

Ilmarinen and Popular Techno-Utopian Conceptions*

Alongside Väinämöinen, Ilmarinen is a central figure of kalevalaic epic and it was sometimes even claimed that he was Väinämöinen's brother, yet in both the kalevalaic poetry and in academic research, Ilmarinen has nevertheless remained in the shadow of his more famous companion. Mikael Agricola, the Finnish reformer and translator of the Bible, included a list of the pagan gods of the people of Häme and another of the people of Karelia in the introduction to his translation of the Psalter (1551). Among the gods of the people of Häme, Agricola included Ilmarinen as a divine being on a par with Väinämöinen.

The name *Ilmarinen* appears among the old surnames of Finland Proper and Satakunta¹ and as a place name in Finland Proper. In addition, according to tax records from the 16th century, there were people with the epithet *Ilmarinen* in Ruokolahti and Juva. (Vahtola 1987: 40.) The name Ilmarinen, as well as some features which indicate his divinity, have their background in old Finno-Ugric mythology. The name of the sky-god of the Udmurts is *Inmar*. The earliest mention of Ilmarinen in Finnish written sources is in Mikael Agricola's list of pagan gods, where Ilmarinen is presented as the people of Häme's god of the sky or weather, and also as a protector of travellers. Uno Harva presents additional evidence which indicates the divinity of Ilmarinen. For example, he mentions the ruler of weather *Ilmaris* among the Sámi, and examples of incantations which specifically refer to Ilmarinen as the creator of good weather and favourable winds – in other words as filling a role corresponding to that found in Agricola's list. (Harva 1946.) The figure Ilmarinen as such also bears a similarity to the Germanic god Nj rðr. According to Harva, however, there is no real indication that Ilmarinen could have been the sky-god who fertilizes the earth with his rain and thunder. The only sign of this is in the frequently appearing motif of Ilmarinen together with Väinämöinen as the creators of the first fire at the beginning of the incantation, *The Origin of Fire (Tulen synty)*.

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In old epic kalevalaic poems, Ilmarinen is first and foremost a cultural hero, a smith of superhuman skill who created various necessary things in the world. Sometimes his skills as a smith swell to cosmic proportions. In the *sampo*-poems, Väinämöinen negotiates the fashioning of the *sampo* in the chthonic realm of Pohjola, during which he mentions forging the vault of heaven as one of Ilmarinen's great feats:

Ei ole seppeä selvempeä, Takojoa tarkempoa, Kuin on seppo Ilmorini: Se on taivosen takonun, Ilman kannen kalkutellun; Ei tunnu vasaran jälki, Eikä pihtiem pitämät. (SKVR I ₁ 84, 125–131.)	There is no smith cleverer, no craftsman more precise, than is the smith Ilmorini: he has forged heaven, hammered the vault of the sky; no trace of a hammer can be felt, nor marks of the tongs.
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There are also references to the same heroic feat in other epic poems, on the basis of which it is assumed that there was an independent mythic poem about Ilmarinen creating the vault of heaven in an earlier period (Kuusi et al. 1977: 524). There is no description of Ilmarinen forging heaven in the poems. Only the final result of his work is mentioned as an accomplishment after the fact in the *sampo*-poems. Above all, the creation of the cosmos would have an archaic mythic foundation connected to divinity or to the actions of a cultural hero at the beginning of time, but which would not have been connected to the later, more human side of Ilmarinen. Ilmarinen, or an otherwise unnamed smith, also made the rake used to retrieve the world-egg, Lemminkäinen or Väinämöinen from the bottom of the sea. Contemporaneous with these mythic works of creation, Ilmarinen made numerous things which were necessary in daily life and also jewellery for the people closest to him. In a version of *The Origin of Iron (Raudan synty)* from Viena Karelia is encountered the following short list:

Oli seppä Ilmollini, Se pani paitansa pajaksi, Turkkisa tuhuttimeks, ² Vasaraksi kynäspeä, Polvesa alusimeks, ³ Se tako naisten tarpehia, Vyölliskoukkuja kohenti, Naisten neulojen neniä, Miesten miekkojen teriä. (SKVR I _{4,1} 133, 21–29.)	There was the smith Ilmollini, he set up his shirt as a smithy, his fur coat as the bellows, as a hammer, his elbow, his knee as an anvil, he forged women's paraphernalia, repaired belt hooks, the points of women's needles, the blades of men's swords.
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Oli seppo Ilmarinen, Tako rauasta rahia, Hopiasta huolitteli (SKVR VII ₁ 436, 1–3.)	There was the smith Ilmarinen, forged an iron stool, one of silver, fashioned
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In *The Courtship Competition (Kilpakosinta)* and *The Courtship of Hiisi's Maiden (Hiidestä kosinta)*, the night-maiden or other young woman comes to Ilmarinen and informs him that a competing suitor has set out, demanding jewellery as payment for information about this:

Hoi'ot seppo Ilmarinen,	Oh, you are the smith Ilmarinen,
Taos risti rinnalleni,	forge me a cross for my breast,
Päällä pankani paranna,	improve the band I wear,
Koske korvirenkahani!	touch my earrings!
Nyt sanon hyvät sanomat.	Now I will tell you the good news.

(SKVR VII, 434, 56–60.)

