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From professional educator to labour movement agitator: The Devil's role in an industrial context

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Abstract

What springs to mind when the word 'industry' is mentioned? Perhaps negative things such as pollution and deprivation? Evil and industry have a long history together. This chapter examines the supernatural at work, namely metallurgy and the Devil within from prehistory to the time of industrialization in the 20th century. For thousands of years, various non-human powers have been linked to metallurgy, the metalworker, and the origin of metalworking skills, as well as the materiality of metallurgy, such as the smithy and the objects made there. These issues are discussed here through stories told in Finland about the Devil and the smith, concentrating on an industrial context. When metallurgy was industrialized, the Devil did not leave the forge, he just changed his role from that of the smith's persecutor to that of an agitator in labour movement politics. The tradition of linking the smith's job with the supernatural continued in the industrial context. Industrialization was not just about capitalism, modernity, and development, it was also about magic and adapting past beliefs into a modern context.

Keywords: metallurgy, industrialization, supernatural, corporeality, haunted spaces

9.1. Introduction

This chapter discusses the relationship between early industry and the supernatural. How did industrialization change the link between the smith and the supernatural Devil and how did material examples of the supernatural and the work represented by the smith's body and workplace change over time? These questions are answered by taking a look at the stories (written and pictorial) told about the Devil, smiths, mills, and mill owners.

Recently, many fields of the research of the past have been interested in giving a voice to people who have previously been in a marginal position (in Finnish research, e.g. Helsti et al. 2006; Mikkola 2009; Vainio-Korhonen 2018) or focusing on a marginal phenomenon like the supernatural or haunted places (e.g. *Paranthropology: Journal of Anthropological Approaches to Paranormal*; Holloway 2010). This chapter follows this tradition by discussing a rather marginal yet revealing aspect of the

industrialization process, which was a part of the modernization of Finland that took place rapidly in the 19th century. Religious thinking in the industrial context has been an underexplored area in archaeology and history, even though religious thinking is usually an essential field to examine in the study of human actions. This chapter discusses religious thinking in an industrial context.

Mikkola (2009) has studied the attitudes of Finnish agricultural communities to new technologies (such as trains, cameras, and radios) introduced by modernization in the latter half of the 19th century. Mikkola argues that the emotions (admiration and fear) that people experienced when facing new and strange technologies for the first time resembled religious experiences (Mikkola 2009: 207). This could also be seen in the industrial context, as I argue here. People living during the modernization process understood modern material manifestations through a mental schema that Mikkola calls folk theology, which often explained new and inexplicable objects as products of the Devil (Mikkola 2009: 179–182). This kind of thinking is still alive today in connection with new technologies: for example, in computer programming, the act of programming is sometimes considered 'magic' (Aupers 2009: 153).

My data consists of diverse material from historical and pictorial sources that are seemingly different but share the common feature of revealing something about the supernatural in an industrial context. The majority of the data consists of folklore stories (27 different runes and beliefs) from the Folklore Archives of the Finnish Literature Society (FLS FA) and early-20th-century newspapers and magazines (12 articles, approximately 50 illustrations).

Folklore material has been used in archaeology, for example, by Hukantaival (2016), who used it to interpret traditions of building concealment. I formed my body of folklore data by searching the SKVR (Suomen kansan vanhat runot, Old poems of the Finnish people) database for mentions of smiths, factories, or mill-made iron objects together with magic tricks, fire handling, or non-human creatures. Another source was the FLS FA index of religious stories with similar mentions (G: guardian spirits of culture spaces, E: the Devil) (see the Appendix 9.1. for detailed information).

Magazines represent the material culture of the labour movement through which the ideas were propagated. I went through hundreds of early-20th-century labour magazine covers and illustrations and ended up forming a collection of about 50 images that share certain features and cover a period of 30 years. This chapter does not discuss each image separately. Magazines that emerge as significant sources for such images include *Tie vapauteen* (Road to Freedom), *Metallityöläinen* (Metal Worker) which was previously named *Ahjo* (Forge), *Punikki* (Commie), and *Työmiehen joulu* (Worker's Christmas), to mention a few. Some of these magazines were published in North America (for example, *Punikki* in New York, *Tie vapauteen* in Michigan, and *Työmiehen joulu* in Wisconsin) for Finnish immigrant labourers, and many of the illustrations were made in America, where the production of such images was popular (Slavishak 2008), but also Finnish illustrations were produced.

I collected my set of written stories by browsing through the archives of Finnish newspapers and collected articles that mention industry and the supernatural together. I ended up with 12 different articles. None of the newspapers was profiled as a significant source for this kind of material, as the same stories were circulated in various newspapers. Most of the Devil and worker stories in Finnish newspapers originated in Russia.

This study counts as documentary archaeology (Beaudry 1988) because textual and pictorial documents are used to interpret past ideas that were linked to the material culture of metallurgy (objects, body, and spaces). My method of studying these documents was not an actual discourse or picture analysis, as my aim was simply to see whether the supernatural and the industrial were depicted together in this data and if so, how. To find this out, I browsed through documents searching for any signs of the supernatural and industry together. Applied to texts and oral testimonies, this means I sought to see whether words referring to non-human actors were used to describe the materiality of industry. In pictures I sought symbols that implied supernatural attributes referring to workers' bodies

or industrial processes. My objective was mainly to see whether something could be found in this material or not, and any deeper analysis of this data as literature or art was not the aim of this study.

Documentary archaeology is often used for studying the lives of labourers because industrial sites have left behind plenty of documents about the sites and the people who lived there. A classic study that combined different sources for studying the industrial past from a social point of view is the study of the Boott mills by Mrozowski, Ziesing, and Beaudry (1996). However, they criticized oral and written histories because of their tendency to glorify issues (Mrozowski et al. 1996: 49) and preferred traditional archaeological methods for finding out the truth. That is understandable in some cases, but this chapter specifically focuses on the aspect of glorifying and issues that go beyond actual material reality. The more factories are glorified, the more interesting the material is to me. I also point out that even imaginary things such as haunting and the supernatural related to industry reveal the truth when it comes to peoples' experiences and attitudes towards new and unknown things. Textual and pictorial data is interpreted here as material culture made for certain purposes, as material manifestations and pictures of shared ideas rather than literature or works of art. Mills and workers are seen here as the material context of the non-human experiences linked to metallurgy. The context is interpreted a bit differently than usually in archaeology (on context, see Hodder 2009). The terms in the articles reflect the attitudes towards modernization and the symbols in the magazine illustrations reveal how old myths related to metallurgy were used for propagating new ideas.

In premodern and modern times, the Devil was associated with people and phenomena that were considered unfamiliar due to the world view where phenomena were explained using folk theology. Calling unknown people or objects 'devils' has been common (Åström 1995; Ylimaunu 2007: 7; Mikkola 2009: 207–211), and, for example, in the Seinäjoki region the term was used to refer to workers of the Östermyra iron and gunpowder mill (Alanen 1970: 281). Studying something as ambiguous as personal experiences of the supernatural (especially past experiences) can be risky. Linking certain groups of people to certain interpretations might even increase inequality (Cameron 2008: 384). Discussing mills and smithies from a supernatural point of view makes sense because the tradition of associating these places with non-humans is a fact. A link between the supernatural and inequality also appears in my data especially with regard to mill owners. In some cases, there is no doubt that the Devil stories were a way to make certain people look non-human. The Devil's changing role in the metal industry echoes ancient mindsets, and sensing non-human activity in certain places and spaces – even industrial ones – is something to be considered.

9.2. The smith and the Devil together at work

Smiths have been associated with supernatural powers for a long time all over the world. The supernatural in metallurgy is a common theme in Finnish folk culture (see e.g. Sarmela 1994: 131–133). Finns used to call a smithy a 'nest of witchcraft' quite recently (Paulaharju 1932: 81), and even today's blacksmiths connect their work with the Devil and the occult, for example, by naming their forges after the Devil or in a heathen manner, such as Manalan paja ('Hell's forge', Jyväskylä, Finland) or Takomo Alkutuli ('Primordial fire forge', Keuruu, Finland). In Finnish folklore, the Devil appears in many kinds of contexts and smiths are not his only companions. Research on the Devil is plentiful in the fields of folkloristics and religious studies (e.g. Klemettinen 1997; Purola 2020). Naturally, the concept of incarnated evil varies through time and place. The character discussed here is not the same as in the Abrahamic religions. As Klemettinen (1997) puts it, the Devil of Finnish folklore is a mixture of the poltergeist tradition, Christianity, and heathen folk religion. Considering the areal and temporal perspective, the link between the smith and the Devil has been strong.

