the girls later in life, and to earn some money in otherwise wasted hours. The girls were shifted to other tasks as soon as this was possible. The healthiest and most 'orderly' were placed in the linen room.<sup>49</sup> The wool room provided work to those girls who could not be used elsewhere, either because they were handicapped, too clumsy or had poor eyesight. Others stayed in the knitting room, performed housework indoors, or became maidservant.

The gendered division of labor among orphans in eighteenth century Gouda expressed itself also in the distribution across occupations (see Table 2). Where-

Table 2  
Occupational distribution of orphans, Gouda 1753–1759

Occupation	Boys	Girls
Pipe making	18	6
Carpentry	1	
Cooperage/tub filling	2	
Basket making	1	
Chair making	1	
Bodice making	1	
Dressmaking/tailoring	4	
Sewing		12
Shoe making	2	
Metal forging	1	
Copper work	1	
Unknown	3	2
<b>Total</b>	<b>35</b>	<b>20</b>

Source: SAHM, Archief Weeshuis Gouda inv.nr. 580

as orphaned boys worked in a variety of occupations, options for girls were restricted. Moreover, many girls were probably used for household activities within the orphanage. Pipe making was an industry that employed both boys and girls. Within this trade, the work was also divided according to age and sex. Polishing and smoothing of the pipes were typically women's work. The forming of the pipe-head in a vise was reserved for boys and men as guild regulations explicitly prohibited girls and women to work at the vise. Until the age of twelve, boys and girls "however young they might be" did the same work: they rolled and polished pipes. Boys who wanted to continue in the profession had to roll and glaze until they were twelve.<sup>50</sup> From age twelve to fifteen, they were allowed to smooth 'bad' pipes. From the age of fifteen, they were permitted to smooth fine pipes. Girls were only allowed to polish pipes after they turned eighteen. This division of labor stayed unchanged in the eighteenth century city pipe factory.<sup>51</sup>

Just as elsewhere, in Tilburg in 1810 the opportunities for boys expanded gradually as they grew older. Between the ages of three and nine boys and girls did mostly the same kind of work: 96% were employed in spinning. From age ten to thirteen more boys began to weave and job opportunities outside the textile industry increased. Significant changes occurred from age fourteen. Spinning remained the most prevalent occupation for boys until age eighteen (43%), but they could be found in 16 other occupations as well. Girls only had two alternatives outside the textile industry: they became seamstresses (3%) or maidservants (more than 22%). From the age of eighteen, the labor market for boys resembled that for adult men. For girls the options in all age categories remained more or less the same. Being a maidservant was a likely alternative for older girls. More than 40% of the girls from age eighteen to twenty-one worked as a servant.

The activities of children depended on sex, age and the urban economic structure. Young children, especially orphans and the children of the poor, performed wage labor on a large scale in labor-intensive (export) industries, which were very important in the Dutch Republic in the seventeenth and first half of the eighteenth centuries. Remarkably, the child labor in the various late eighteenth-century employment projects for the poor resembled the activities in these—by then decayed—export industries. As children grew older, a division of labor according to gender emerged, which with the increase in age only became more marked. While the range of occupations in which girls worked remained limited, the occupational possibilities for boys increased enormously from the age of fourteen.

### **Live-in, or living elsewhere?**

In the difference between work and vocational training, the living situation of children might also play a role. Allowing working children to live with their employer fits with the tradition of a 'learning period', which apprentices spend in the home of their master. If children brought home a wage, it is more probable that their labor was regarded primarily as an important source of income.

The phenomenon of live-in apprentices was less common in the Netherlands than in some neighboring countries.<sup>52</sup> Some orphans were not accommodated in the orphanage, but placed directly with private individuals, where they usually

also worked.<sup>53</sup> Orphans placed in orphanages however usually continued to live there when they began to work. For only five of the 1,131 job-placements of the Leiden orphanage special arrangements were made for food and lodgings. Four of these concerned children from outside the orphanage; presumably these were children who had no other place to stay.<sup>54</sup> Also most if not all orphaned boys in Gouda returned to the orphanage after work, as is evident from the instruction to the matron to leave the door open late in the evening, for boys returning from their work.<sup>55</sup>

