



The Birth of the Term *Robot*

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The manuscript was received on 18 September 2013 and was accepted after revision for publication on 20 June 2014.

Abstract:

There are many scientists calling robotics for achievement of the modern era. Robotics is a multi-, and interdisciplinary field of the technical and other sciences, based on the newest results of classical-, modern-, and also post-modern control theory. Leaning on tools of modern robotics it is possible enhance manufacturing, improve quality of products. Robots can serve for, and instead of the Man in many dirty-, dull-, and dangerous applications. The goal of the author is to make an attempt to find origin of the word “robot” via historical epochs famous for slavery, free labour, and corvée work.

Keywords:

Slave, slavery, serfdom, robot.

1. Introduction

There are many scientific textbooks and articles trying to find origin of the term of *robot* or *robotics*. Common questions are put very often: what is the historical root of those words of *robot* or *robotics* used very often in many languages, or, what language used first the word *robot*? The answer is often a schematic one: of course, *our* mother tongue was the first using the word *robot*. There is an informal agreement that the word *robot* was used firstly by Karel Čapek. On the other hand it is also recognized by Karel Čapek that the word *robot* is suggested for use by his brother, Josef Čapek. First widely known use of the term *robot* is in science fiction work of Karel Čapek titled Rossum’s Universal Robots (R.U.R.), published in 1920, and term *robot* was used for the description of robot machines owning human shape and behaviour [1, 2, 3].

After translation of the R.U.R into many foreign languages, its use became international (see Fig. 1). Isaac Asimov, the lawmaker of the 3 Laws of Robotics, himself conceived that “*this writing is awful, but it is undying for a simple word*” [18].

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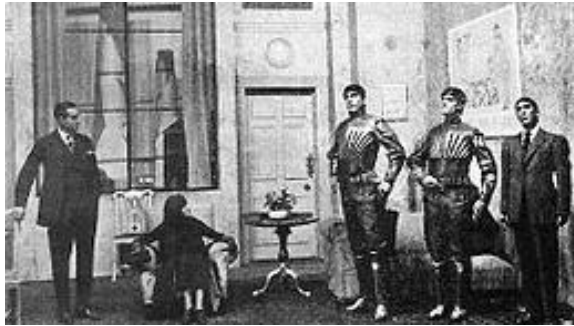


Fig. 1 The R.U.R on the Stages.

There are few of those scientists who tried to answer a question: was it necessary to discover a word *robot*, or it was the existing one in other languages?! In Wikipedia a search for the word "robot" gives following: the origin of the word *robot* is a Czech word *robota* meaning unpaid, forced labour of the serfdoms executed on the land owned by the Landlord of the manor.

There are some assumptions that the origin of the word *robot* is traced back to the archaic Slavonic word *rab*, meaning unfree person [1]. The historical origin could link back to the conquering of the ancient Slav residents settled in the Carpathian Basin by the Magyars in 896 AD (see Fig. 2).



Fig. 2 Settlement of the Magyars in Hungary.
(National Gallery, Budapest, Hungary. Painter: Mihály Munkácsy, 1893)

The painting on Fig. 2 represents receiving reverence of the Slavs by the Warlord of the Magyars, named Aprád, represented by offering for the winners soil, grass and fresh water of the Carpathian Basin. There is an arising question how the *rab* was able to work on the lands of the Landlord being confined?! Of course, to answer this question with the modern languages, and with modern meaning of the words, quit difficult. In the Hungarian language word *rab* still stands for the jailed person.

There might be a confusion between archaic Slavonic words of *robot*, and *robota*. In general, word *robota* stands for the paid, uncompulsory labour, against the unpaid, compulsory work called *robot*.*

The aim of the author is to highlight some interesting questions of the economy, of the society and, of the evolution of the legal systems allowing understanding main topic of this research. The establishment of the ancient societies, ancient cultures are

* Word *Robot* or *Robath* was used for the unpaid compulsory work in Austria (editor's remark).

the simultaneous ones to the appearance of the slavery, and to the debt slavery. The author puts into the focus the ancient epoch and ancient cultures of Europe, and, the Middle-East. The examined historical era was chosen by the author due to its importance, and they are in chronological order as: Empire of Babylonia; Middle-East countries in the era of the Birth of the Holy Bible (Canaan, Judea, Israel, Palestine); the antique Greece; the Roman Empire; feudalistic countries in Europe in the Medieval, focusing mainly on the Hungarian Kingdom.