A smith transforms matter with fire. The transformation process requires special skills, and this is where invisible forces come into play. Herva and Ylimaunu (2014: 193–194) argue that in prehistoric times metallurgy took place in liminal spaces (islands, coastlines) because of its engagement with non-human powers. The continuity of isolation can be seen in the locations of later smithies and factories (Fig. 9.1). Their location outside of people's everyday life spaces, far from other buildings (and for factories, even in their own village-like communities), was chosen for practical reasons, but the isolation might have strengthened the feeling of the mystical nature of these places and the processes that took place there.

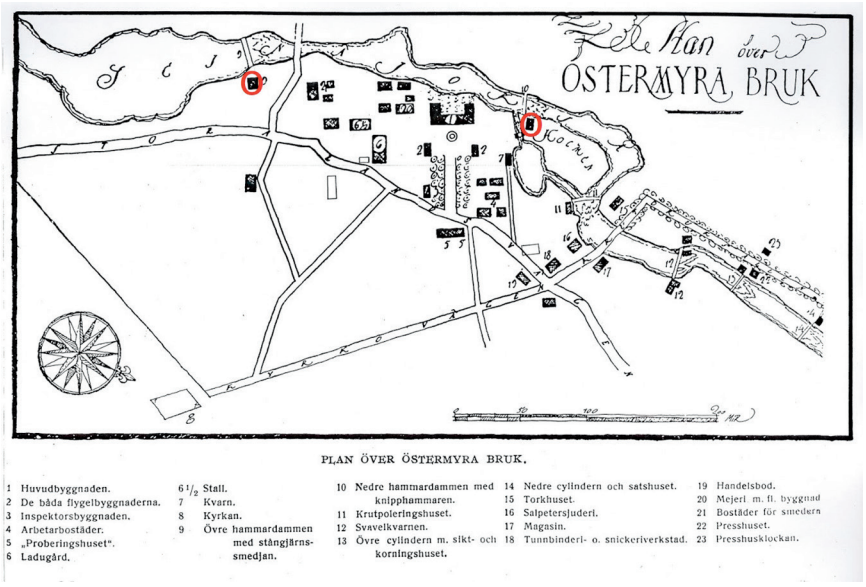

Figure 9.1. Map of the Östermyra iron mill (1798–1880). Smithies, marked in red by the author, are located on an island and in the utmost corner of the mill area. (Picture: Seinäjoki Museum archives.)

The fairy tale 'The smith and the Devil' might be the oldest fairy tale known, dating 6000 years back (Tehrani and da Silva 2016), and it is thus also the oldest story about the smith and the Devil. In this tale, the smith gives his soul to the Devil in exchange for his professional skills. This kind of trade is a common motif in most Devil stories. *Mythologia Fennica,* written in 1786, is a dictionary of the creatures and places of Finnish folk stories. The book introduces the Devil as a smith and agitator: 'Piru, djefvulen, perkele: agitator and smith, forges arrows that spread diseases' and 'Fiery perkele' because as a smith he deals with fire and melts iron (Ganander 1984 [1786]: 70). Björklund (2018) has studied myths related to smiths using FLS FA data revealing that smiths were often described as wizards. Björklund has also taken a brief look at the Devil and smith stories. One typical story tells about the Devil asking a smith a favour, for example nailing a horseshoe to his hoof or providing a place to rest or food, but the Devil ends up fooled and does not get the smith's soul as promised. In the earliest stories, the smith learned his skills from the Devil on purpose or by accident or tried to banish him with fire and strength, but in the most recent stories (1950s), the smith uses the Bible for deportation. Based on this, Björklund interprets that the influence of Christianity becomes visible in stories as time goes by. The Christian church was hostile to smiths because of the heathen qualities attached to them (Björklund 2018: 46–53). An old folk tale about the first smith in Finland (Lönnrot 1840, rune no. 94 'The first smith [*Ensimmäinen rautio*]') tells how an axe was invented when the Devil entered a forge and revealed how to forge weld (Tegengren 1918: 116). A typical outcome for stories is that the smith ends up banned from Hell and Heaven (Westermarck 1897; Appendix 9.1 N:o 1). The smith was not the only one connected with the Devil: 'the simple folk', as a newspaper calls them in the 19th century, thought that gunpowder-makers (who also deal with fire and trans-

form matter) learned their skills, 'strange magic tricks', from the Devil (see Unknown author 1856; Ahlfors 1929: 50).

Like saunas and other places where fire was handled, smithies were associated with frightening and supernatural attributes (see Simonsuuri 2017: 327–332). Smithies and later factories, that is, sites of metallurgy, were places where fire, iron, and special skills were present, which is why non-human attributes and creatures were attached to these places. The smith's frightening character was strengthened with stories of a guardian spirit of the forge. Having a guardian spirit involved corpses. When a smith received an order to make coffin nails, he nailed one nail per order in the smithy's wall. When certain number of nails, or corpses (usually nine), was reached, the smithy received a guardian spirit (Appendix 9.1 N:o 2). The spirit made a hammering noise when the smith was absent, guarding the place against thieves (e.g. Appendix 9.1 N:o 3; Appendix 9.1 N:o 4). The threat of facing this frightening creature was an efficient deterrent against entering a smithy without permission. The spirit is portrayed as an ugly creature with long teeth (Appendix 9.1 N:o 5) or as kalma (meaning death), otherwise called 'waste from the graveyard', as in a story from Suistamo, previously Eastern Finland (today in Russia) (Appendix 9.1 N:o 6). Hukantaival (2017) has also found evidence of human remains used as a guardian spirit in a smithy. According to Hukantaival, so far the only Finnish example of human remains as a protective building concealment comes from Perho in Western Finland, where a human hand was said to have been hidden under the furnace in the smithy as protection against thieves (Hukantaival 2017: 136. See also Goldhahn & Oestigaard 2008: 224). These two examples of human remains in a smithy come from opposite parts of the country and from different cultural contexts. They imply that even though the tradition of hiding human remains under furnaces might not have been common, it was something people had heard of as being possible, and this was enough to give the feeling of otherworldly things being present at smithies.

9.3. The eerie materiality of metallurgy: The body and the workplace seen as non-human

The difference between ordinary people and smiths, also those employed by industry, was manifested in corporeality. The appearance and features of a smith's body evoke feelings ranging from fear to astonishment, which were emotions close to religious experiences, as discussed above. Heat and soot had turned the clothes of industrial smiths ragged and blackened their faces, and even their beards were burned (Nirkko et al. 1990: 42, 94). Even today, smiths' working positions cause their bodies to become slightly twisted: the hammering arm is usually larger and the back is bent (personal information, smith from Manalan paja 2019). Many old industrial smiths had disabilities such as poor hearing or vision (Nirkko et al. 1990: 102; Lehtiö 2007: 40). Bodily functions are also altered. Smiths sweat less (personal information, smith from Manalan paja 2019) and are able to handle hot iron. The inability to feel the heat is a result of dry skin and pores clogged by coal dust. The ability to bear heat is one of the Devil's features. This seemingly non-human physical ability connected the smith to the Devil. The mystery of the fire-resistant body of certain professionals has been contemplated already at the beginning of industrialization. A newspaper explained the phenomenon as follows in 1836: The skin of smelters, smiths, and others working with fire becomes hard and numb. They can grab a hot ember and iron or put their hands-on molten lead because their skin is so dry (Unknown author 1836: 187).

9.3.1. The archaeology of industrial forge ruins

Smithies have left behind scant and scattered archaeological evidence, because in many cases both industrial and small-scale smithies ended up burning. Many industrial smithies burned down and were

rebuilt several times. After production ended, they were abandoned and exposed to the destructive powers of nature. Due to this, the only remains left of most industrial smithies are stone structures or foundations (see Härö 1980–1982, 1980–1985, 1980–1984, 1980–1994). Sometimes, in the case of intentional abandonment, smithy sites were carefully cleaned and all materials were taken somewhere else (see Koivisto 2010: 34). However, some objects associated with beliefs and magical thinking might have remained behind in spite of cleaning and destruction because of their deposition place underneath the furnace. According to Hukantaival's interpretation, in the intentionally cleaned smithy excavated by Andreas Koivisto (2010) and yielding only a few finds, one of the finds was most likely a building concealment. Underneath the supposed furnace, Koivisto unearthed a piece of iron slag that, according to Hukantaival, was buried there for protection, suggesting the tradition of a guardian spirit of the smithy (Hukantaival 2017: 339). Smithies may have borne marks of belief on wooden structures similar to the above-mentioned rows of coffin nails on the wall. Building concealments placed underneath the floor ranged from coins to iron slag, and there are even stories of human remains (Hukantaival 2017: 80, 87, 97).