The children cited in the administration of the Leiden textile industry on the other hand, did have family, but were nevertheless in the majority living with their employer. More than 70% of the boys and nearly 80% of the girls lived with their employer in the period 1638–1641. Between 1650 and 1656 these percentages were lower, between 45% and 50%. It appears that children more often had a 'live-in' arrangement if they were engaged in spinning or performed other low-skilled activities. Children who wove were rarely paid in the form of food and lodgings, but received piece rates or weekly wage. This could explain why many more girls than boys had live-in arrangements, and why the number of live-in arrangements declined over time—after all, the number of girls and spinners diminished in the second period.<sup>56</sup>

Of all working children in Tilburg in 1810, about 25% lived with another family. From age 14 fewer and fewer working children lived at home. The percentage of boys between 14 and 17 years old living at home was greater (38%) than the percentage of girls of the same age (32%). From the age of 18 more working women lived in (53%) than their male counterparts (41%). This is explained by the nature of their work: circa two-thirds of all girls living in were maidservants and most of them were older than 18. Another group of girls living at home worked in industry, the largest proportion (90%) in textiles, usually as spinner, sometimes as wool picker. Live-in girls thus performed lower-skilled work in textiles, or worked as maidservants.<sup>57</sup> Possibly this was regarded as a good preparation for later life as married woman.

Nearly 30% of the 'live-in' Tilburg boys worked as domestic servant, and 50% in industry. Only half of the latter worked in the textile industry, while the other live-in boys had a variety of occupations, for example as apprentice of a glassmaker, clog maker, baker's servant or shoemaker's servant. These boys were therefore often trained in their 'host family'. There was only one boy living at home who was registered as journeyman. Among the live-in boys there were some 30 servants, who were being trained in various trades such as glassmaker, carpenter, tailor, baker or miller. These apprentices usually lived in the house of their master who engaged in the same trade. Live-in girls by contrast often worked as seamstress or spinner in a family where the housewife had no occupation. It is unlikely that they were being trained; the activities of these girls are probably better defined as wage labor.

The significance of the living situation of working children is not clear-cut with regard to the distinction between training and work. Orphaned children stayed in the orphanage, other children in the Leiden textile industry usually did live with their employer. The custom of learning a trade, while living with a craftsman and his family, occurred probably more frequently in some places than others. It is evident that the type of work done—as in the case of the domestic

servants and housemaids—played a role. This gave rise to important differences between boys and girls with regard to living arrangements.

### Wages

The level and method of payment can also help us in characterizing child labor as either wage labor or vocational training. Payment occurred in different ways. The wages of Leiden orphans always consisted of money (usually a weekly wage) and sometimes also partly of goods, such as a new hat or some clothes. Boys and girls received on average respectively 12.9 and 9.3 *stuivers* per week, measured across all industrial occupations, less than half of the average day wage of a male carpenter, who earned 24–28 *stuivers* around 1650. To survive, the average family at that time required an average of 77 *stuivers* per week.<sup>58</sup>

Especially among boys, wages varied considerably. Wool carding and reeling paid rather badly at an average of 8 and 9.2 *stuivers* per week. Button-making (14) and fustian work (14.8) were in the middle range, just as serge weaving in which there were large differences in wage rates, from a minimum of 8 to a maximum of 32 *stuivers*. Well-paid occupations employing quite a few boys were hat making (19), dry shearing (20.5), stone cutting (21.3), dyeing (24) and leather working (29.5). Girls were not to be found in these occupations, and the range of their wages was narrower. A lone female serge worker and a weaver recorded earned respectively 15 and 23 *stuivers* a week. Other averages were between 7.2 *stuivers* for sewing and 12.3 *stuivers* for a combination of spinning and housework. The reason that the averages we can calculate for boys and girls were not very different is that a significant number of boys worked at reeling, which paid rather badly.

Our analysis of the correlation of age and wage level showed that this was rather strongly positive if we look at all boys and girls. However, a breakdown of different work activities provides a more differentiated picture. Among boys we found that the correlation between age and wage level in weaving was significantly weaker than in low-skilled work such as reeling. In spinning (likewise considered low-skilled) there was a noticeable gender difference. Here we find a stronger correlation between age and wage-level for girls, while the correlation is weak for boys.<sup>59</sup> When individual wage data are examined, it appears that boys aged 12 and older earned more than girls above this age. It seems that spinning labor was valued higher, if done by boys older than 12 years. The weaker correlation between age and wage levels for boys, especially when they were older, suggests that they benefited more than girls from a 'skill premium' on their labor. Instead, for girls in low-skilled activities, age and experience determined the (much more gradual) rise of their pay.