2. The origin of the term *Robot*

What is the word *robot* stands for, really?! How *robot* is defined in the modern meaning?! The Webster's Dictionary defines as technical system or gauge, able to move independently [23]. Some others think that the *robot* is an automat able to execute human-, physical-, and theoretical activities [15, 16, 17, 39].

Some scholars think that first description of the working machine like humans is in legendary heroic poem of Homer, titled *The Iliad*. The Part XVIII of the poem sounds as follows: "*There were golden handmaids also who worked for him, and were like real young women, with sense and reason, voice also and strength, and all the learnings of the immortals*" [24].

The great poet Homer discussing about visit of a goodness, Thetis to the house of the Thin-leg Hephaestus (Latin: *Vulcan*) whose moving was supported by golden handmaids like young women having abilities as human beings have.

Latter the slavery meant legal status, what is defined in [14], and originally described by Ulpianus in D.50.17.209. regula as follows in Latin: "*Servitutem mortalitati fere comparamus*". In other words, "*Slavery can be considered close to death*".

There are two different points of view: first is about golden made robots, health-caring Hephaestus. The second is the ultimate standpoint: better to die then to get into status of the slave. One can put a question what is the significant, and, more realistic of these definitions? The author will travel via historical epochs analysing ancient, antique societies, economy, and legal systems to highlight origins of the debt slaves, and the slavery in general. It is also needs proof: was really the status of slaves as so bad as defined by famous regula of Ulpianus?

3. Back to the Past – the Historical Origin of the Slavery, Debt slavery, and Legal Status of the Slaves

Let us travel virtually via historical era determining till today development of the Mankind. It is difficult to imagine but the legal system of the modern slavery existed although in Europe till past decades. In 1996 Prime Minister of Ireland on behalf of the Republic beg pardon of those citizens of Ireland sentenced and forced to work for the Catholic Church unpaid in theirs laundries between years of 1923 and 1996 [38].

3.1. The Code of Hammurabi

Hammurabi (1792 BC – 1750 BC) was the king of Babylonia, founder of the Ancient Babylonian Empire. Conquering the Mesopotamian small city-states, kingdoms, in the 28th year of his ruling he founded a new kingdom, called Babylonia (see Fig. 3).

The second year of his ruling called as "*Hammurabi the king established a justice, and released a forced labour in his land*".

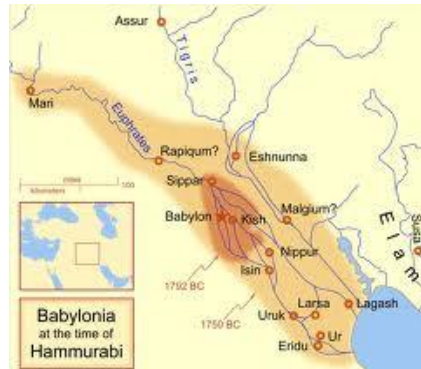


Fig. 3 The Map of the Ancient Babylonia

The Code of Hammurabi in fact is a collection of the adjudications of him and it is more than a classical code of law. The reason is that only the God could create a law, and the mission of the kings was the “*kittu(m)*”, so as to keep the truth of god in force (see Fig. 4).



Fig. 4 The Diorite Stele with Code of Hammurabi
(Photo by R. Szabolcsi. The Louvre, Paris, France 2011)

The Prologue is a *laudation* to the King Hammurabi, to the Highest, to the lawmaker, who established justice and rights in the kingdom of Babylonia.

The Code of Hammurabi consists of many articles ruling over debt slaves, and common slaves. Some of those famous articles are as follows by [9, 19]:

Article I/7. If any one buy from the son or the slave of another man, without witnesses or a contract, silver or gold, a male or female slave, an ox or a sheep, an ass or anything, or if he take it in charge, he is considered a thief and shall be put to death.

Article IV/15. If any one take a male or female slave of the court, or a male or female slave of a freed man, outside the city gates, he shall be put to death.

Article IV/16. If any one receive into his house a runaway male or female slave of the court, or of a freedman, and does not bring it out at the public proclamation of the major domus, the master of the house shall be put to death.

Article IV/17. If any one find runaway male or female slave in the open country and bring them to their masters, the master of the slave shall pay him two shekels of silver.