One of Ilmarinen's mythic feats is making the first *kantele*, the traditional Finno-Karelian harp. In some variants, the *kantele* was created from parts of the great pike which Väinämöinen caught:

Tuo on seppä Ilmarinen	That is the smith Ilmarinen
Takoja iänikuinen	craftsman, of age eternal
Tako tuosta kanteleisen	forged from that a <i>kantele</i>
Hau'in suuren hartioista	from the shoulders of the great pike
Ve'en koiran koukkuluista	from the hook-bones of the dog of the water

(SKVR VII, 626, 84–88.)

Other alternative materials are the bones of other animals, such as birds or wild reindeer. In Matti Kuusi's opinion, it is possible to recognize remnants of ancient animal myths which have tendered resources for the first *kantele* in *The Origin of the Kantele (Kanteleen synty)*. (Kuusi 1963: 148–150.)

According to Kuusi, images of *Kalevias*, ancient smith-god of the Balts, stand in the background behind the figure of Ilmarinen as a skilful smith. Kuusi, and before him August Ahlqvist and E. N. Setälä, considered it very likely that the name of the Finnic hero *Kaleva* derives from the word *kalvis* ['smith']. Marija Gimbutas has also mentioned *Kalvis*, *Kalvaitis* and *Kalvelis* as the heavenly smith, a hero similar to Hephaestus, Völundr and Ilmarinen (Gimbutas 1963: 202), but the Baltic etymology of *Kaleva* has been criticized (Junttila 2005: 55).² In southern regions of kalevalaic poetry, the smith is often referred to as *Viron seppä* ['smith of Estonia'], and identified as *Kallas*, *Kauko*, or *Kalervikko* in parallel lines. In more northern regions – Savo and Karelia – *Ilmarinen* and variations similar to it dominate. (Kuusi 1963: 153–157.)

Epithets of Ilmarinen in the corpus of *sampo*-poetry are, among others, *takoja iän ikuinen* ['craftsman, of age eternal'], *seppo selvä mies* ['smith, clever man'], *seppä Jumalan luoma* ['smith, created by God']. In addition, Ilmarinen is presented as a relative of Väinämöinen in some variants of the poems: *sepposeni veijoseni* ['my dear smith, my dear brother']. Ilmarinen and Väinämöinen are described as brothers in many poems. Joukahainen is also sometimes added to the list of brothers. (Kuusi 1949: 127–128.) Actual familial relations are not necessarily in question as this brotherhood could simply be a metaphorical expression indicating a close relationship – they

are like brothers. It is true that in *The Runo-Poem of Iro-Maiden (Iro-neidon runo)*, a runo sung in Ladoga Karelia in particular, the main figure is said to give birth to three sons, who were named Väinämöinen, Ilmarinen and Joukahainen (SKVR VII₁ 63–100). However, owing to this poem's age, the brotherhood appearing in it is not to be compared, for example, to that of the *sampo*-poems. According to Kuusi (1949: 128), Ilmarinen and Väinämöinen are presented as equal in the main redaction of *The Courtship Competition* in Viena Karelia, whereas in Finnish Väinämöinen is favoured, and in Ladoga and Olonec Karelia it is Ilmarinen.

Ilmarinen's Feats of Skill

Ilmarinen is mentioned as the liberator of the lights of heaven in some variants of poems in both Viena and in Ingria. For example:

Oi on seppo Ilmorini, ku on taivosen takonun, ilman kannen kalkutellun, oikein otavat tehny, tähen taivon taitavasta. Kuun peässit, päivän peässit yhöksän lukun takoata.	Oh, there was the smith Ilmorini, who has forged heaven, hammered the vault of the sky, fashioned Ursa Major well, skillfully, the stars of heaven. You released the moon, released the sun, from behind nine locks.
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Mantereen mattaala mies, itse seppoi Inkeroin, loi tuo tähet taivahasse, pani päivöin paistamaa ja kuun kumottammaa. (Setälä 1932: 142.)	The short man of the mainland, the smith Inkeroin himself, that one created the stars in heaven, placed the sun to shine and moon to glow.
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From the perspective of epic, however, the most significant object made by Ilmarinen was the *sampo*. The poems provide a rather vague depiction of this feat, but the descriptions, however impoverished and inconsistent, have been researched in great detail (e.g. Setälä 1932; Harva 1943; Kuusi 1949). For the most part, they are in agreement concerning the manner in which the *sampo* is made, representing an act of forging, which naturally stands at the heart of the professional skills of a smith. Nonetheless, the materials for making the *sampo* bring to mind

the folk poems' diverse symbols of impossibility: *yhen joukosen sulasta* ['from one feather of a swan'], *yhen värttinän murusta* ['from one piece of a spindle'], *yhen otrasen jyvästä* ['from one grain of barley']. (Kuusi 1949: 142–143.)

The portrayal of the *sampo*'s significance provided by the corpus of poems is as incoherent as its essence. The unifying feature of these portrayals is the material good which the *sampo* produces: grain, salt, money, and more abstractly all of the goodness, richness of the world. (Harva 1943: 27; Kuusi 1949: 145–146.) According to information recorded by Carl Axel Gottlund

in Taalainmaa, the greater part of the *sampo* flew into the sea in the final battle over its possession. If more of the *sampo* would have been retrieved to the earth, then “ois wilja tullut ilman kylwämätä” [‘grain would have grown without sowing’]. (Harva 1943: 14.) In the minds of the singers, the *sampo* was, overall, a complicated device made by the smith-hero and which provided material wealth to its possessor. As such, the *sampo* was associated with a form of utopian conception of what could be obtained through an ideal employment of the technology of those times.