Archaeological work done at industrial sites (like iron mills) has mostly consisted of documenting structures and field surveying. As I searched through the mill data of the Finnish Heritage Agency (FHA), I noted that no specific archaeological information has been collected about industrial forges or smithies. The only archaeological excavation carried out in a such place in Finland is the excavation of the Kimo mill hammer smithy in 1994, but unfortunately the excavation report was never sent to the FHA (personal information, Vuoristo 2019). As recently as ten years ago, archaeology was not considered as the primary method of studying industrial ruins (see Niukkanen 2009: 59), which explains the lack of archaeological data. Recently, interest in studying industrial sites by socio-archaeological methods has increased (see Äikäs and Ylimaunu 2019; Hyttinen 2019).

9.3.2. Mills as haunted places

The Devil, Hell, and similar horror imagery was repeatedly used in articles that described smiths and sites of early industrial metallurgy (Fig. 9.2). They were described as haunted places, which is clearly another manifestation of the 'sacral fear of machines', as Mikkola calls the fear of planes, bicycles, and other mechanical novelties (Mikkola 2009: 209). Many 19th-century stories that describe visits to fac-

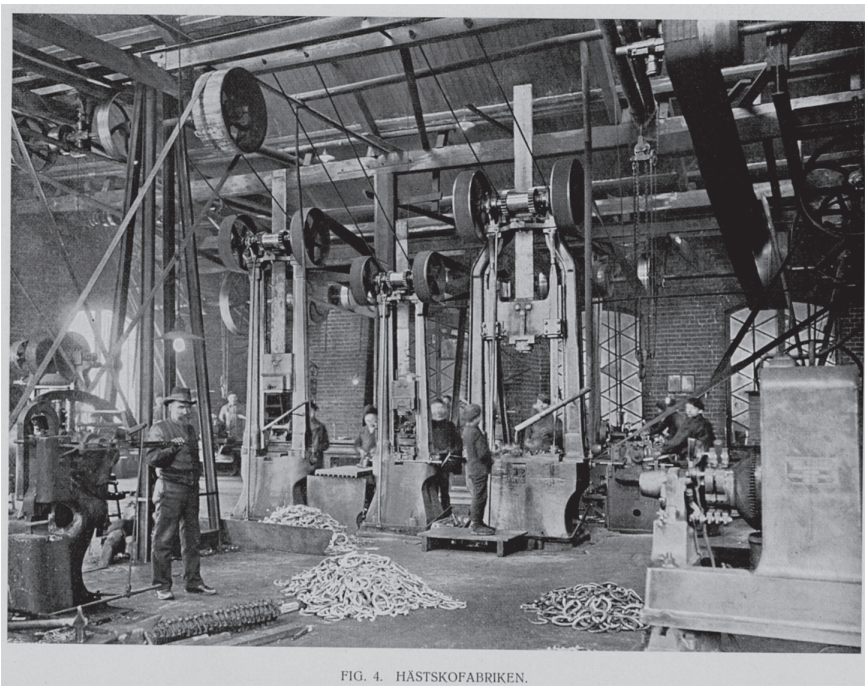

FIG. 4. HÄSTSKOFABRIKEN.

Figure 9.2. Inha mill horseshoe factory, a site of industrial metallurgy. Shoes for the Devil's hoof in the making? Illustration from *Tidskriften Teknikern* 1901. (Picture: Digital collections of the National Library of Finland.)

tories use language in which frightening creatures and a spooky atmosphere appear repeatedly. Industrial metal casting was described in 1864 as follows: ”Now all gutters are filled and we see something that looks like a fabric woven by *hiisi*s (*hiisi* is a non-human creature in Finnish folklore, a troll similar to the Devil, and a place similar to Hell. See Ganader 1984 [1786]: 14). One stripe is black, another is glowing golden red. *Hiisi*s walk around the fabric, trowel it, fix the ends of the rug and finally cover everything with gravel” (Unknown author 1864). In another story, upon approaching the factory, the writer ”feels something strange, like a foretaste of Hell” and sees mill workers who are blackened from soot ”move like ghosts” and ”look rather like Devils than men”. Factory machinery ”leads one’s mind to diverse thoughts, they resemble the eerie rascals of fairy tales” (K...nen, pseudonym 1907: 43–44). A visitor to the Östermyra iron and gunpowder factory described factory buildings in horror themes as well. The refiner engine generated ‘death energy’ and the water channel was ‘the black river of the underworld’. The smithy reminded the writer of a priest’s sermon and the Hell-related words used in it. The gunpowder factory brought to mind ”the story of the fire and brimstone of Sodom”. As a contrast to the horrific factory buildings, the gardens and other surroundings of the mill area are described as being beautiful and in good order (Olli-Setä, pseudonym 1914), which reflects typical ideas related to the resistance to modernization, where familiar things such as nature are good, whereas machinery, which is a new and complex thing, is bad. A factory is depicted as a Hell scene also in a labour propaganda story called ‘The priest and the Devil’, which was published in many Finnish magazines and newspapers at the beginning of the 20th century. In this story, which is said to have been written by Dostoevsky, the Devil takes a priest to see the horrors of people’s everyday life. The first stop is an iron mill (Fig. 9.3), which appears to be such a hot and harsh place that the priest begs the Devil for permission to ”leave this Hell” (Muuan vanki [A prisoner], pseudonym 1908: 187).

Figure 9.3. Illustration for the story ‘The priest and the Devil’ from the magazine *Liekki*, Vol 3, 1924. (Picture: Digital collections of the National Library of Finland.)

Edensor (2005: 835) argues that the urge to feel the presence of ghosts and supernatural beings in spaces and places is connected to remembering the past, especially the spatialization of memory. Haunted places usually represent old and familiar things that have somehow become different and thus scary. Edensor (2005: 829) talks about old factory ruins and how people today sense ghosts in

them, but I see no reason why the same phenomenon would not have existed already when those factories were new. Edensor continues ”because of imperatives to bury the past too swiftly in search of the new, modernity is haunted [...]” and it is easy to understand that the people who visited factories and later described their experiences in ghostly tones had the feeling that the familiar had been changed into something new and strange because factories were spaces where old and new mixed. The task of metallurgy had already in earlier days been strongly attached to non-human beings such as guardian spirits and the Devil, and those ideas followed into modernity. Seeing factories with anonymous workers moving by the fire and oddly shaped machines might even have strengthened the feeling of weirdness. According to Mikkola (2009: 211), the tendency to interpret material signs of modernization as the Devil's work was an internal scheme that was based on a person's world view and activated spontaneously upon seeing the new technology for the first time. Modern phenomena may actually strengthen people's faith in magic and the supernatural, which will be discussed later. Also in later stories from the 20th century, factories are viewed as mysterious places because of the sensory perceptions they evoke. Facing modernization for the first time no longer explains these feelings. A story from the Jyrkkä mill relates that in the early 20th century, locals used to gather to watch the factory on dark Sunday evenings in the autumn, when the molten iron was let out and flames shed light on the factory itself and the dark night sky (Nirkko et al. 1990: 94). A memory related to the Haapakoski mill was recalled: ”There has always been something fascinating about the mill. The mysterious colours of the molten iron, the sounds of heavy hammers hitting, the rugged screaming of the steel, the mysterious rumble of rails...” (Nirkko et al. 1990: 98). As seen on magazine covers (Fig. 4), factories were depicted as playing an active role in military business, which also strengthened the evil attributes attached to industrialization.

9.3.3. The corporeality of the smith: Fireproof body, industrial body

People living in 19th-century Finland shared beliefs and habits related to handling fire. Fire was associated with fire *väki* and guardian spirits of fire, who were especially powerful, even the most powerful of all guardian spirits (Appendix 9.1 N:o 7). Fire had to be respected. It might take revenge on those who behaved disrespectfully towards it and cause destruction. For example, swearing was forbidden while making fire (Appendix 9.1 N:o 8); you had to bless the fire instead (Appendix 9.1 N:o 9; Simonsuuri 2017: 327–328). If you had to use water to put out the fire, it had to be clean, since using dirty water would have been an insult (Appendix 9.1 N:o 10).