Non-orphaned children in the cloth industry were paid in various ways. Weavers in particular received piece wages, which varied very strongly—from 50 to an incidental 150 *stuivers* for a complete sheet of cloth. Many budding weavers also received 'full pay', but in that case they usually paid a significant amount (43 to 75 guilders) in apprenticeship fees.<sup>60</sup> Weekly wages were also an accepted practice. These varied from 20 to 70 *stuivers* in weaving and 5.5 to 40 *stuivers* in spinning. Usually weekly wages increased in the second and third year that children worked for their employer. A great many children were paid only in kind:

food and accommodation as well as some clothes or a sheet of cloth. Payment in kind was prohibited in the case of adults within the textile industry, but was apparently tolerated for children.<sup>61</sup> Often the children received a certain sum of money after serving the whole of their contracted work period. With such a bonus in prospect, their employers ensured that the children would continue to work for them. Table 3 shows how, in the periods 1638–1641 and 1650–1656, the different kinds of remuneration were distributed over different types of work and between boys and girls.

Payment in kind was more common in low-skilled work such as carding and spinning. Children who did not earn money wages received food and lodgings, but the two types of remuneration did not necessarily exclude each other; about 10% of all children earning a money-wage also lived with their employer. In higher-skilled occupations such as cloth work and weaving, children (almost always boys) more often earned piece wages and weekly wages. The proportion between these two kinds of money-wages changed from mainly piece wages in the period 1638–1641 to weekly wages in the later period. Both among boys and girls payment in kind gradually declined. Between 1638 and 1641 some 31% of the children received a money-wage, which increased to about 50% between 1650 en 1656.

The fact that the Leiden orphans in the seventeenth century received money wages suggests the importance of their incomes for balancing the orphanage's budget. Similarly, eighteenth-century Gouda orphans were paid in cash. The few other sources there are suggests that on the whole payment in kind was rare and intended mostly as a supplement. For example, boys and girls working in button-making in the seventeenth century, as well orphaned boys working at roperies or learning to spin sometimes received a pair of shoes in addition to

Table 3

## Leiden apprentices (boys and girls): relationship of activities and type of wage

## 1638–1641

Type of wage	Spinning/ carding		Weaving/ draperies		Other	Total	Boys		Girls	
Piece wage	27	4.1%	94	60.3%	3	124	113	16.9%	11	5.9%
Weekly wage	64	9.8%	60	38.5%	23	147	110	16.4%	37	20.0%
Payment in kind	559	85.2%	1	0.6%	10	570	439	65.5%	131	70.8%
Day wage	6	0.9%	1	0.6%	4	11	5	0.7%	6	3.2%
Unknown	0		0		3	3	3	0.4%	0	0.0%
<b>Total</b>	<b>656</b>		<b>156</b>		<b>43</b>	<b>855</b>	<b>670</b>		<b>185</b>	

## 1650–1656

Type of wage	Spinning/ carding		Weaving/ draperies		Other	Total	Boys		Girls	
Piece wage	56	7.5%	143	35.9%	2	201	181	18.1%	20	10.1%
Weekly wage	191	25.4%	247	62.1%	42	480	392	39.2%	88	44.4%
Payment in kind	503	66.9%	6	1.5%	4	513	423	42.3%	90	45.5%
Day wage	1	0.1%	2	0.5%	0	3	3	0.3%	0	
<b>Total</b>	<b>751</b>		<b>398</b>		<b>48</b>	<b>1197</b>	<b>999</b>		<b>198</b>	

Source: see Table 1

an annually increasing wage. Possibly the children also received a meal during the day from their boss, but clear evidence of food or clothing as a substantive component of the wage is not available.<sup>62</sup>