The most common image of concrete representations of the *sampo* is as some sort of mill. A parallel with ancient Germanic epic is encountered here in the mill *Grotti*, which was said to grind into the world any material good desired by its possessor. It is also told that *Grotti*, like the *sampo*, was stolen from the north. In his study on the *sampo* (1943), Uno Harva described Viktor Rydberg’s conceptions of the mill *Grotti*. Rydberg, in his research on the narratives surrounding the mill *Grotti*, pointed out that an ancient representation of the cosmic rotation could stand behind this tradition. Like time itself, the starred heavens move at a steady even pace, as though driven by some type of machinery which is not dependent on any particular will. For its part, the mill was the most complicated device known among Germanic peoples for a very long time, and as such it was the pinnacle of technological accomplishment in that era. (Rydberg 1886–1889: 436–438; Harva 1943: 91–92.) In addition, a mill concretely ground material goods for people. Because of this, it was only natural to imagine the abstract *sampo* in the form of a mill-like device. Rydberg himself viewed the Germanic cosmic mill as connected to Finnish notions of the *sampo* and also to Indian conceptions of a cosmic rotation machine.

Alongside the crafting of the *sampo*, the forging of a golden maiden is the most central achievement of Ilmarinen in epic poems. In the corpus of *sampo*-poems, *The Forging of the Golden Maiden* (*Kultaneidon taonta*) is often adjoined to the end of versions of *The Courtship Competition*: the competing hero who does not acquire the maiden makes a woman of gold for himself as a consolation, yet the golden woman is not the same as a real one. Poems of West Ingria describe how Ilmarinen (or more commonly an unnamed smith) was upset because people teased him for living without a wife, and this was the reason that he made a golden maiden:

Siellä sepyttä soimattii,
Soimattii ja loimattii:
“Sepyt naisetta ellää,
Emännättä vanhenoo.”
Sepyt suuttu ja vihastu,
Kuvus kullasta emännän,
Hopiasta vaali vaimon;
Jäi kolmee vajjaa:
Kieltä suuhu, mieltä päähä,
Silmii pään sissee.
(SKVR III, 645, 29–38.)

There the smith was reproached,
was reproached and abused:
“The smith lives without a woman,
becomes old without a mistress.”
The smith grew upset, became angry,
formed a mistress from gold,
crafted a wife from silver;
three things remained lacking:
a tongue in her mouth, a mind in her head,
eyes inside her head.

In many variants of the poem, the creation of the golden maiden is described as a process which first produces additional extraordinary objects that inspire wonder and awe in others but do not satisfy Ilmarinen himself. In a text collected from Simana Sissonen, a stallion emerges from the fire as the result of blowing the bellows for three days, and Ilmarinen nonetheless shoves it back into the fire. The next attempt produces a boat, which Ilmarinen also returns to the fire, and on the third attempt, the result is what Ilmarinen desired: *Neito tungekse tulesta / punaposki lietsimestä* [‘a maiden rushed from the fire / the red-cheeked one from the bellows’]. (SKVR VII₁ 505, 41–42.)

In some variants from Viena Karelia, such as in those sung by the renowned singers Arhippa and Miihkali Perttunen among others, Ilmarinen loses the courtship competition and, after returning home, makes a golden maiden for himself as a consolation:

Siloin seppo Ilmarinen	Then the smith Ilmarinen
Alla päin, pahoilla mielin	with lowered head, in a bad mood
Kotih tullessansa	when he came home
Keräsi kekosen puita,	gathered a pile of wood,
30:tä rekiä;	thirty sleighs;
(SKVR I ₁ 469, 340–344.)	

In some variants from Viena Karelia, the roles are reversed: Ilmarinen wins the daughter of Pohjola and Väinämöinen makes a golden maiden for himself (e.g. SKVR I₁ 491).

Matti Kuusi viewed the poem about the golden maiden as associated with the old creation epic, both through its connections to other poems and through its style. However, it would not be the remnants of an old myth of the origin of human beings; Kuusi considered a more probable hypothesis to be that its roots are in a description of a cult statue. (Kuusi 1963: 159–161.)

The view presented by Mircea Eliade, that processing metal generally and that the melting and casting of metal in particular are associated with sexuality, becomes interesting when considering the forging of the golden maiden. On the basis of conceptions underlying some taboos, Eliade supposed that the melting of metal was considered to be a sacred sexual union, because of which the smith should invest all of his sexual energy into the melting event and abstain from other sexual contacts. The smith of the Bakitara tribe of Africa treats his anvil as his bride. (Eliade 1978a: 59–60.)

In Kalevala-meter poetry, sexuality is connected to the activities of the smith, although this is mainly in poems of the golden bride where it could however be a later addition, if Matti Kuusi was correct in his supposition concerning the original significance of the poem as an account of making a statue of a god.

The Character of Ilmarinen

Overall, the depiction of Ilmarinen as a person remains quite thin in comparison to that of Väinämöinen. In the poems, the only quotation commonly placed in the mouth of Ilmarinen is a warning to others not to make a woman out of gold for themselves. In folk poems, Ilmarinen is a secondary figure, a figure which helps others; he is a quiet, vaguely characterized technocrat, interested first and foremost in the accomplishment of his work and secondarily in obtaining a wife. Ilmarinen's purpose is to create the things which other figures of the epic poems require, and it was conceived as somehow possible that these objects could exist and be fashioned.