Smiths, however, handled fire in a way that was against the taboos. They swore (e.g. Paulaharju 1932: 80–81) and urinated on fire (Appendix 9.1 N:o 11). Even today, smiths describe the colours of the cast in vulgar terms like ‘reddish as a dog's penis’ and ‘shit brown’ (Personal information, smith from Manalan paja in March 2019; smith from Takomo Alkutuli in October 2019). In fact, a smithy was a place that emphasized masculinity, and the smith could ignore the norms of usual behaviour thanks to his skills. Obscene stories were told, and also Devil stories were used to highlight the smith's special character (Jäppinen 2014: 116). People must have felt that the combination of handling fire and arrogant behaviour was both wrong and risky, and a person who could act this way was not afraid of the supernatural powers of fire. The ability to control fire and the desire to express that skill was probably the main reason for this behaviour. In folklore stories, a smith is actually often presented primarily as someone who controls fire regardless of the situation. For example, a smith tells about having a wooden capsule around the fireplace in his home: ”Well, there are means to curb the fire so that it does not burn” (Appendix 9.1 N:o 12). Another smith explained why he can touch hot iron: ”Fire does not burn his friend” (Appendix 9.1 N:o 13). This attitude was represented also in the industrial context. A boast from the Jyrkkä mill in 1885 claims: ”I pack my socks with fire and my boots with embers” (Appendix 9.1 N:o 14).

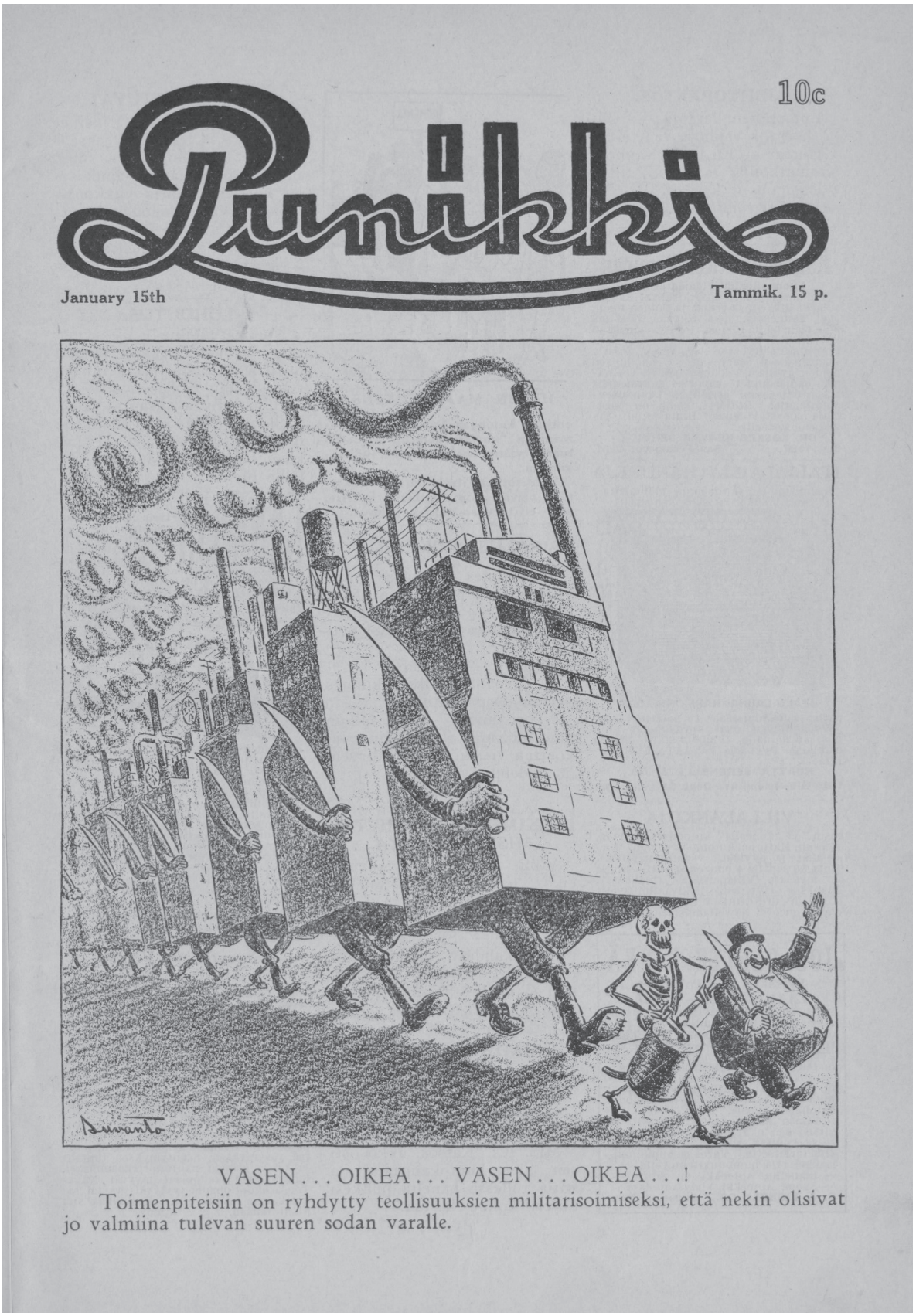

Figure 9.4. Evil factories. Magazine cover from *Punikki* 1928. (Picture: Digital collections of the National Library of Finland.)

Touching hot iron and other tricks have been a common source of amusement for smiths, especially if there was an audience. The tricks might have been a form of showing professional pride, a way of pointing out their extraordinary relationship with fire, which strengthened the myth of the special character of their bodily skills. As late as in the 20th century, in Toivakka it was considered an act of magic when a smith could drag a sizzling hot scythe over his hands without being burned in the least. Before performing the trick he had dipped his hands in water and ashes (Appendix 9.1 N:o 15). Another smith took glowing iron slag from the furnace and rubbed it onto his hands as though it were soap without suffering any burns (Appendix 9.1 N:o 16). Fire tricks were present also in the industrial context. Oral history collected in 1893 tells of a smith from the Leineperi mill: ”There used to be a smith in the Leineperi mill who was able to hold a glowing red iron and carry it around and his hands did not burn at all” (Appendix 9.1 N:o 17). The endurance of a smith's body was also the subject of an article written in 1864 that illustrated industrial iron-making in a mill that remains unknown: ”[...] the heat chased us viewers to the corners of the building where we were able to wonder at this amazing sight without feeling like we were suffocating. [...] It is amazing to see these men at work: it seems as if fire were their element, they move right next to its glowing stream and stoke it with their iron bars. As if their bodies were not made of flesh and bone that could scorch and burn. Sometimes, if there is an audience present, someone swipes his hand through the flames that flare out of the oven” (Unknown author 1864). The text above is interesting because it starts out as an educational piece about iron-making with the scientific viewpoint represented by cross-section pictures of a blast furnace, but when it comes to the mill workers, the tone turns poetic and non-human terms are used to describe the bodies of the workmen. Workers and viewers are divided by their corporeality in relation to the task performed. Corporeality in the context of early industrial work is a subject for a whole other study (on bodies in general, see Borić and Robb 2008; Slavishak 2008 for a holistic study of the many narratives of the working male body). In this chapter, my focus on corporeality is on how supernatural and non-human elements in metallurgy were linked to the materiality of the work, that is, the body and the site. It seems that for viewers, the corporeality of past labourers consisted of a mixture of supernatural and professional skills that were manifested in how their body reacted to fire.

As the industrialization process continued in the beginning of the 20th century, the strong, fire-resistant body of a smith seems to have become a political symbol of the worker class, an iconic industrial body (see Slavishak 2008). The shirtless, muscular smith with a big hammer was a common theme on covers and other illustrations of political magazines, and variations on this theme form the majority of my image data (Fig. 9.5). Smiths are represented from an extremely corporeal aspect. They are depicted shirtless despite the fact that in reality they wore heavy protective clothing, such as leather aprons and goggles (Nirkko et al. 1990: 94. See Fig. 9.6. However, a newspaper article argues that many accidents in metallurgy would have been easy to prevent if only workers wore the protective clothing they are offered. See Hall 1926). Attention is paid to bodies and power, which highlights masculinity. In comparison, industrialists are shown as old, plump, tiny, unmasculine men (Fig. 9.7; Fig. 9.4). These pictures were made for political purposes, but their symbolism is borrowed from the old myths about the smith's extraordinary corporeal features and power. Corporeality is an essential part of the work. Senses and bodily experiences were important in early metallurgy. The process was observed via the sound, smell, colour, and feel of the material (Kuijpers 2013: 143–144). Corporeality, as Kuijpers (2013) puts it, is the skill of using one's senses in a way that leads to the desired outcome. The tricks that smiths did are related to same ability to observe metal with their senses, which was why they were able to determine when it was safe to touch the hot metal. In the illustrations above, however, these sophisticated bodily skills are not represented, only raw muscular power. At the same time, propaganda stories suggest that these men were victims who suffered from the heat and heavy work at factories. In textual sources, the industrial body is referred to as a source of power. For example, a poem called ‘Steel hell’ describes mill workers as ”harsh and sooty men, wounded by metal and fire” (Untamo pseudonym: 1922), which is the opposite of the message in the pictures.

