Jens Soentgen: *Heroin: Taming the Drug and Loosing Control.* In: Bernadette Bensaude-Vincent, Alfred Nordmann, Sacha Loeve und Astrid Schwarz: Attractive Objects: The Furniture of the Technoscientific World. Pittsburgh: Pittsburgh University Press. Erscheint Ende 2014.

The history of heroin is first and foremost a story of progressive scientific control over the substance. Starting with opium, then morphine, through to subcutaneous administration with a syringe - we have had ever more control over the drug, which with the refinement of morphine to heroin has likely reached its peak. But at the moment of total control, when the negative characteristics of the substance were believed to have been eliminated through the acetylation of morphine to diacetylmorphine (heroin), and the uncontrolled proliferation of the substance was banned, a peculiar dialectic occurred. The substance escaped the scientists. It soon escaped the narrower circle of doctors and spread - promoted by the two World Wars of the 20th Century - throughout society as a whole. In the fight against this proliferation, the scientists also lost control over the notion of the substance. From the 1950s onwards, this was no longer determined by pharmacists or chemists, but by politicians, who saw in heroin a bacilli-like evil thing and pursued the substance with drastic measures, which only lead to its further proliferation. The prohibition and pursuit of the substance had significant side effects.

The following presentation examines only those aspects of the history of heroin that are relevant to its genesis first as a scientific and then a legal object of concern. Wherever possible, I cite the sources and present several which have until now not been evaluated in the broader discussion about opiates. Almost all of the sources are German because morphine and heroin were first presented and marketed in Germany. The focus of the presentation is on the German discourse of the 1920s, when doctors, pharmacists and judges argued over sovereignty in matters concerning opiates. As we now know, the judges and politicians won.

My phenomenological quest for Heroin

Aspirin and heroin, two stepsisters, were first synthesised about 115 years ago in August 1897, only a few days apart and by the same person: the chemist Felix Hoffman, an employee at the Farbenfabriken vormals Friedrich Bayer & Co. in Elberfeld (Germany). From a medicinal standpoint, both chemicals are pharmaceuticals with notable properties and, like all effective pharmaceuticals, are associated with characteristic advantages and disadvantages. Both substances are toxic in larger doses, whereby heroin is substantially more toxic than aspirin. Both are administered today primarily to combat pain, among other applications. Heroin is many times more effective in this than aspirin. Compared to other opiates, heroin stands out for taking effect faster and having the same effect at lower dosages. Like other opiates, heroin, unlike aspirin, carries with it a high risk of dependence on the compound. Heroin can easily become addictive, indeed both physically and psychologically

simultaneously. However, other than this, heroin has notably few side effects, even with long-term consumption.

While aspirin is considered to be a ‘wonder drug’, heroin is no longer recognised as a medicine at all, rather only as a forbidden addictive substance that destroys those who become dependent on it. It is considered the work of the devil; a substance that possesses almost even magical powers. Touch it once, and you are ruined forever.

It is considered a ‘hard drug’. Our society does not perceive heroin as a pharmaceutical, rather as a moral and legal notion. This moral notion determines the way it is dealt with. Heroin has been, and still is in most countries, a non-trafficable, non-prescribable narcotic substance. The precursors to heroin also lie under strict control: opium poppies, from which opium, heroin and morphine can be produced, may only be grown for decorative purposes. Heroin is no longer legally produced anywhere, except in Great Britain. While aspirin is present nearly everywhere in our modern world, in billions of households and handbags, almost the exact opposite is true for heroin. Follow the thing! This methodological device put forward by Arjun Appadurai is difficult to implement in the case of Heroin. If you want to trace *it*, you have to go underground. It is present, but is also one of the best hidden substances. Even for a scientist, it is nearly impossible to get hold of true heroin. My phenomenological quest for heroin led me to the Augsburg local police station. There I met a Mr. Maier, the local official for drug crimes. He did not understand exactly why I was interested in heroin. I tried to explain the GOTO project to him, but he was not convinced that the scientific project was the true reason for my interest in heroin. He did, however, explain the three basic pillars of the Bavarian drug policy to me: repression, persecution and precaution. He appeared to be on edge, possibly believing that I had been sent by some authority to test him. He had some dried opium poppy seeds stained with blue dye in a vessel in his cupboard. When I asked him whether there was some true heroin in his office, he was bewildered. Yes, there was, in a safe. I asked him to open the safe, but he would not allow me to take a look because “all of the items are evidence in criminal trials”. I asked him what heroin smelled like. He said it smelled of vinegar. Like heated water-soluble aspirin tablets. I promised him to send him the results of my studies, when they were published.