Kaarle Krohn came to a similar conclusion when he was studying the figure of Ilmarinen in folk poetry and in the various versions of *Kalevala*. In his view, Ilmarinen is handy and diligent, and is able to sink so deeply into his work that he could even lose sight of his own plans for courtship. Ilmarinen is a quiet figure. In *Kalevala*, Elias Lönnrot adapted him into a more talkative persona: of the seven incantations attributed to Ilmarinen in *Kalevala*, only two have precedents in oral epic. As a lover, Ilmarinen is impassionate. In *Kalevala*, Lönnrot added Ilmarinen to the section describing the anti-hero Kullervo and had Ilmarinen craft the golden maiden as a consolation for himself after Kullervo charmed beasts to tear apart his wife. However, in folksongs the crafting of the golden bride is primarily the reaction of the figure which loses the courtship competition. (Krohn 1903–1910: 336–340.)

According to Matti Kuusi, Ilmarinen appears as the central figure in the old mythic poems where poetic expression was most rigid. In the younger, core era of epic, the poetry became more lively in expression and deeper in its psychology, and the central figure became Väinämöinen, especially in Karelia and Savo (Kuusi 1963: 157, 161). This could provide an explanation for the paucity of characterizations of Ilmarinen: he is a culture hero who appears predominantly in archaic poems which describe the origins of things. In his diachronic theory of the relative age of the old epic poetry, Matti Kuusi has divided the material into five periods: the Pre-Finnic, Early Kalevala, Middle Kalevala, Medieval Kalevala and Late Kalevala Periods (Kuusi 1994: 50). In those poems, which according to Kuusi's dating system, belong to the Early Kalevala Period, there is not yet any place for dialogue or rich nuances of characterization. The only poem in which Ilmarinen appears that Kuusi attributes to the Middle Kalevala Period is *The Courtship Competition*, where Ilmarinen also has the role of a quiet accomplisher of courtship challenges.

The International Smith-Hero

In Classical mythology as well as in many others, the smith-hero is generally associated with fire and he is considered a lord of fire. Hephaestus and Vulcan were lords of fire of this sort. According to Eliade, Hephaestus is an

archaic figure, whose origin or roots remain unknown, and no explanation for this figure has been found in either pre-Hellenistic or Indo-European traditions. Hephaestus was above all, the patron saint of different skills and techniques related to fire, but not a god of fire himself. (Eliade 1978b: 267.)

This description is equally appropriate to the figure of Ilmarinen in Finnish mythology. Kuusi views Ilmarinen as belonging “to the same family of divine smiths” as the *Rg Veda*’s Tvaṣṭr, who fashioned many useful objects and even the first human beings, lame Hephaestus, who, according to Homer, made human-like golden maidens, and Germanic Völundr, attributed with a corresponding feat. Among the Balts, the similar smith-hero was Kalevias, among Slavs, Svarog, and among Celts, Goban. (Kuusi 1963: 159.) The smith-god Goban or Goibniu served drinks to the gods as Hephaestus did, and repaired their damaged weapons after battle (Oosten 1985: 73, 122). The Near-Eastern smith-god Koshar-wa-Hasis of the Canaanites, helped Baal to defeat his adversary Yam by providing him with two clubs which he had made (Eliade 1978b: 154).

In ancient Mediterranean cultures, the skills of the smith and worship of the smith were closely connected to trade in the time when connections were wider and making metal objects was more commercial than simply being a function of self-sufficiency or oriented toward the direct exchange of goods (Silver 1985: 7–9). One of the important tasks of a smith was probably making money out of metal. Morris Silver asserts that words for “money” in many Mediterranean languages probably originally meant “head” (cf. Finnish *pääoma* [‘capital’] which is a direct translation loan from an Indo-European language going back to Latin *caput*, *capitis*, “head”; Finnish *pää*). A smith’s work, and coinage in particular, and producing “capital” through this, is reflected, for example, in Greek mythology in descriptions of gods being born from the heads of other gods. Pallas Athena was born from the head of Zeus, which according to the interpretations of Silver, could be explained by the fact that patrons of the cult of Zeus financially supported the new cult of Pallas Athena.

According to the myth, the smith-god Hephaestus opened Zeus’s head with his double-headed axe. The double-headed axe was a symbol of the treasury or depository, and the smith made the money. According to Silver, the remains of metalworking smithies have been found near the ruins of many temples, hence there was a very close relationship between the cults of the gods and the economy, and from this perspective, the smith was a key individual. In the myths of the Scandinavians, the smith makes treasures for the king’s treasury from the heads of the king’s sons, actually as a revenge for enslaving of the smith. (Silver 1992: 29–33.) The position of the smith-god or smith-hero is slightly different in Classical mythology and its pantheon than in the mythology reflected through kalevalaic epic. The smith was not so much a lord of technology as a minter of money, and the money, for its part, was at the foundation of the maintenance of the temples and cults of the gods. The economic life and religion of Iron Age Finnish society did not develop such complex structures, although hoards have been found in the territories of present-day Finland and it is known that money was minted in Finland at the end of the pre-historical period (Talvio 1987). “Money”

(*markka, penningi*) appears in epic poems, but its age and origin in the poems could of course be drawn into question.

The Russian archaeologist B. A. Rybakov (1981: 530) sees a connection between the mythic concept of the sky-god and learning how to make things from metal, and among the ancestors of the Slavs, this relates to the era of the god Svarog. Above all, Rybakov invoked the information about the gods presented in old chronicles. The writer of one chronicle even connects Svarog and Greek Hephaestus, hence Svarog would have been some kind of heavenly smith-god. Svarog taught people to forge weapons. Rybakov's view is unusual and not very clearly argued. V. J. Mansikka (1922 [1967]: 397) considers the information about Svarog to be so limited that there are no grounds to approach Svarog as an ancient god common to all Slavs, but that Svarog is more likely to be a vestige of a belief legend describing the origin of fire.