Figure 9.5. Shirtless smith figures from several labour magazines. Common features are the unprotected body, masculine features, and a hammer. All of these symbols, or at least some, appear in several illustrations. Illustrations from magazines, top left to right: *Tie vapauteen* 1926, *Tie vapauteen* 1929. Bottom left to right: *Uuden ajan kynnyksellä* 1915, Tie vapauteen 1929, *Eteenpäin* 1909. (Pictures: Digital collections of the National Library of Finland.)

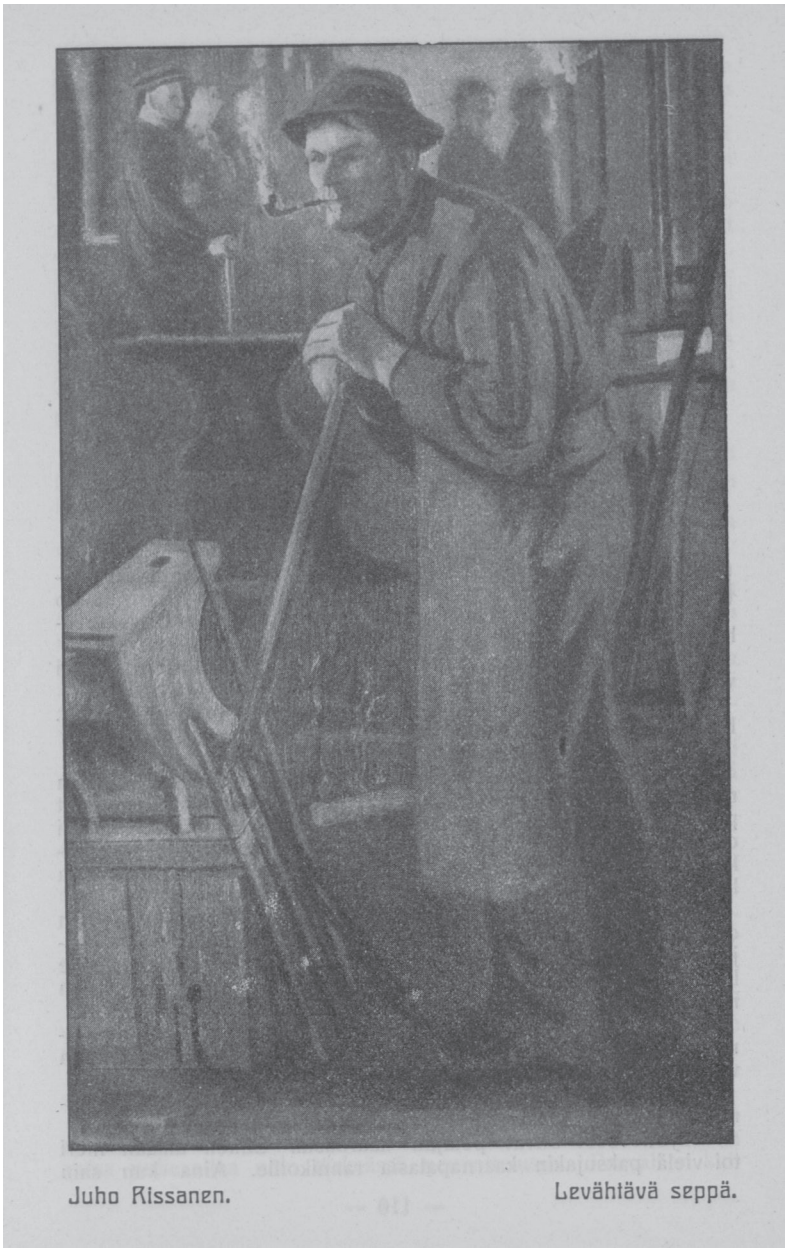

Figure 9.6. Juho Rissanen's drawing 'A resting smith' represents an industrial smith in protective clothing. Illustration for the magazine *Uuden ajan kynnyksellä* 1907. (Picture: Digital collections of the National Library of Finland.)

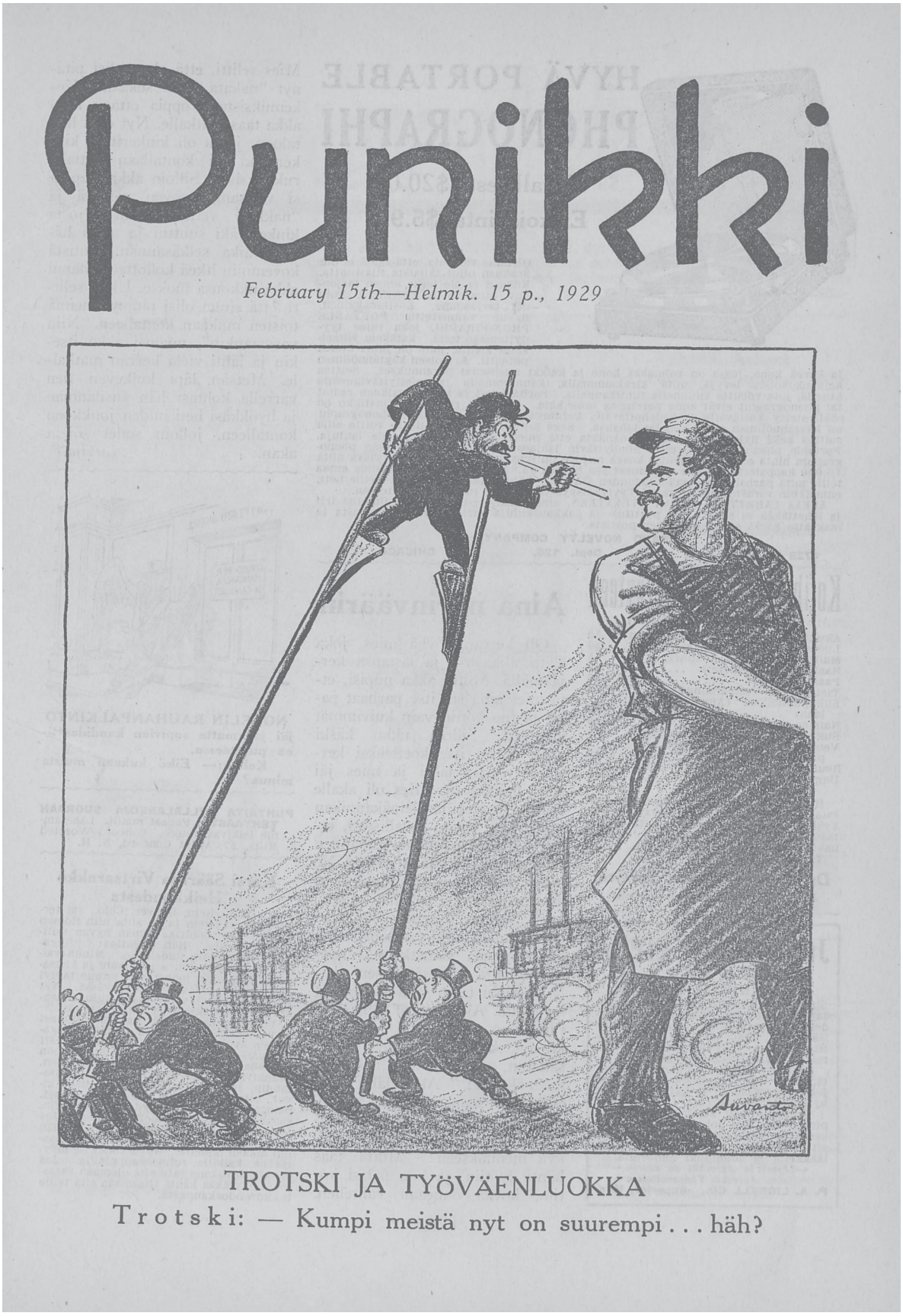

Figure 9.7. Unmasculine industrialists and a strong heroic smith with factories as a background. Cover illustration of the magazine *Punikki* 1929. (Picture: Digital collections of the National Library of Finland.)