The children in the Gouda pipe factory, all earned the same: the 6 girls and 18 boys aged between 10 and 14 all received 16 *stuivers* a week. This wasn't very much, but the children received training in the factory and could, as they grew older, move to other workplaces where they could earn more.<sup>63</sup> The wages of the Gouda orphans varied strongly in the middle of the eighteenth century, from 2 to 24 *stuivers*. Usually the wages increased by a few *stuivers* after each year of service.<sup>64</sup> While the connection between wages and gender is difficult to establish for children of a very young age, there were clear differences between the wages of boys and girls who had reached the age at which they left the orphanage. According to the regulation of 1759, boys should be able to bring in 50 *stuivers* a week in their last year of service and girls should bring in 24 *stuivers* a week in their last two years.<sup>65</sup>

In general, the remuneration for low-skilled work depended strongly on years of service, while higher-skilled work after some years rapidly paid much more. This explains why we found a stronger correlation between work and age for girls than for boys, at least from about age 12 to 14. Payment in kind occurred to a limited extent in the Dutch Republic; it seemed to be more closely associated with low-skilled activities like spinning and therefore occurred more frequently among girls.

### Learning to work, or working to learn?

Children who were put to work probably worked long hours each day—there are some mentions of 10 to 14 hours a day—and their labor almost certainly was at the expense of their education. Although primary education was relatively accessible in the Dutch Republic compared to neighboring countries, for both sexes and all social strata, this should not be exaggerated.<sup>66</sup> Not all parents could afford to send their children to school and children's labor was often essential to the survival of the family.<sup>67</sup>

Children's work did not always supply income immediately. Weekly wage of the children rose every year because employers expected more and more productivity of the children. In some cases, apprenticeship fees were paid to bosses to learn specific skills. How exactly one determined the boundary between payment of apprenticeship fees, work done for free and earning a wage is not clear. Seventeenth-century girls in Gouda who were hired out to learn hackling initially earned a modest wage, but at the end of the century had to pay for tuition in this trade.<sup>68</sup> Of the 2,000 children in Leiden cited in the administrative records of the textile industry, it is known that 10% paid some kind of apprenticeship fee; they paid a lump sum, or a percentage of the 'full wage', or per piece of woven cloth or batch of spun yarn.

Beyond tuition in trade skills, the guardians and employers sometimes negotiated contracts for the general education of the children. At least half of all the Leiden masters committed themselves to paying school fees for their male and female apprentices. Apparently, these children attended at least a few hours a

week at school. Orphans in this regard probably benefited from living in an institution that had rules for general education. The orphan regents were committed to the idea that the children would be taught at least something during the period they were working. Thus, according to most of the contracts that the Leiden orphanage made with employers, the orphan children should at least receive one lesson per day. Evidently one considered it important that both working boys and girls acquired some general education and (or) religious instruction.<sup>69</sup>

The minimum wages mentioned earlier, which Gouda orphans had to bring in during their last years in the orphanage, would guarantee that they could provide for themselves as adults. In addition, stipulations were made for their general education: both boys and girls had to be able to read and write acceptably when they left the orphanage.<sup>70</sup> Boundaries between general education and labor blurred, just as the difference between vocational education and access to cheap labor was unclear, as is illustrated by the case of the Gouda tailors' guild. The tailors had complained at times about the fact that wool seamstresses employed children for one or two years to learn wool sewing, and after that demanded more money. According to them, this time was too brief, and a training period of three years was required.<sup>71</sup> Wool seamstresses often violated a rule that they could not hire out trainee girls to sew for private citizens, unless they were present themselves, or else that the children completed their practical test within half a year. If apprentice girls were discovered in the homes of the burghers, the seamstresses pretended that they were looking after the children, and that the sewing work they had with them belonged to their teachers. This form of cheap competition was considered unfair, and therefore children were not admitted to sewing jobs in the sewing shop, unless they could pass their practical test within half a year.<sup>72</sup>

Although the official aim of workhouses and spinning schools was to teach children skills and work ethics, in practice young children in these projects often served as cheap labor. This is illustrated by the Utrecht spinning school, which was constantly apprehensive that the children would desert to free spinning bosses because they could earn more money there. Therefore, they tried to keep the children at school by emphasizing that they received an education there. In 1779, the maximum age for spinning children was lowered, because older children learned the trade too quickly. In 1780 the deacons decided that children under twelve would not be licensed to spin elsewhere, "because children under the age of twelve are usually not capable, to be successfully placed in another trade, and because it is assumed that children of those ages are more susceptible, and will keep in memory, until such time they can resume this work, learned in their younger years, elsewhere."<sup>73</sup> Evidently there was too little benefit in a large turnover of children.