Whatever the case, in the background of Rybakov's interpretation stands the natural idea that learning how to work metal was a technological revolution of such magnitude that it must have deeply impacted people's mental and mythic worldviews (Rybakov 1981: 539–540). Where once the craftsman was only able to arduously chip and polish a desired object little by little from a selected piece of stone, whether making the head of an axe, a knife or arrows, and the worker of clay shaped rather rough idols and jewellery, an entirely new technique suddenly made it possible to produce a hot and shining liquid which could be poured into a mould, cooling into a solid, unfinished form that, with forging, could produce objects clearly surpassing earlier achievements in their degree of ornamentation or value in practical applications (Salo 1984: 101). Rybakov (1981: 532) points out that the writer who explained the history of mythology in the chronicle made a leap from the Stone Age directly to the Iron Age because bronze is cast rather than forged. Rybakov finds additional arguments in support of his view that metal was used primarily for jewellery and chisels during the Bronze Age while sickles and knives continued to be produced from stone, and thus people of the Bronze Age continued – to a certain degree – living in the Stone Age.

The younger so-called stone axes of the Corded Ware (Battle Axe) Culture provide a concrete example of the corresponding mental revolution which followed from learning how to work metal, and learning how to work bronze in particular. These stone axes were made at a time when the art of casting bronze was already known and axes made using this technique were at least known somewhere, axes which were clearly technologically superior to stone axes and were admired and appreciated on that account. Accordingly, the seam of a casting mould was represented on the upper flat of the blade of stone axes so that their form would more greatly resemble the more appreciated exemplar. (Cf. Edgren 1984: 78; Salo 1984: 106–107.) This was done in spite of the fact that making the seam of the mould on the stone surface required a tremendous amount of additional work and in no way enhanced the practical qualities of the product.

Holy Iron

It is only natural that the art of metalworking became an object of mythologization, and that in the Iron Age, the smith became a new mythic hero with an ideal control over the new technology, a hero who was able to extend his achievements to cosmic proportions. It is therefore reasonable to argue that the poems about Ilmarinen are from the Iron Age, although in the question of their age, this still leaves a period of about one and a half thousand years. It is also possible to bring forward a number of reasons why smith-heroes such as Ilmarinen were associated with heaven. According to Mircea Eliade, the first iron used among men was originally from meteorites which fell from the sky. When Hernán Cortez asked Aztec chiefs about the origin of their iron, they pointed to heaven, whereas in a more ancient Sumerian text, iron is referred to using a sign-pair which means 'from heaven' and 'fire'. Later, people learned to cast iron ore and then the mythology related to iron received new features associated with the "matrix of Earth-Mother". (Eliade 1978b: 52–53.)

Eliade sees the ability to work metal as having brought about a fundamental change in mythologies on a general level. Earlier, the god of heaven had his naturally existing attributes, thunder and lightning. Once metalworking became known, the smith-hero emerged in a mythology as the figure which made the tools for the god of heaven. According to Eliade, a mythic *homo faber* can be seen in this phenomenon, along with the magical aura surrounding the hand-made tool. A smith thereby approaches divine models by forging weapons which are to some degree reminiscent of lightning and thunderstones. A "thunderstone" cast by the god of heaven was a stone arrowhead or axe blade, hence a tool of the era which preceded the Iron Age. On the mythic level, the significance of the art of fabrication and the skills of the craftsman demiurge, *homo faber*, were emphasized. (Eliade 1978a: 100–101.)

Among many ethnic groups, the sacred nature of iron emerges in the numerous mythic conceptions of the protective power of iron objects. Iron objects have belonged to the equipment of the Finno-Karelian ritual specialist and wielder of magic called a *tietäjä*: a *tietäjä* would bite the blade of a knife or mark a protective circle around his client with an axe. With reference to A. V. Rantasalo, Eliade briefly mentions iron as a protector of grains (Eliade 1978a: 204; Rantasalo 1919–1921), and he presents the information that many people in Africa consider iron objects to be magically powerful (Eliade 1978a: 92). At the same time, it is necessary to observe that – at least in kalevalaic mythology – the smith-hero Ilmarinen is not a *tietäjä*-figure, in contrast to the mythic figure Väinämöinen. According to Kaarle Krohn (1903–1910: 336), Ilmarinen accomplishes works with his skills which are as great as those accomplished by Väinämöinen with his knowledge. Whereas Väinämöinen provided the archetype of a master of mythic knowledge, Ilmarinen provided the archetype for a master of artful skill. Hot fire was essential in making iron and subsequently in the process of working iron, and the mythic origin of iron was in heaven. The first iron which people used also came from heaven, even if that does not

appear in kalevalaic mythology. Lightning striking from thunderclouds probably generated associations with heavenly fire quite naturally. Fire also has a celestial origin in the Finno-Karelian incantation, *The Origin of Fire* (*Tulen synty*). The one who gives birth to it, and thus the lord of the thunder-storm, is first identified as “Ilmarinen” or *Ilman Ukko* [‘Old Man of the Air’] (noting that *Ukko* [‘Old Man’] was also a conventional name for the thunder-god) and then as Väinämöinen in the parallel line, while some variants of the incantation also carry references to the mythic thunder-bird:

Iski tulta Ilman Ukko,	Ilman Ukko struck fire,
Välähdytti Väinämöinen	Väinämöinen flashed
Kolmella kokon sulalla	With three feathers of an eagle
Kirjavilla kiärmehillä.	With colourful snakes.
(SKVR VII ₃ 603b, 1–4.)	