Article IV/18. If the slave will not give the name of the master, the finder shall bring him to the palace; a further investigation must follow, and the slave shall be returned to his master.

Article IV/19. If he holds the slave in his house, and they are caught there, he shall be put to death.

Article IV/20. If the slave that he caught run away from him, then shall he swear to the owners of the slave, and he is free of all blame.

The Code defines the legal status of the debt slaves. The Code consists of articles about marriage between citizens and slaves, and defines many other relations of actions of slaves, and actions with slaves. The criminal code and the penalty code of the law of Hammurabi were very easy to learn to it: the rest of the criminal acts, violations, although the simplest were penalized with the strongest sentence to death. If anyone does not hearing to the written norms of the Code, Hammurabi prayed for imprecatories against them as follows: *“May Nin-tu, the sublime mistress of the lands, the fruitful mother, deny him a son, vouchsafe him no name, give him no successor among men.”*

As a conclusion from those written norms established by Hammurabi one can state that a written law replacing customs created a strong basis for the reliable and stable legal system. The Code helped the citizens to have clear relationships with landlords, with the Church, with Kingdom and with the King, and they were able to manage the everyday life leaning on those articles given in the Code. It is evident from the Code that although slaves could own private properties, and contract on them: they could sell or buy goods, having witnesses, or, having written contracts.

3.2. *The Holy Bible and the Slavery*

The first and the oldest book compiled in the Old Testament of the Holy Bible is book of king David dated from (1010 BC – 970 BC). Many verses of the The Old Testament disserts about pauperization, debt slaves, and about slavery. The author will highlight some fragments from the Holy Bible interesting from the point of view of this article.

The law of the slaves can be read in 2nd book of Moses, in verses 21,1-10. By the sentence of the God, if someone buys a slave, the slave must serve for the new master six years, and in the 7th year he must be released with no rewards [13, 19].

The 3rd Book of Moses, in verses 25,35-55 gives norms of caring about poor men. If a Jewish man got poor losing his land or tools, the surrounding land owners were ordered to give him a paid work. If someone gave money for the poor Jewish, it was forbidden to ask interest for the loan. The reason for it was that Hebrew man was a God’s slave and he could not put under power of other man [13].

The 5th Book of Moses, in verses 15,1-11 defines conditions for the releasing debt slaves. It was ordered at the 7th year to release the Hebrew slave with no loans. After that a man could return to his beloved [13].

The 5th Book of Moses, in verses 15,12-16 defines conditions for the release of the slave. He must be given goods to start newly the production. If he did not want to leave the house of the master, after his statement he could stay as slave for ever [13].

The 5th Book of Moses, in verses 20,1-20 defines norms for the war, mainly how to deal with the conquered nations. If the sieged city located far surrendered, the residents became taxpayer. If the sieged city located far did not surrendered, after siege men were killed, women and children were captured for slaves. If a city located near did not surrendered, after siege all residents were killed [13].

The slavery of the ancient societies cannot be judge from point of view of modern societies. Many cultures were in full power for many centuries to be felt down and be client for the stronger culture.

3.3. *The Legal Status of the Slaves in the Ancient Greek Democracy*

The city of Athens located on western part of the Attica Peninsula. By believes and traditions the form of the state was kingdom. The first constitution was created by the famous mythical founder-king of Athens, Theseus, against whom Minotaur defeated. The constitution created an order in the society. The main orders were aristocracy, tillers, masters, and peasantry. The power of the aristocracy was based upon owing the land. It is worth to mention that although peasants could own land. From the 7th Century BC the state was ruled by the chief magistrates, representing the aristocracy, called archons.

The landlords granting loans for theirs clients usually get them as debt slaves, due to pauperization of the debtors, and the plebeians. The Demos started to fight against super power of the aristocracy, for the rights of the demos. They formulated following vindications:

- terminate debt slavery;
- create written laws instead of the custom in legal actions;
- emancipation, and equal rights with aristocracy;
- for all the Polites grant possibility to take part in the city-state common decisions, and government of Athens.

The famous archon Dracon in 621 BC created the first written code of laws replacing the unwritten custom. The first written code of laws was famous for its rigour called after its lawmaker *draconian rigour* punishing almost every violations and deeds with final sentence to death [7, 11].