The dividing line between children who learned to work and worked to learn was tenuous. On the one hand employers and institutions profited from the labor of children learning a trade, on the other hand working children in many cases learned on the work-floor. The fact that spinning schools emerged for an occupation that for centuries has been designated as "unskilled" shows however that "schooling" not only referred to learning skills, but was also to a certain extent a social construct.

Conclusion

From our research on industrial child labor in different towns in the Dutch Republic over two centuries, it appears that two types of work can be distinguished: work that served as education in preparation of a future occupation and wage labor in the unskilled sectors. This included spinning and button making, and economically important branches of export industries such as the Leiden textile industry or the Gouda pipe-making industry. These branches were particularly in need of large numbers of (cheap) wage laborers in the seventeenth and early eighteenth centuries when the Dutch economy experienced unprecedented growth. Although not unique, the early development of such large scale industries and the inherent widespread occurrence of proletarianization next to ‘traditionally’ organized crafts and trades rendered a different character to child labor in the Dutch Republic.

What type of labor children performed was influenced by age, social background, and sex (see Figure 1). From a young age (usually starting at 8 or 9 years), boys and girls often performed the same kind of work. These children were almost always from poor families or orphaned. Apart from payments in kind such as food and lodgings, the children often received piece wages or weekly wages. With their labor, they contributed to the family budget or to the orphanage. The specific character of the export industries, with their large demand for cheap, unskilled labor, obviously influenced the training of children. In contrast to the traditional crafts, the aspect of learning a trade was of far less importance. The primary aim was to prepare them for participation in the large-scale production process as soon as possible.

The age from 12 to 14 formed a turning point. From that age, the training aspect began to play a role and differences in social background began to emerge. While children from poor families and orphans were usually pressed into wage labor and entered in the labor market rather early as ‘young adults’, for children (especially boys) from the ‘better-off’ social classes it marked the beginning of vocational training. The last-mentioned still had some time to learn. Boys from 12 to 14 years of age often had access to a form of apprenticeship. Some of them

Figure 1  
Child labour in early modern times: a model

	From age 3 to 6 Boys and Girls	From age 12 to 14	
		Boys	Girls
Poor children	<ul style="list-style-type: none"><li>• wage labour</li><li>• sometimes a little general education</li></ul>	<ul style="list-style-type: none"><li>• wage labour</li><li>• occasionally vocational education</li></ul>	<ul style="list-style-type: none"><li>• wage labour</li><li>• household labour inside or outside the house</li></ul>
Orphans	<ul style="list-style-type: none"><li>• possibly tasks in orphanage</li><li>• general education</li><li>• sometimes wage labour</li></ul>	<ul style="list-style-type: none"><li>• vocational education</li><li>• occasionally wage labour</li></ul>	<ul style="list-style-type: none"><li>• wage labour</li><li>• household labour inside or outside the house</li></ul>
Children of craftsmen/ shopkeepers etc.	<ul style="list-style-type: none"><li>• possibly helping at home</li><li>• general education</li><li>• no wage labour</li></ul>	<ul style="list-style-type: none"><li>• vocational education</li></ul>	<ul style="list-style-type: none"><li>• sometimes wage labour</li><li>• helping in trade, shop or household</li></ul>



received a proper guild apprenticeship, which might lead to guild mastership, but this was by no means guaranteed, as the ongoing proletarianization resulted in a growing number of journeymen who would never reach the status of a guild master.

Nevertheless, their chances on the labor market were still much better than that of most girls. There were clear differences between boys and girls: from the ages of 12 to 14, we see the emergence of the gender specific patterns which were so characteristic of the early modern labor market.<sup>74</sup> Possibly, one invested less in the education of girls because it was expected that they would marry and perform household labor, or would work within the profession of their husband.<sup>75</sup> Low-skilled occupations in industry were thus often a preparatory phase for girls. Not only if they stayed unmarried, but also if they did marry, many of them landed in these occupations. Perhaps it is therefore more appropriate to refer to 'formal' and 'informal' training. For girls, formal channels were usually closed. They did learn skills which, as adults, they would probably continue to practice: household labor, spinning, sewing and knitting.