9.3. Magical thinking in the industrial context

Christianity and early industry were interlinked in the iron mills of the 17th to 19th centuries in Finland and Sweden. Mills had their own churches, priests, and graveyards, so that Christianity was visible in the material culture of industrial spaces. The lifestyle of mill communities resembled the modern lifestyle of cities in contrast to the countryside around them (Monié Nordin 2012: 152). However, traditional folk religion and magic seem to have been practised in mill communities still in the 19th century. Only 3% of Finns were employed in industry in the 19th century (Talve 1980: 267), and considering the marginal nature of the industrial lifestyle, there are surprisingly many examples of magic from mill communities (magic was used, for example, in searching for the mill's cow that had run away (Appendix 9.1 N:o 18), preparing for hunting (Appendix 9.1 N:o: 19), and healing different kinds of diseases and pains (Appendix 9.1 N:o: 20). Mill residents were also scared of ghosts and believed in premonitions (e.g. Gustafsson 1974: 20)).

Mill buildings and iron objects in a mill context had also links to magical thinking. At least some mill buildings were protected by building concealments. The main building of the Karstula Kiminki mill was protected by placing a coin between the first log and the corner (Appendix 9.1 N:o 21). At its opening ceremony, the Kiminki mill was claimed to be the most modern factory in Finland (Nirkko et al. 1990: 22). At the Junosuvanto mill, a spell was cast to enchant the iron before starting to work on an axe or other iron tools (Appendix 9.1 N:o 22). At the Harjavalta mill, a ritual called 'the Barbaara tradition' was followed, which meant that when an oven was ready, builders went in to banish Barbaara, an evil spirit that had to be exiled from the oven. If this was not done, the oven could collapse or crack or "for sure something would happen in this oven". This ritual was performed for every oven in the Harjavalta mill as late as the 1950s (Nirkko et al. 1990: 179).

In premodern Finland, material culture had two roles. Objects were used for their primary functions in everyday tasks, but at the same time they represented supernatural powers (*väki*) depending on their material and use. For example, a knife represented iron and fire *väki* because it was made of iron with fire. There were several *väki* forces, like those of earth, fire, iron, and water (Hukantaival has drawn up a good summary of *väki* in terms of material culture, see Hukantaival 2017: 52–53, 141; fig. 45). Objects made of iron (i.e. made by a smith) were thought to have supernatural powers because they were made with fire *väki*. According to one saying, 'forge *väki*' was the most powerful kind of *väki* (Appendix 9.1 N:o 23).

Factory-made metal objects were important in many modern spells. To cure eye disease, you "had to use a mill-made knife so as not to know who had made it" (Appendix 9.1 N:o 24). A spell for getting back stolen goods required "a knife that still has the factory label visible [...]" (Appendix: 25), and a spell for treating snakebite required "a factory-made knife" (Appendix 9.1 N:o 26). Anonymity was an important feature for a charm because personal powers associated with objects made by someone known could be dangerous. That is why broken and found objects (often prehistoric) were preferred as charms (Hukantaival 2017: 140). Issakainen (2012: 136) says about the anonymity of charms: "[...] the charm has to be really old. A typical example of this idea is "a knife whose maker is unknown"". Consequently, modern factory-made objects were assimilated with prehistoric ones. Industrialization did not cause the supernatural features of iron objects to disappear but added a new dimension to the magic, making iron objects even more powerful charms because of the guaranteed anonymity proven by the factory label.

Metallurgy has sometimes been regarded as the first 'science' and a step towards rational thinking (Kuijpers 2013: 139), but it has turned out that the skill was carried on through a series of secret information (Budd and Taylor 1995: 136–138) rather than scientific methods. Thus, the urge to define the starting point of pure rationality has led to the assumption that industrial metallurgy at last was scientific, standardized, and rational. Still, even as late as in the 1940s, the metal industry in Finland

was mostly based on hands-on experience. ”When something went wrong, people relied on magic tricks or just waited until everything worked again, even though nobody knew why” (Nirkko et al. 1990: 163). Komu (2019) has argued that a lot of this kind of wishful and non-rational thinking still exists today, for example, in the mining business. Industry-made charms prove that industrialization was not a step towards rationality in a way that would eliminate all non-rational aspects from metallurgy. Budd and Taylor (1995: 140) write about metallurgy getting more industrialized (meaning organized and centralized) in prehistory: ”There is no reason to see why power and charisma, once channeled via the spectacular alchemy of metallurgy, should have moved away from it […].”, and I would assume that this is valid also with regard to the later industrialization process. The factory seal represented both modern technology and power as a charm. Issakainen (2012: 53) also argues that modern phenomena and objects were adopted as instruments of magic, and they may even have maintained belief in magic.

The connection between folk beliefs and industrialization is illustrated in a spell that was used in Suomussalmi in the early 20th century for healing wounds made by metal objects. ”A wolf ran in the swamplands, a bear ran in the woodlands, the swamplands arose in the wolf’s pawprints, the woodlands arose in the bear’s footprints, thus grew an iron mill” (Appendix 9.1 N:o 27). The poem is a variant of the ninth rune of the *Kalevala* (the Finnish national epic, which consists of folk poetry collected in the 19th century), ‘the origin of iron’, in which the things that arose from the animals’ paws were related to pre-industrial metallurgy. The spell combines folk beliefs and industrialization. The old poem is modified into the birth story of a modern phenomenon mixing sacred animals and industrial buildings. Another layer is added by the fact that the spell has probably been used for healing wounds caused by industrially made metal objects.

9.4. The Devil and the labour movement: The old myth reinterpreted

Stalinism in the 1920s cherished embodied worker heroes who built a new world. Religious symbols, mythology, and discourse related to Heaven and Hell are present in Stalinist industrial projects like the building of the Moscow metro, which was planned as ‘a paradise built in the underworld’, seen as some kind of holy place of Stalinism. The whole project was ‘mythologically saturated’ (Lives 2009: 83–84. See also Boer 2007: 447). Lives (2009: 84) argues:

”[...] the worker’s lack of technical know-how or of the proper equipment is promoted as a virtue, since it allows her or him to press beyond a mechanistic worldview into the realm of utopian construction proper. This, in turn, mirrors what several scholars have described as Stalinist culture’s marginalization of technical and professional languages in favour of a single, quasi-religious or mythological superdiscourse. Human beings, it was argued, are characterized by their ability to press beyond available norms into the realm of the fantastic and the miraculous. Man − not machine − is born to make the fairy tale come true.”

I would argue that this idea may be a counterpart to the fear of machines that people felt in the early years of the modernization process. The idea was made visible via the pictures discussed above. The shirtless smith figure is a symbol of these ideas, and it borrows from ancient stories of the smith’s extraordinary skills. The cover illustration of a magazine from 1930 shows this idea via a smith figure depicted as a god creating a world of machines (Fig. 9.8) and in a way returning the ‘natural’ order where humans rule and machinery is no longer frightening.