He explained to me that one gramme of impure heroine was worth 60 euro on the black market in Germany. One kilogramme of heroin can sell for 20,000 euro. From an economic point of view, he explained, dealing in heroin is a quite rational thing to do: “You do not need much space to store the substance and, depending on how pure or impure you sell it, you make a big profit.”

Some weeks after this interview I discovered that heroin was sold by our university's chemical supplier, but I was reluctant to buy it there. It was also ten times more expensive than on the black market. Finally, I decided to synthesise it at home from poppy seeds. These can be purchased in July and August for 2.50 euro each at flower shops. I blended the poppy seeds and filtered the juice. Then I added ammonia and a white substance precipitated that was soluble in acids. It was obviously an alkaloid, but the result of an opiate quick test remained ambiguous. Perhaps I had used the wrong kind of poppy. To sum up my experiences: To get hold of heroin, you have to leave your ordinary life. Immense walls have been constructed around the substance. It seems you cannot even touch the substance without becoming a criminal. Go underground! Because an image of heroin as a highly dangerous, addictive substance has prevailed and been enforced, we can no longer accept the substance in middle-class society. We incriminate ourselves when we hold it in our hand. And what can be bought as a heroin on the black market is often highly contaminated and cut (mixed) with all sorts of substances. The criminalisation of heroin has warped the substance itself, even if the chemical formula has of course remained the same. How could this happen? In the following chapters, I tell the story of Heroin beginning with a short review of its precursor, opium. The focus of my discussion lies on the early 20th century, featuring the dispute between pharmacologists and doctors on the one side and judges and politicians on the other.

Theriac and Opium

Opium (from the Greek word *opos* – juice) is the juice of seeds from the opium poppy, *Papaver somniferum.* It was mentioned as a remedy for ulcers in the famous Ebers papyrus, which was written in around 1550 B.C. In the Corpus hippocraticum, composed in the 5th to 4th century B.C., poppy juice was considered a pain reliever. Dioscurides describes in detail as far back as the 1st century A.D. how one should make the cuts in the seed in order to glean the juice. Opium was widely distributed in the form of theriac, a mixture of different animal and plant products whose principal component was opium. Theriac brings us to the likely best known opium-addicted philosopher: the Emperor Marcus Antoninus, also known as Marcus Aurelius. We know through two independent sources that Marcus Aurelius regularly ingested theriac. Theriac was a mixture of many poisonous substances, including opium. It has been invented by King Mithridates, who thought that he could achieve a certain level of immunity against poisonous substances by ingesting this preparation. Cassius Dio reports in his Roman Histories (Book LXXI, chapter 6; Cassius Dio 1969: 20-23) that the Emperor ate nothing at

all during the day – except his daily portion of theriac. Galenius, the Emperor's court doctor, also reported Marcus Aurelius' theriac consumption. Galenius also noted that the Emperor tried to get rid of the opium-component of his theriac – but then he suffered insomnia and returned to the old preparation, that included opium. (De antidotis liber II, caput I; Galenius 1965: 3-5). Galenius' description of Marcus Aurelius' theriac use is probably the first description of drug addiction in western history. Marcus Aurelius himself does not mention theriac in his famous Meditations.

Theriac became a cure-all remedy in Rome through the effect of the Emperor's example. It was again in use in the Middle Ages and was widespread in folk medicine until into the 20th century (Kaiser 2008: 261). However, its use and that of other opium preparations was delicate, since the composition of the theriac and the growing conditions of the plants meant that the drug was effective to varying degrees. Underdoses, which were ineffective, as well as toxic overdoses, were routine occurrences (Meyer 2004).