Looking at child labor from a more diversified perspective, paying attention to gender, class, and human capital formation, may help us gain more insight in the functioning of (pre-industrial) transforming economies and processes of proletarianization. The Dutch Republic is an outstanding example of a society, where a market for wage labor developed relatively early, but where other structures, such as guild-organized crafts for a long time continued to exist. It seems that a marked division of labor, structured by gender and class, emerged already in the stage of childhood. These were underlying features of a flourishing economy which combined an elite of well-skilled—male—workers with a flexible labor reservoir of young, both female and male workers, providing the important export industries with its large demand for cheap wage labor. More comparative research might help us find out to what extent these characteristics of child labor are decisive for the development towards a modern economy.

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## ENDNOTES

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1. Regionaal archief Leiden (RAL), Archief Hallen, inv.nr. 127a.
2. See J. C. Vleggeert, *Kinderarbeid in de negentiende eeuw* (Bussum, 1967).
3. For example E.P. Thompson, *The Making of the English Working Class* (revised edition Harmondsworth, 1968), 384; Brian Inglis, *Poverty and the Industrial Revolution* (London, 1971). More recently: Jane Humphries and Sara Horrell, "The Exploitation of Little Children': Child Labour and the Family Economy in the Industrial Revolution," *Explorations in Economic History* 32 (1995): 485–516. See for an extensive overview: Peter Kirby, *Child Labour in Britain, 1750–1870* (London, 2003), 1–5.
4. Kirby, *Child Labour*, 2–4; 51–53.
5. Jan de Vries and Ad van der Woude, *The First Modern Economy. Success, Failure, and Perseverance of the Dutch Economy, 1500–1815* (Cambridge, 1997), 605–606.
6. Leo Noordegraaf and Jan Luiten van Zanden, "Early Modern Economic Growth and the Standard of Living: Did Labour Benefit from Holland's Golden Age?" in Karel Davids and Jan Lucassen, eds., *A Miracle Mirrored. The Dutch Republic in European Perspective* (Cambridge, 1995), 410–437, 426.
7. N.W. Posthumus, *De geschiedenis van de Leidsche lakenindustrie* (Den Haag, 1939), 575–613; Idem, "Kinderarbeid in de zeventiende eeuw in Delft," *Economisch-Historisch Jaarboek* (1940–1942): 49–60; J.C. Vleggeert, *Kinderarbeid in Nederland 1500–1874. Van berusting tot beperking* (Amsterdam, 1964).
8. Laurence Fontaine and Jürgen Schlumbohm, eds., *Household Strategies for Survival 1600–2000: Fission, Faction and Cooperation. International Review of Social History (IRSH), Supplement 8* (2000); Pier Paolo Viazzo, "Family Strategies': A Contested Concept," *IRSH* (2002): 421–485; Michiel Baud and Theo Engelen, eds., *Samen wonen, samen werken? Vijf essays over de geschiedenis van arbeid en gezin* (Hilversum, 1994).
9. See also Clark Nardinelli, *Child labor and the Industrial Revolution* (Bloomington, 1990).
10. Mary B. Rose, "Social Policy and Business. Parish Apprenticeship in the Early Factory System 1750–1834," *Business History* 31:4 (1989): 5–29.
11. Elise van Nederveen Meerkerk, *De draad in eigen handen. Vrouwen en loonarbeid in de Nederlandse textielnijverheid 1581–1810* (Amsterdam, 2007), 177–179, 248–253.
12. Dirk Van Damme, *Armenzorg en de staat* (Gent, 1990) 218–223, 238.
13. See for instance Deborah Simonton, "Apprenticeship: Training and Gender in Eighteenth-Century England," in Maxine Berg, ed., *Markets and Manufacture in Early Industrial Europe* (London, 1991), 227–260; Sara Horrell, Jane Humphries and Hans-Joachim Voth, "Destined for Deprivation: Human Capital Formation and Intergenerational Poverty in Nineteenth-Century England," *Explorations in Economic History* 38 (2001): 339–365.