Archon Solon in 594 BC satisfying the wish of the citizens of the ancient Athens created a new code of law. He terminated the debt slavery, remissioned the debts of the debtors, but the political rights he provided based upon wealth. He was the founder of the timocracy based upon principle that only property owner can take part in the government in which love of honour is the ruling principle [7, 12].

Archon Cleisthenes in 508 BC finished widening rights of the Athenian Demos and strengthening of the democracy is connected to him [7].

3.4. *Slavery in the Roman Empire*

In Chapter 2 the famous Latin regula of Ulpianus, numbered as D.50.17.209 was discussed as follows: “*Servitutem mortalitati fere comparamus*”, or in English, “*Slavery can be considered close to death*” [14].

Reading this article from the code of law the reader can imagine a very rigorous Roman Code of law. The person condemned in legal action, e.g. in civil code of law, was forced to satisfy the judgement in one month. If a person missed this deadline he was warned to satisfy the judgement one more time and debtor must take him into the court second time, in front of the Public showing that the condemned missed the satisfaction of the judgement. If the debt remained unpaid by the debtor creditor can take him for the second month. If the debt still remained unpaid the condemned person could be sold as slave beyond the River Tiber (Latin: *Tiberis*), or, could be executed on him capital sentence. The regula read before disserts about differences between slavery and death.

After the fall of the Roman Empire in 476 AD the Roman Code of Law was in force and was used as written code of norms. In the era of resuscitation (Latin:

receptio) of the Roman Code of Law more and more state used the Roman Code of Law [28, 29].

The first written form of the Roman law was the “Law of the Twelve Tables” (Latin: *Leges Duodecim Tabularum*) [8, 10]. The unwritten rules, the custom could change by the time, and its application in legal procedures was very difficult and depending one on the personality of the judge. In 451 BC the team of lawmakers consisting of ten persons (Latin: *decemviri legibus scribundis*) was nominated to formulate Roman law based upon the Greek traditions and examples [8, 28, 29, 37].

It is important to mention that in the Roman Empire there was known an unpaid, public work (Latin: *opera publica*) on properties of the public e.g. on roads, on public facilities [26].

4. Slavery in the Hungarian Kingdom in the Medieval

The purpose of this chapter is to summarize historical events from the era of the Hungarian Kingdoms related to slavery. The slavery is well-known from the early years of the Hungarian Kingdom. The first code of law defined and derived their social status, their rights, their obligations, and, sanctions in case of violations. The slavery in the Hungarian Kingdom was not a classical slavery: the slaves could be liberated from slavery and slaves can own properties, although they can serve for the Church. The legal status of the slaves was mainly derived in the laws of famous Hungarian kings, we will deal with.

4.1.1. Slavery in the era of King St Stephen the First

Saint Stephen I (Hungarian: *I. Szent István*; Latin: *Sanctus Stephanus*; Slovak: *Štefan I. or Štefan Veľký*) is the first Hungarian King, the founder of the Hungarian Kingdom (see Fig. 5).



Fig. 5 King Saint Stephen with the flag and double cross [40]

As a ruler Saint Stephen I compiled two books of laws and a book for his son, Duke (Saint) Emeric on moral education of his, titled *Admonitions* (Latin: *De institutione morum*). It is supposed that the First book of law was compiled during life of Saint Stephen, while the Second book of law was compiled in the era of King Andrew I. The oldest written documents dealing with First book of law of Saint Stephen were found in the Monastery of Admont, in Steiermark, which is a province of Austria [4, 6].

Main articles of the First book of law derived order in the ancient Hungarian society. Many articles of the First book had dealt with crimes committed by slaves, or, committed against them, and the legal status of the slaves was derived in legal acts. The novelty of the Second book of law is in liberation of the slaves, the norm was created how to behave in this legal situation [30, 31].

Finally, it can be stated that although the freemen were threatened by slavery if to pauperize, or marry a slave woman, or if to commit a crime many times. Often a few years of crop failure, a war, or brigandage committed against peasants might leave them unable to make their own way, and they must to take a loan at barons. If they fail with repayment they could serve as debt slave of the obligee. It was strongly forbidden to liberate slaves. However the King could put them into service although in the Palace with equal rights as governors owned [5, 6, 27, 28].