Ilman Ukko often emerges in the place of *Ilmarinen* in incantations which describe the origin of fire, but Harva (1946: 95–96) considered *Ilmarinen* to be the primary figure in this position. Giving birth to fire is not the only event in which *Ilmarinen* is equivalent to a lord of fire. In some Ingrian variants of the poems, *Ilmarinen* (“*Ismaro*”) appears as a figure which, according to Setälä, is referred to as the healer of injuries or illnesses referred to as “fire’s wrath” (*tulen viha*):

Ei tuo olt joutsen joukko	That was not a flock of swans
eikä olt kallain parvi	and was not a school of fish
eikä olt olkimytty	and was not a bundle of straw,
eikä olt lehtimytty,	and was not a bundle of leaves,
istui itse Ismaroi	<i>Ismaro</i> himself sat
jääkattila käessä,	with an ice-kettle in his hand,
jääkääky kattilassa.	a chunk of ice in his kettle.
(Setälä 1932: 127.)	

On the other hand, Uno Harva (1946: 100) considers *Ilmarinen*’s association with thunder to be occasional and that *Ilmarinen* cannot be considered the true thunder-god solely on the basis of an incantation because many of the attributes typical of a thunder-god are absent. Furthermore, Mircea Eliade emphasises that it is natural for a smith to be a “master of fire” who is able to change the state of material into that which he desires by using fire, and from the raw materials provided by nature, he can create something which is, qualitatively, completely new. In archaic societies, this led smiths to receive the same type of respect – as well as suspicion – as was regarded other users of fire: shamans, healers and wielders of magic. (Eliade 1978b: 54)

The myth of the origin of iron is far more closely connected to the smith-hero and to the technological revolution instigated by the handling of metal than is the myth of the origin of fire. It is only natural that the origins of metals – and above all the origin of iron – became objects of mythologization. The myth of the origin of iron which is preserved in kalevalaic poetry appears as the introduction to the incantation used for

healing wounds caused by iron implements, and especially those caused by sharp tools. In this incantation, the description of the origin of iron is, ethnographically, quite natural: iron appears as the precipitated beads of ore which were collected in swamps, and especially from the footprints of animals:

Susi juoksi suota myöten,	A wolf ran through the swamp,
Karhu kangasta samoisi,	A bear roamed the heath,
Nousi suo suven jaloissa,	The swamp rose beneath the feet of the wolf,
Kangas karhun kämmenissä;	The heath in the palms of the bear;
Kasvo rautaset orahat,	Iron sprouts grew,
Suven suurilla jälillä.	In the wolf's great tracks.

(SKVR I₄ 130, 1–6.)

In the incantation *The Origin of Iron*, it is possible to observe references to sexuality which are relevant to the mythic connection of sexuality to the work of a smith as discussed above. The origin of iron is connected to young women:

Kun oli ennen neljä neittä,	When before there were four maidens,
Kolmet koitoo tytärtä,	were three daughters,
Lypsivät maille maitojaan,	They milked their milk onto the lands,
niitylle nisoksiaan,	Their breasts onto the meadows,
[...]	[...]
Et sinä silloin ollut suuri,	At that time you were not large,
Etkä suuri etkä pieni,	Neither large nor small,
Kun maitona makasit	When you were lying as milk
Nuoren neitosen nisissä,	In the breasts of a young maiden,
Kasvannaisen kainalossa.	In the armpit of one still growing.

(SKVR VII₃ 499, 1–4, 17–21.)

In many variants of the incantation, especially in the region of Viena, Ilmarinen is the mythic smith who prepares the first iron:

Se oli seppo Ilmarinen,	It was the smith Ilmarinen,
Takoja iän ikuinen	Forger, of age eternal
Sihen ahjoa asetti	Placed a forge there
Suven suurilla jälillä,	On the wolf's great footprints
Karhun kannan polkumilla;	On the tracks of the bear's heels;
Pani orjat lietsomahan.	Set slaves to work the bellows.
[...]	[...]
Katso alla ahjojansa:	Looked under the forges:
Rauta tungeksi tulesta,	Iron burst from the fire,
Siitön rauta synnytelty.	From this was iron given birth.

(SKVR I₄ 130, 7–12, 20–22.)

Alongside Ilmarinen, Väinämöinen is also mentioned in variants of *The Origin of Iron*, his belt being presented as one source for the origin of iron:

Tuoll' on rauta synnytetty	There is iron given birth
Tuhatjatkossa tupessa,	In the thousand-fold sheath,
Vyöllä vanhan Väinämöisen.	On the belt of Old Väinämöinen.
(SKVR I _{4,1} 133, 7–9.)	

It can only be speculated in what sort of ritual context the myth of the origin of iron may have, at some point, been actualized, and how this myth was related to producing iron or to the ancient work of smiths. According to Eliade (1978b: 53), everywhere in the world, many different rituals related to mining iron ore have been found, among which belong demands of purity, fasting, meditation and prayers. Some analogical indications may offer fragmentary information concerning rituals for lighting fire. Simultaneously extinguishing all fires, lighting a new fire with friction, and spreading the fire from there to all others, all belonged to the ceremonies of many peoples. Although there is no direct proof, some type of similar ritual association probably provided an earlier context for the incantation which tells the origin of fire. (Kuusi 1963: 57–60.)