14. The exception is 'light work', for which the ILO-boundary is at 12 to 13 years. Alessandro Cigno and Furio C. Rosati, *The Economics of Child Labour* (Oxford, 2005), 1–3.
15. A.S. de Blécourt, *Kort begrip van het oud-vaderlandsch burgerlijk recht* (Groningen/Den Haag) 37; M. van der Heijden, "Contradictory Interests: Work, Parents and Offspring in Early Modern Holland," *The History of the Family* 9 (2004): 355–370, 357; S. Groenveld e.a., eds., *Wezen en boeffjes. Zes eeuwen zorg in wees- en kinderhuizen* (Hilversum, 1997), 130–131. See also: Sheilagh C. Ogilvie, *A Bitter Living. Women, Markets, and Social Capital in Early Modern Germany* (Oxford, 2003), 99–102.
16. Kirby, *Child Labour*, 10.
17. See for example: Deborah Simonton, *A History of European Women's Work 1700 to the Present* (London/New York, 1997), 2–3; Kirby, *Child Labour*, 11–13.
18. Regionaal Historisch Centrum Tilburg (RHCT), Volkstellingen, inv.nrs. 1275–1277.
19. Hilde van Wijngaarden, *Zorg voor de kost. Armenzorg, arbeid en onderlinge hulp in Zwolle 1600–1700* (Amsterdam, 2000), 183, 275; Ingrid van der Vlis, *Leven in armoede. Delfse bedeeden in de zeventiende eeuw* (Amsterdam, 2001), 188.
20. An indication for this is that peasant children who performed non-agricultural activities (in particular as spinners) are registered with their occupation. RHCT, Volkstellingen, inv.nrs. 1275–1277.
21. In London this was also an important occupation for boys. See Peter Kirby "A Brief Statistical Sketch of the Child Labour Market in Mid-Nineteenth Century London," *Continuity and Change* 20 (2005): 229–245.
22. See also Kirby, *Child Labour*, 10, 16.
23. Ingrid van der Vlis, *Weeshuizen in Nederland. De wisselende gestalten van een weldadig instituut* (Zutphen, 2002), 33.
24. RAL, Stadsarchief II (SAII), inv.nr. 6006, 13-4-1802 and n.d.
25. RHCT, Volkstellingen, inv.nrs. 1275–1277.
26. RAL, Hallen, inv.nrs. 127 a–j.
27. RAL, HGW, inv.nrs. 3789–3806, 3844, 3845, 3847–3849, 3850–3856, 3858a–3858e, 3860, 4521.
28. RHCT, Volkstellingen, inv.nrs. 1275–1277.
29. Van Wijngaarden, *Zorg voor de kost*, 183, 275; Van der Vlis, *Leven in armoede*, 188.
30. RAL, HGW, inv.nr. 3847.
31. Groenveld e.a., *Wezen en boeffjes*, 203–204.
32. RAL, SA II inv.nr. 6006, n.d. and 14-4-1802.