4.1.2. Slavery in the era of King Saint Ladislaus I

King Ladislaus I of the Dynasty of Árpád reigned in the Hungarian Kingdom between 1077 and 1095 (see Fig. 6). As a king he was said to be a righteous lawmaker. His main motivation was to prevent private properties of the owners [4, 6].



Fig. 6 The golden herma of the King Saint Ladislaus I of Hungary [40]

After his enthronement he turned to finish with anarchy in the kingdom. Due to development of the economy many freemen were put into slavery. The pauperization of the population has led to a new tendency of massive robbery of goods so as to survive and not to starve. A protest against the established feudal order threatened the basics of the existence of the Hungarian Kingdom, and the lawmaker king Ladislaus I gave adequate code of law [20, 21, 22, 32, 33, 34].

The King Saint Ladislaus I compiled his 3rd Book of law (known as 3rd Decree) in 1077. The 2nd Book of Law was established and compiled after 1077, and it was a Penalty Code of Law [4, 6, 34]. The 1st Book of Law was established and compiled at sessions of synod held in city called Szabolcs, 20 May 1092.

The main articles of the 3rd Book of Law deal with slaves, debt slaves, and with slavery in general. The novelty of his code is that he derived asylum for freemen committing robbery and running to the Church [4, 6, 34]. Besides many other norms, there was an article how to handle runaway freemen, how to put into court, how to liberate him, or her.

The 2nd Book of Law of Saint Ladislaus rules many aspects of the problems of strengthening of the respect of the private property: penalty norms were established to

prevent private property and its respect otherwise there were sanctions against that behaviour [4, 6, 33].

Regarding articles of the 2nd and the 3rd Book of Laws of Saint Ladislaus getting into order of slaves was a form of punishment of the criminal acts. These norms served very effectively in strengthening respect of the private property.

4.1.3. Slavery in the era of King Coloman I

King Coloman I of the Dynasty of Árpád reigned in the Hungarian Kingdom between 1095 and 1116 (see Fig. 7). King Coloman was educated pursuant to the clerical traditions and acquired his subsequently famous learning, which earned him the appellation "*the Book-lover*" [4, 6].

His royal legislation work reached the pick in the Synod of Tarcal, where the prelates and barons of the Hungarian Kingdom revised the laws of the preceding kings. King Coloman issued new decrees reducing sensitivity of the laws of King Saint Ladislaus I [4, 6].



Fig. 7 King of Hungary Coloman I – *The Book-Lover* [40]

The 1st Book of Law of King Coloman rearranged the norms of the penalty code of book of laws of King Ladislaus I. In the first book of King Coloman many norms were established how to handle the runaway slaves, how to deal with them [6, 35, 36]. There was an article forbidding selling Hungarian slaves abroad. It underlined importance of the order of slaves in the production of goods, and in economy, in general.

The 2nd Book of Law of King Coloman often referred as Decrees of Synod of Esztergom. Besides many other norms one of the most interesting was forbidding to teach slaves, otherwise the teacher was obliged to buy the slave, and pay extra fine for his action [5, 6, 36].

The books of law of King Coloman I were more human as laws of King Saint Ladislaus I. Important to mention that slaves could have private properties, they could serve for the Church, although could get a priest, after liberating them. They were valuable labour force; therefore he must not kept by others in case of runaway from the master, or landlord: it was forbidden to sell them abroad as slaves.

5. Closing remarks

The author made an attempt to find origins of the term *robot*, starting with ancient societies and cultures prospering thousands of years before modern era. After finding roots of the establishment of the slavery, the Hungarian Kingdom's first lawmakers were put into focus of attention.

It was derived, that already in the early centuries of the existence of the Hungarian Kingdom the term *robot* was known and used in the Hungarian language for deriving debt services of the slaves.

In spite of many disputed accuracies in the etymology of the term *robot* one can say that the origin of the term *robot* can be traced back to the archaic Slavonic term *rab*, meaning *unfree* person. The unpaid, forced work of the Slavs, latter the work of the serfs was called for *robot* and the term was used also in the Hungarian language. In the modern Hungarian language term *robot* is still used for exhausting and long-lasting work, and still popular to use it instead of the word labour.

It is easy to agree that first use of the word *robot* for the automata by Karel Čapek made his name immortal. Understanding importance of the science fiction work of Karel Čapek the programming language of the Fanuc robots was named after the famous Czech writer as Karel.

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