The Mythic Achievements of Technology

In mythic thinking, it is possible to distinguish two exceptionally profound technological achievements, masterpieces of the ideal smith-hero: the first is a device which produces various material goods with the capacity to liberate people from the drudgery heavy labour, and the second is the manufacture of an artificial human being. The latter emerged in a sort of competition with the gods of creation: a human being is itself the most complicated thing in the created world, and therefore the production of a human-like being would elevate the smith, with his hybrid masterpiece, to the level of a god for whom nothing is impossible.

Alongside the golden maiden as an artificial human being, the *sampo* presents a sort of ideal artifact of archaic human technology: it is a mystical device which produces material goods for people without drudgery – in other words, it liberates people from the burden of labour. The concrete appearance of the *sampo* has long been subject to discussion, with formulations put forward by, for example, E. N. Setälä (1932) and Matti Kuusi (1949) among others. The freshest explanation is that it was a statue which stood in town square (Klinge 1983). Whatever the possible concrete image of the *sampo* might be – the image of a god, a cult statue representing the world pillar, or whatever else – conceptions of the richness produced by the *sampo* as a sort of horn of plenty emerges very strongly in the folk poetry. Matti Kuusi presented various comments, both in prose and in verse, which informants associated with the end of the song describing the theft of the *sampo*, when the *sampo* sank to the bottom of the sea during the final battle. These comments share a common feature in the theme of a loss

of bountifulness: “because of that, the sea is rich and the earth poor” – the saltiness of the sea could also be explained as a consequence of the *sampo* lying at the bottom of the sea. (Kuusi 1968: 8–11.)

Risto Tapionkaski was the assistant of the artist Akseli Gallen-Kallela, and in the beginning of the 1920s, he provided a visual depiction of the vernacular *sampo*-techno-utopian conception (Setälä 1932: 189). Risto was from Viena Karelia, and known as Riiko Kallio according to his Karelian name, with the nickname “Smötkyn Riiko” (Tarkka 1999). His drawing of the *sampo* presents a sort of hybrid between the traditional and modern worlds: a geared wheel appears in the middle of it with smaller wheels around it, and at the bottom there is a hole from which the completed products can come out. Risto Tapionkaski was himself able to sing kalevalaic epic and he had been born into a society where the traditional preindustrial lifestyle and the epic poetry – its myths already becoming obscure – were still a reality, yet he had already had contact with the technology of modern society.

These same ideals or utopian conceptions of technology reflected in the machine which produces material prosperity and in the artificial human being continue their life in the newer prose-form tradition, united in *Könni's Hoe-Man* (*Könnin kuokkamies*) in the image of a sort of robot. The mechanical hoe-man reflects much newer technological thinking than the *sampo* and the golden maiden. The capacities of technology had already been completely de-mythologized, with mechanization at its foundations, where the windable spring was already known among the lay population as a way to store energy and as a source of energy which replaced the power of muscles, as well as the power of wind, which was a recognized technology familiar from sailing ships and windmills. In the 1800s, some mythic images or reflections thereof could merely be connected to the Könnis' smithy work as the Könnis revealed their superhuman skills as smiths. Still more recent reflections of vernacular techno-utopian conceptions are found in the inventors of different types of perpetual motion machines (Laaksonen 1991). A dream, corresponding to that which was held by the inventors of Könni's hoe-man, stands in the background of these developments – the dream of developing free energy for the production of material goods for the people.

The Könnis were famous craftsman of fine mechanisms or watchworks in the Pohjanmaa region, and it was popularly believed that they were masters of the best technologies which could be imaged in their time. Thus it was said that they created a machine which would replace the human being – Könni's hoe-man, which accomplished in a straightforward way the work for which it was mechanically programmed. (Simonsuuri 1950: 111–115.) Even here, the perfect outcome remained utopian. The golden maiden was not adequate as a wife and bed companion for a real person, nor was Könni's hoe-man able to turn unaided when it reached the end of the field. A pessimistic warning is attached to all narratives which tell of trying to manufacture an artificial man or woman: the virtual man or woman made by a human being is inevitably imperfect. The human features are achieved only in part, while those which are wanting actually leave the

accomplishment hazardous to its master. According to one variant of the story, Könni's hoe-man killed his master with a blow from his hoe, when the latter went to lie down at the end of the field, waiting for the hoe-man, and fell asleep there.

Beginning with Könni's hoe-man, two dreams are usually united in techno-utopian conceptions: one is that of a machine which accomplishes work, while the other is that of a human-like being, probably because the human being is considered the pinnacle of natural development, the most versatile, and not only capable of physical labour but also capable of mental tasks, thus the most effective being at accomplishing work. The manifestations of this techno-utopian concept are various robots which have been provided with ever more human features in modern movies, attributable for example to bio-technologies, so that – at their best – it becomes almost impossible to distinguish them from real people. In a way, the golden maiden is created again and again in these pop culture science-fiction adventures. In addition, the view that an artificial creation can never be equal to a real human being is often attached as a warning to these visions of robots and computers. One of the most well-known rebellions of a super-technology is found in the movie *2001, A Space Odyssey*, where the computer HAL decides to eliminate the crew in the middle of their journey because they are imperfect beings which can threaten the success of the whole research mission.

In principle, we are still living in the Iron Age, even if our technology is on a totally different level than when *The Origin of Iron* was, in its time, living ritual poetry. Respect mingled with fear of the possibilities of technology has been preserved: on the one hand, we are dreaming of incomparable achievements, and on the other we are afraid of the dangers concealed in those achievements because we have the suspicion that such products of superhuman technology will not be under human control.