Taming Opium: Glauber the Alchemist and Sertürner the Apothecary

This resulted in particular in numerous attempts by alchemists to 'temper' and 'correct' the opium. One example of these efforts is provided by Johann Rudolph Glauber, a famous 17th century alchemist whose descriptions of the chemical processes he worked with are still comprehensible nowadays despite the use of alchemical names and symbols. In his *Pharmacopoea Spagyricae* he describes opium as sometimes 'not only making one sleepy / but also making some not want to wake up again / but to need rest up until the very Judgement Day / (now that is what I call a calming remedy)' (Glauber 1656: 90). Glauber then points out that many 'have invested a lot of effort in correcting the opium' for this reason (Glauber 1656: 90). Thus it was extracted with pure alcohol (*spiritus vini*) or concentrated acetic acid (*spiritus aceti*) and then crystallised, although this undoubtedly resulted in an unclean form of morphine (mixed with other alkaloids) which was then used. Glauber refined this process by treating the aqueous opium extract with sulphuric acid, filtering it, and then breaking it down with an alkaline potassium carbonate solution ("Liquor Nitri" Glauber 1656: 92 is not a nitrogen compound, see Gugel 1955: 51f., Link 1993: 127). With this method he refined the resulting opium extract, which mainly consisted of morphine. Even with today's knowledge, Glauber's was a practical method for extracting and refining morphine by first extracting it with acid and then breaking it down with bases, although today ammonium is usually chosen as a base.

We see that there is a long tradition of attempts to tame opium. The ‘discoverer’ of morphine is part of this tradition. In Paderborn (Germany) in 1804, the apothecary assistant Friedrich Wilhelm Sertürner isolated a grey precipitate from opium extracts that was not soluble in water, but easily soluble in acetic acid. By then adding ammonia, he got the same precipitate back, which showed that it was a stable product. Sertürner determined through an experiment he conducted on his dog that this substance caused the same sleepiness as opium and that the other components of opium were ineffectual. Sertürner concluded thus that he had found the effective component (Meyer 2004). He called the substance morphium. In today’s nomenclature the common name is morphine. Although it can be assumed that morphine had already been isolated by alchemists such as Glauber following similar procedures, Sertürner determined the basic nature of the substance, refined it carefully through recrystallisation and showed that it is in fact one of the active substances in opium using animal experiments.

His objective was to provide doctors with a pure substance of consistent quality: "He will always be able to use this substance dissolved in alcohol and acids with equal success, instead of the currently prevalent opium preparations which are not always uniform." (Sertürner 1806: 55).

Losing Control: World War I and Morphinism

Since taking morphine orally caused nausea, other ways to administer the drug were sought. The solution was found to be injection, a method that was developed independently in the 1850s by both the French doctor Charles-Gabriel Pravaz and the Scottish doctor Alexander Wood (White, van der Geest, Hardon 2002: 104). The first substance that Wood injected was in fact morphine. This new method of administration - with a syringe - almost made a new substance out of morphine - in any case a far more effective substance. Although he was not the first to describe the symptoms of morphine addiction (see Jacob, 1925: 88), it was Levinstein who coined the term ‘morphinism’ in a monographic publication. In his monograph he vividly describes how the easy technique brought about a ‘quick, miraculous effect against pain’: ‘Morphine injections were rarely carried out in Germany until about a decade ago. The simple technique of the Pravaz'schen method, which afforded a quick, miraculous effect against the pain for the seriously wounded and sick of the war of 1866, and the calm which it brought, rapidly paved the way for this treatment in Germany. The range of

therapeutic indications for the treatment was extended daily without distinction.' (Levinstein 1877: 1).

Levinstein thus represents the point where the substance escaped the hands of professionally trained doctors and began take on a life of its own. The method and the substance spread with extraordinary rapidity, especially following the opportunity to observe the beneficial effects of morphine on the many wounded during the Austro-Prussian War of 1866.
The subcutaneous injection of morphine soon became popular and the range of therapeutic indications was expanded considerably. 'Moreover, the Great War of 1866 and 1870/71 gave those involved and their dependents plenty of cause and opportunity to use a drug that was able to eliminate sorrows and pains at a stroke: within a short time, a disease previously unknown in Germany arose - the morphine habit.' (Jacob 1925: 88).