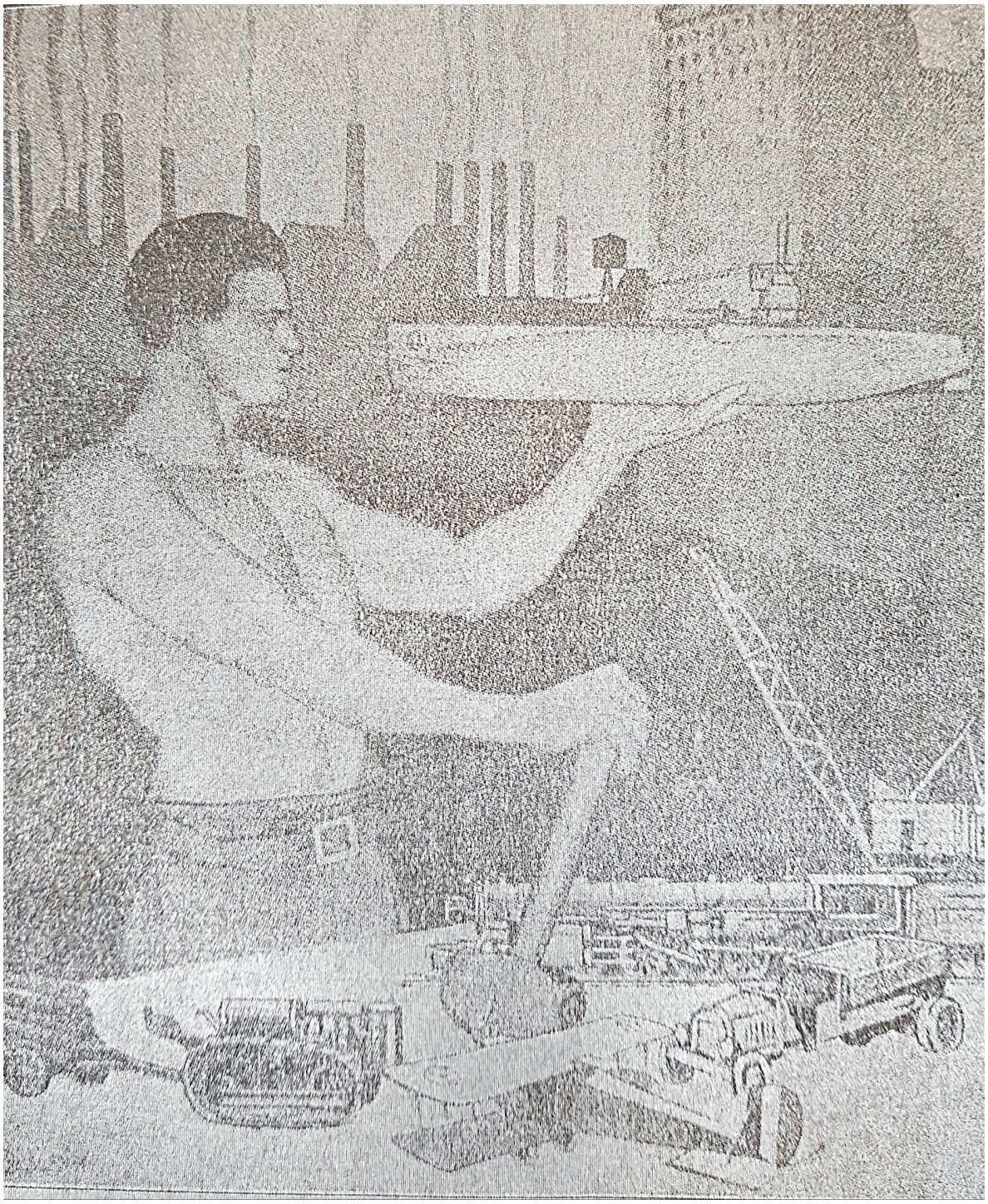

Figure 9.8. A god-like industrial body, a smith figure creating planes, ships, and other machines. Cover of the magazine *Tie vapauteen* 1930. (Picture: Digital collections of the National Library of Finland.)

9.4.1. The Devil and early factory owners

Linking the Devil with factory owners started already decades before the labour movement in the 19th century. One typical form of Finnish folklore Devil stories is the story of the Devil who enters a factory owner's estate and has to be exorcized by priest. The priest asks the Devil to enter via a hole made in the lead that supports windowpanes (see Simonsuuri 2017: 231). Usually the owners are referred to as freemasons (Simonsuuri 2017: 231–233) who have made a deal with the Devil and promised him their souls for some benefit in return. The exorcist was needed when the Devil returned to claim his prize. In the Seinäjoki version of this story, told in the Östermyra mill in the 19th century, the Devil comes to the Östermyra mill several times wanting to see the owner and buy some gunpowder because the owner has been buying and selling so much that "the Devil was interested too". However, the owner soon noticed that "he is not a man even though he looks like a man". When the priest finally exiled the Devil through the hole in the lead, a snowstorm hit the mill area, covering everything in snow. This was later named 'the mill owner's storm' (Kivisaari 1969). The fact that all this happened because of the owner's deal with the Devil was left unmentioned, but points of resemblance with other versions allow us to assume this between the lines. The informant says that the owner never sealed the deal and that is why the Devil kept coming, which is a typical feature in these stories. The Devil wanted to claim his part of the deal.

The Östermyra example fits the typical pattern. Factory and mansion owners have generally been attached to the Devil. There is a saying: "this way, said the Devil to the factory owner" (Pulkkinen and Lindfors 2016: 257), and also Forsberg states in his study of conflicts between mill owners and workers that "in stories owners were frequently allied with the Devil" (Forsberg 2014: 160). Åström (1995) mentioned the same in her studies, which discuss the attitudes of Finnish-speaking peasants towards mansion owners. It appears that the non-human was attached to owners in many negative ways. The origin of the mansion and its owners was explained as one of the Devil's misdeeds (the Devil had dropped them on earth). Their actions were explained with connections to the Devil, and ghosts and other horrific things were linked to mansions (Åström 1995: 211–212). The luxurious material culture they shared was also attached to the Devil (Mikkola 2009: 213).

Åström focused primarily on mansions and beliefs attached to them, but these conclusions have links to industry, as early industry and mansion culture were both practised by the Swedish-speaking nobility. The nobility and ordinary mill workers had a lot in common. The mansion as the main building was an essential part of early industrial complexes. Some of the mansions Åström studied included small-scale industry, like sawmills and dairy industry (RKY 2019). Otherness and disparity culminated and became visible through the language barrier (the nobility spoke Swedish), different and new sources of livelihood (industry), and a different lifestyle (mansions), which were the reasons why both noblemen and industry workers were linked to the Devil by residents. Locals used to call the Östermyra mill workers devils (Alanen 1970: 281). The nickname evolved from the same otherness that was felt towards the mansion owners.

9.4.2. The Devil and industrialists

When the Devil had thus begun to appear also as an ally of the factory owners, it was easy for the 20th-century labour movement to continue the story. Newspapers and magazines published stories where horror imagery and the Devil were attached to manufacturing, but whereas earlier the factory itself as a material space had awakened thoughts of the non-human, now the evil was seen in the ideology behind it, namely capitalism. Just as in the case of the older stories, it was typical that the same stories circulated. One widespread story was 'The priest and the Devil' which was published in Finnish in several magazines in the early 20th century.

A text from 1902 tells about Satan, "a hideous, nasty ghost from the brimstone world", and his travels. He has three favourite places: marriages, sites of business, and factories. In factories he pro-

vokes workers to strike and even tries get them to blow up the owner's office with dynamite. Satan visits the owner as well and tries to give him ideas of how to exploit the workers even more. Finally he burns the whole factory while laughing: "Such fire and smoke! I love smoke!" (Unknown author 1902).

Strikes are a typical element in these stories. In 'The Devil and the scab' (1909), the Devil finds out that workers are planning strikes. The Devil participates in meetings as an infiltrator and tries to prevent the strikes because he wants the workers to stay poor and oppressed. He is afraid strikes would change that. He makes a deal with a scab. Finally the scab and his family end up suffering and "thereof may the Devil and factory owner rejoice, since they managed to turn a glimmer into even gloomier darkness" (D. T., pseudonym 1909: 7). A poem from 1922 calls people to strike and calls mills "brutal iron hells" (Untamo, pseudonym 1922).

On the other hand, one typical feature of the Finnish folklore Devil is that he is sometimes friendly, and in some of these stories he sides with the workers. In 'Workmen and the Devil' (1908), the Devil saves workers from evil owners and hires them for his own factory, where the labour force is treated well. The owners meet the Devil to negotiate how to get the workers back. The Devil tells them about his factory's good conditions: he provides the best level of occupational safety and health, including eight-hour workdays, friendly treatment, and the right to strike and unionize (Unknown author 1908: 67–70). Klemettinen (1995) quotes oral history from 1939 that relates how the problem of haunting was solved in a certain house because the Devil left the house to work in a factory.

A Finnish magazine cover from 1909 (Fig. 9.9) shows an industrial version of the ancient theme, the struggle between the smith and the Devil. The iconic smith figure, the industrial body, has triumphed over the evil creature. The red colour and defiant composition refer to labour-related political

Figure 9.9. A smith fighting a devil-like evil creature. Cover of *Punanen Häme* 1909. (Picture: Digital collections of the National Library of Finland.)

ideas, showing labourers winning industrialists, or maybe a skilled male body winning modernization and machines. However, this picture borrows imagery dating thousands of years back. The evil beast, metallurgy, and the body of a man – these are the basic elements that have their origins in prehistory and the dawn of metallurgy. The picture shows that the connection between the Devil and the smith still exists in the industrial context. It does not matter whether this was an intentional reinterpretation of an old myth or the myth living on naturally in a slightly altered form, because in both cases the main point is that people considered the smith and the Devil as symbols that belonged together regardless of what those symbols meant in certain pictures. The picture summarizes how industrialization affected beliefs and myths related to tasks that were changed through the process of industrialization. Forges moved into workshops, but the Devil moved too. Non-human elements did not disappear as old-fashioned out of modernity's way. Stories of horrific factories and the Devil messing around in the labour movement tell us that lots of absurd things were attached to industry and that it should be viewed as a potentially silly, non-rational, and surprising phenomenon, as everything we humans do.