Translated by Marja-Leea Hattuniemi, Frog and Eila Stepanova

NOTES

- 1 Finland Proper (Varsinais-Suomi) is the province on southwest tip of present-day Finland; Satakunta is the adjacent province to the north along the coast. – *Editor's note.*
- 2 The author is indebted to Frog for the additional information concerning Kaleva and Kalvis.

References

Sources

SKVR = *Suomen Kansan Vanhat Runot* I–XV. Helsinki: Suomalaisen Kirjallisuuden Seura, 1908–1997.

Literature

- Edgren, Torsten 1984. *Kivikausi. Suomen historia*. Helsinki: Weilin & Göös.
- Eliade, Mircea 1978a. *The Forge and the Crucible. The Origins and Structures of Alchemy*. 2nd edn. Chicago: Chicago University Press.
- Eliade, Mircea 1978b. *A History of Religious Ideas I. From the Stone Age to the Eleusinian Mysteries*. Chicago: University of Chicago Press.
- Gimbutas, Marija 1963. *The Balts*. London: Thames & Hudson.
- Harva, Uno 1946. Ilmarinen. *Finnisch-Ugrische Forschungen* 29: 89–104.
- Harva, Uno 1943. *Sammon ryöstö*. Porvoo: WSOY.
- Junttila, Santeri 2005. Thomsenista Kalimaan. Vanhimpien itämerensuomalais-balttilaisten kielikontaktien tutkimushistoria vuoteen 1936. Unpublished MA thesis, Department of Finno-Ugrian Studies, University of Helsinki.
- Klinge, Matti 1983. *Muinaisuutemme merivallat. Kuvitettu historiallinen luonnos*. Helsinki: Otava.
- Krohn, Kaarle 1903–1910. *Kalevalan runojen historia*. Helsinki: Suomalaisen Kirjallisuuden Seura.
- Kuusi, Matti 1949. *Sampo-eepos. Typologinen analyysi*. Helsinki: Suomalais-Ugrilainen Seura.
- Kuusi, Matti 1963. *Suomen kirjallisuus I. Kirjoittamaton kirjallisuus*. Helsinki: Otava.
- Kuusi, Matti 1968. Muinaisrunon epimyyttejä. *Kalevalaseuran vuosikirja* 48: 5–18.
- Kuusi, Matti, Keith Bosley & Michael Branch (eds.) 1977. *Finnish Folk Poetry. Epic*. Helsinki: Suomalaisen Kirjallisuuden Seura.
- Kuusi, Matti 1994. The Inheritance of the Prehistoric Tradition in Historic Finland. In Matti Kuusi. *Mind and Form in Folklore. Selected Articles*. Studia Fennica Folkloristica 3. Helsinki: Suomalaisen Kirjallisuuden Seura. Pp. 50–52.
- Laaksonen, Pekka 1991. Könnin sepistä sotamies Honkajokeen. Suomalaisia ikiliikkujan keksijöitä. *Kalevalaseuran vuosikirja* 71: 65–75.
- Mansikka, V. J. 1922 [1967]. *Die religion der Ostslaven I. Quellen*. FF Communications 43. 2nd edn. Helsinki: Suomalainen Tiedeakatemia.
- Oosten, Jarich G. 1985. *The War of the Gods. The Social Code in Indo-European Mythology*. London: Routledge & Kegan Paul.
- Rantasalo, A. V. 1919–1921. *Der Ackerbau im Volksaberglauben der Finnen und Esten mit entsprechenden Gebrauchen der Germanen verglichen*. FF Communications 5. Helsinki: Suomalainen Tiedeakatemia.
- Рыбаков 1981 = Рыбаков, Б. А. 1981. *Язычество древних славян*. Москва: Издательство “Наука”.
- Rydberg, Viktor 1886–1889. *Undersökningar i germanisk mytologi*. Stockholm: Bonniers.
- Salo, Unto 1984. *Pronssikausi ja rautakauden alku*. Helsinki: Weilin & Göös.
- Setälä, Emil N. 1932. *Sammon arvoitus*. Helsinki: Otava.
- Silver, Morris 1985. *Economic Structures of the Ancient Near East*. London: Croom Helm.

- Silver, Morris 1992. *Taking Ancient Mythology Economically*. Leiden: E. J. Brill.
- Simonsuuri, Lauri 1950. *Kansa tarinoi. Tutkielmia kansantalouden salaperäisestä maailmasta*. Porvoo: WSOY.
- Simonsuuri, Lauri 1951. *Kotiseudun tarinoita*. Helsinki: Suomalaisen Kirjallisuuden Seura.
- Talvio, Tuukka 1987. Suomen viikinki- ja ristiretkiajan löydöt. In *Muinaisrunot ja todellisuus. Suomen kansan vanhojen runojen historiallinen tausta*. Markku Linna (ed.). Historian Aitta 20. Jyväskylä: Historian Ystävien Liitto. Pp. 89–101.
- Tarkka, Lotte 1999. Smötlyn Riiko. Mikrohistoriallinen kertomus vialaistietäjän elämästä ja runoudesta. *Kalevalaseuran vuosikirja 77–78*: 41–94.
- Vahtola, Jouko 1987. Vanhojen kansanrunojen nimistön ja todellisen nimistön välisistä yhteyksistä. In *Muinaisrunot ja todellisuus. Suomen kansan vanhojen runojen historiallinen tausta*. Markku Linna (ed.). Historian Aitta 20. Jyväskylä: Historian Ystävien Liitto. Pp. 37–50.