33. Erika Kuipers, "Leren lezen en schrijven. Onderwijs en alfabetisering in Amsterdam, 16<sup>e</sup> en 17<sup>e</sup> eeuw", (unpublished master thesis, University of Amsterdam, 1994), 58–59.
34. Anne McCants, *Civic Charity in a Golden Age: Orphan Care in Early Modern Amsterdam* (Champaign, 1997) 19, 27–29; J.E.J. Geselschap, "Het verenigd Wees- en Aalmoesieniershuis te Gouda 1495–1948" in J. E. J. Geselschap, ed., *Gouda zeven eeuwen stad. Hoofdstukken uit de geschiedenis van Gouda* (Gouda, 1972) 241–286, 245.
35. Dirk Jaap Noordam and Antoinette Frijns, "Leidse weesjongens en hun minnen in de achttiende eeuw," *Jaarboek Dirk van Eck* (1997) 33–44, 34.
36. RAL, Hallen, inv.nrs. 127a–j.
37. Database Armenzorg Zwolle; Van Wijngaarden, *Zorg voor de kost*, 110.
38. Streekarchief Hollands Midden (SAHM), Archief Weeshuis Gouda (AGW), inv.nr. 580, 1755; J.N. Soeters, "Heekelnering en lijndraaijerij te Gouda tot begin 1700". (Unpublished master thesis, University of Amsterdam, 1935), 28–30.
39. RAL, HGW, inv.nr. 254; SAII, inv.nr. 6006, 14-2-1802.
40. Groenveld, "De Republiek", 203–204.
41. RAL, Archief Werkhuis, inv.nrs. 3–5.
42. Het Utrechts Archief (HUA), Archief Diaconie, inv.nr. 912, 28-8-1777.
43. Idem, 12-6-1779.
44. SAHM, Oud Archief Gouda (OAG) inv.nr. 130, 31-8-1780.
45. RAL, HGW, inv.nrs. 3844, 3845, 3847, 3849. The information that follows is based on this sample.
46. RAL, Archief Hallen, inv. nrs. 127a, 127b and 127j.
47. Of the adult men hired, similarly only 27 worked in textiles, Van Wijngaarden, *Zorg voor de kost*, 155.
48. Database Poor Relief Zwolle.
49. RAL, SA II, inv.nr. 6006, 14-4-1802, 13-4-1802 and n.d.
50. "Gildebrief pijpmakers 18-2-1686," in *Gildebrieven van alle de gildens binnen de stad Gouda* (Gouda, 1713); J. van der Meulen and L. den Toom, "Het pijpmakersgilde te Schoonhoven," *Pijpelogische Kring Nederland* 6, 22 (1983): 39–45, loc. cit.: 41–42.
51. SAHM, Archief Pijpnering Gouda (APG), inv.nr. 76, 22-7-1783.
52. A.M. van der Woude, "De omvang en samenstelling van de huishouding in Nederland in het verleden," in P.A.M. Geurts and F.A.M. Messing, eds., *Economische ontwikkeling en sociale emancipatie, 18 opstellen over economische en sociale geschiedenis* vol. 1 (Den Haag, 1977): 231–232; Donald Haks, *Huwelijk en gezin in de 17de en 18de eeuw* (Utrecht, 1985), 158. Recent research has shown that in eighteenth-century Antwerp too there were few live-in arrangements for apprentices and journeymen. Bert De Munck, "In loco parentis? De disciplineren van leerlingen onder het dak van Antwerpse ambachtsmeesters (1579–1680)," in: *TSEG* 1(3) (2004): 3–30.

53. Vleggeert, *Kinderarbeid in Nederland*, 7.
54. RAL, HGW, inv.nrs. 3844, 3845, 3847, 3849.
55. SAHM, AWG, 12, 26-5-1783.
56. RAL, HGW, inv.nrs. 3844, 3845, 3847, 3849.
57. RHCT, Volkstellingen, inv.nrs. 1275–1277.
58. Leo Noordegraaf, *Daglonen in Alkmaar 1500–1850* ([’s-Gravenhage], 1980), 138; De Vries and Van der Woude, *First Modern Economy*, 562.
59.  $R^2$  for all boys: 0.64;  $R^2$  for all girls: 0.67.  $R^2$  for boys weaving: 0.49;  $R^2$  for boys reeling: 0.62.  $R^2$  for boys spinning: 0.39;  $R^2$  for girls spinning: 0.64.
60. One guilders = 20 stuivers.
61. N.W. Posthumus, *Bronnen tot de geschiedenis van de Leidsche textielnijverheid. Vijfde deel 1651–1702* (’s-Gravenhage, 1918), 22–24.
62. SAHM, Gilden, inv.nr. 71, z.f. (1661/1662); Soeters, “Heekelnering,” 28–31.
63. SAHM, APG, inv.nr. 76, 10-6-1783.
64. SAHM, AWG, inv.nr. 580.
65. SAHM, AWG, inv.nr. 1, 8-3-1759.
66. De Vries and Van der Woude, *First Modern Economy*, 169–170; Margaret Spufford, “Literacy, Trade and Religion in the Commercial Centres of Europe,” in Davids and Lucassen, *A Miracle Mirrored*, 229–283.
67. P.Th.F.M. Boekholt and E.P. de Booy, *Geschiedenis van de school in Nederland vanaf de middeleeuwen tot aan de huidige tijd* (Assen, 1987), 42–43.
68. Soeters, “Heekelnering,” 11–12.
69. RAL, HGW, inv.nrs. 3844, 3845, 3847, 3849.
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