9.5. Discussion

In this chapter, I sought to answer questions about how industrialization changed the link between the smith and the Devil and how physical examples of work and the supernatural changed over time. It seems that these elements were linked during the period of industrialization and continue to be linked. The physical examples through which non-human powers were manifested in the context of metallurgy remained the same: the worker's body and the workplace.

The relationship between the Devil and metallurgy can be divided into three periods. The oldest originated in prehistory and the mystification of the skill of controlling fire and transforming matter with it. The non-human teacher of that skill visits smiths regularly, so forges are seen as places where the Devil and other creatures might appear. The second period in the second half of the 19th century continues with the old traditions of attaching horrific, supernatural terms to metallurgy, forges, and smiths by describing relatively new industrial metallurgy like mills as places, their workmen, owners, machines, and industrial processes in the same terms. The third period at the beginning of the 20th century exploits the imagery related to factories, the Devil, and Hell, which had become traditional by that time, to propagate the ideas of the labour movement. The mystification of the smith's strong, almost non-human body is used as a symbol for the strength of labourers in comparison to factory owners, who are ridiculed.

I would summarize that the main point of connection between the smith and the Devil has always been the human body and its skills and endurance. The elements of the myth (the combination of the human body with fire and metal, as well as the space in which the body has enacted with them) have remained stable, but the meanings given to different elements have changed depending on the time and place. Fire has been honoured and the ability to control it made the smith honoured, but in the 20th century, fire in the form of the heat of foundries and forges turned into a symbol of the labourer's misery. The smith's body had been admired for its strength and skills, but after industrialization that body was seen as exploited, wounded, and in need of freeing, although at the same time the old myth of the smith's non-human corporeality was used in pictures. Originally the smith and the Devil were linked by mastering fire and metallurgy, the Devil being the teacher of these skills. He both taught and bullied the smith and sometimes asked for his help. Other supernatural creatures in smithies were guardian spirits that originated from folk religion and were mixed with the Devil stories. In the industrial context, the factory seal became a guarantee of magic powers and the Devil begun to work in a broader field, becoming the partner of factory owners and helping them to get rich. Smiths ended

up looking like devils when working by the fire that looked like the flames of Hell. Finally, when the labour movement begun to spread, the Devil was seen as attending strike meetings and setting up his own factories. He had an active role in agitating members in the labour movement. He had moved from metallurgy to politics. The Devil was a familiar character around industries because they were emblems of modernity, and modernization was in most people's opinion 'against God's will'. The result, according to folk theology, was that industry was ruled by the Devil.

The changing role of the Devil in the context of metallurgy is related to new phenomena and otherness, how it is treated, what attributes are attached to it, and finally what was considered as 'other' in certain periods. At first, the smith was different because he knew metallurgy and his body seemed different. Smithies were places where metallurgy took place and taboos were broken. Scary features were attached to these places that were unfamiliar to most people. After industrialization begun, otherness shifted from smiths to factory owners. They were Swedish-speaking nobles, and most mill workers shared some of these attributes, which also made them different. After industrialization took place on a larger scale, the Devil started to work with factory owners. Otherness and the attempt to highlight the inhumanity of the industrialists is obvious and easy to understand as the aim of telling such stories in general.

Altogether, the overview of the shared history of the Devil and metallurgy shows that superstition and stories of the non-human have taken place in the industrial context. Mills were places where, despite an external and superficial veneer of Christianity, old heathen customs related to controlling fire and the power of iron objects remained active. The mills were symbols of modernity, but this even strengthened the supernatural qualities attached to the subject. These ideas originated in prehistory and were later used for political benefit. Examining whether the tradition of building concealments continued at industrial sites would be a reasonable way to study how factories may have been guarded by means of supernatural and other beliefs in the industrial context. This would be best studied with archaeological methods. Because of the placement of such concealments, they have likely remained *in situ* despite fires and other destruction and they may be findable even if only stone structures remain. It would be easy to focus the excavations on certain areas underneath the furnace. This would be an interesting subject for further studies. As a result, I suggest that industrial archaeology take into consideration the existence of unexplained and supernatural aspects in industrial processes and the related material culture.

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N:o	Reference	Locality	Informant	Supernatural	Context	Dating	Collector
1	FLS FA E261	Kivijärvi	b. 1876	Devil	Smith banned from Heaven and Hell	1937	Jalmari Leppänen
2	FLS FA G901 10642	Rautavaara		Guardian spirit	Smithy	1885	Kaarle Crohn
3	FLS FA G901, 432	Joroinen		Guardian spirit	Smithy	1938	Kyllikki sutinen
4	FLS FA G901, 421	Kangaslampi		Guardian spirit	Smithy	1894	O.A.F. Lönnbohm
5	FLS FA G901, 89	Kiuruvesi		Guardian spirit's looks	Smithy	1936	Juho Nivalainen
6	FLS FA G 901, kt 135, 13	Suistamo (nowa-days part of Russia)		Guardian spirit's looks	Smithy	1938	Stephan repo
7	FLS FA G IIII KRK 170, 120	Pielisjärvi		Fire väki	Fireplaces	-	Saarelainen J.V.
8	FLS FA G IIII KRK 126:285	Lammi	56 y. o. woman	Fire väki	Cursing by fire	-	Kinnari Yrjö
9	FLS FA KRK 25:803	Nakkila		Fire väki	Blessing the fire	-	Vihtori Grönroos
10	FLS FA, 634	Karstula		Fire väki	Insulting fire	1938	Albert Rautiainen
11	FLS FA	Kokemäki		Smith and fire	Urinatig	1893	O. Ahti
12	FLS FA D611 KT 58	Sysmä	b. 1871	Smith and fire	Nonflamma-ble apartment	1938	Uurasmaa Hulda
13	FLS FA KRK 118:235	Tuusniemi		Smith and fire	Nonflamma-ble body	1935	Otto Räsänen
14	FLS FA, SKVR, VI1, 3002, n. 15023 b.	Pielavesi	Mill worker 65 y. o.	Smith and fire	Nonflamma-ble body	1885	Kaarle Krohn
15	FLS FA E201, KRK 75: 415	Toivakka	65 y. o.	Smith and hot iron	Nonflamma-ble body	-	Valkeinen Jalmar
16	FLS FA KRK 78:31	Sulkava		Smith and hot iron	Nonflamma-ble body	-	Karppinen Juhani
17	FLS FA	Kokemäki		Smith and hot iron	Mill, nonflam-mable body	1893	O. Ahti
18	FLS FA, SKVR, VII5, charms, 3976	Nurmes		Magic at mill	Wizard seeks for mills cow	1885	Kaarle Krohn
19	FLS FA, SKVR, VI2, 4874	Sonkajärvi	39 y.o. Heard the spell from older mill worker	Magic at mill	Good luck for hunting	1885	Kaarle Krohn
20	FLS FA, SKVR, X2, 4898			Magic at mill	Healing	1889	J. F. Ollinen
21	FLS FA, KRA	Karstula, Kiminki		Guarding the mill	Building con-cealment	1809, 1944	Albert Rautiainen
22	FLS FA, SKVR, XII2, 7774	Junosuvanto		Magic at mill	Enchanting iron	-	J. Paulaharju
23	FLS FA G901 TH 29:4	Evijärvi		Forge väki	Most power-ful väki	1961	M. Järvinen
24	FLS FA, SKVR, VI2,			Magical powers of mill made objects	healing	1890	Vihtori Alava
25	FLS FA, SKVR, IX3, 1610	Iitti		Magical powers of mill made objects	Getting stolen things back	1902	R. Kojonen
26	FLS FA, SKVR, XI, 1429	Kortesjärvi		Magical powers of mill made objects	Snake bite treatment	1888	M. Nurmio
27	FLS FA, SKVR, XII2, 6684	Suomussalmi	75 y. o. wizard	Birth story	Iron mills origin, healing enchantment	1917	Samuli Paulaharju