It was mainly doctors that spread the disease, as many observers noted, for example, the psychiatrist Emil Kraepelin: 'At this point serious charges must be raised against the medical profession with vehement condemnation, that it is first and foremost they whom we have to blame for the existence and the frightening spread of morphinism. If there were no doctors, there would be no morphinism.' (Kraepelin 1904: 142).

The invention of Heroin: A new trial in taming the drug

Morphium was soon extensively used in pain therapy and came into use especially in the wars of the 19th century: the Crimean War, the Prussian-Danish War, the Austro-Prussian War as well as in the Franco-German War. With the outbreak of World War I and the many millions of injured and dead, the demand for morphine increased dramatically. In 1920, the physician Sertürner and biographer Franz Krömeker wrote that 'morphine has become every doctor's indispensible companion. For millions during the World War it was the comforting angel on the battlefield and in the hospitals.' (Krömecke 1925: 1).

The problems with morphine, visible even before the First World War, had by the late 19th century motivated a search for a substitute which on the one hand was able to be better tolerated and on the other unleashed no dependency-creating potential. It was in this context that Felix Hoffmann developed diacetylmorphine at the Farben Fabriken vormals Friedrich Bayer, a compound which had indeed already been synthesised by other researchers, but had

nevertheless not been thoroughly tested for possible pharmaceutical effectiveness. Just as the alchemist Glauber and many others had tried to ‘temper the wildness’ of opium (Glauber 1656: 92), morphine was to be ‘tamed’ by acetylisation. The work at the pharmacology department at Bayer is therefore part of a centuries-old tradition; the topic was old, only the methods were new.

Similar to the isolation of morphine, and then subcutaneous administration with a syringe, acetylation was meant to increase the level of control over the substance. They clearly hoped to preserve the positive qualities of morphine with the new preparation, but to eliminate the negative by means of acetylation.

The plant pharmacologist Dreser tested the compound on animals and immediately recognised its pharmaceutical potential: the substance namely slowed respiration, yes, it made respiration more economical, as Dreser opined. After several animal trials, the preparation was put on the market as a cough medicine, and indeed at first as a respiratory sedative. In the prospect “Pharmaceutische Producte der Farbenfabriken vorm. Friedr. Bayer & Co. Elberfeld of 1901, a nice book with a typical Jugendstil-layout, much more space was devoted to Heroinum (30 pages) hydrochloricum then to Aspirin (18 pages). The company recommended Heroin against cough, against influenza, against insommnia, as analgeticum, narcoticum and as a substitute for morphin (Farbenfabriken vorm. Friedr. Bayer & Co. Elberfeld 1901: 228f.). The company proudly announces that more then a hundred medical papers have been devoted to Heroin, that was first used as a remedy in 1898 by Dreser (Farbenfabriken vorm. Friedr. Bayer & Co. Elberfeld 1901: 232). The name of the new product sounded much more promising than the one that had been chosen for acetylsalicylic acid: heroin. It is probable, that the name was derived from a formerly common name for strong remedies: these were called “heroic remedies”. Opium, the precursor substance, was traditionally counted among the heroic remedies, that also included arsenic, mineral acids, mercury-preparations, but also alcaloids like belladonna or digitalis (Froriep 1824: 301). Unfortunately the story of how the name was chosen cannot be followed as the relevant documents are no longer in the Bayer archives.

The substance was accepted by the grateful public. Lung diseases and various types of whooping-cough were widespread in the smoke-filled industrial cities of the 19th and early 20th centuries. Bayer produced heroin in kilogrammes and many other companies, domestic and foreign, jumped on the bandwagon. The head of the board of directors at Bayer, Carl Duisberg, sent some with best wishes for a speedy recovery to a colleague plagued by coughing. Mothers gave it to their children (Farbenfabriken vorm. Friedr. Bayer & Co.

Elberfeld 1901: 248). Only scattered voices were heard from doctors or scientists warning of dangerous side effects (Harnack 1899, see de Ridder 2000: 56-61), but that had also been the case for aspirin.

In fact, the increased toxicity of the drug was well known. But the fact that the drug led to dependence in the same way as morphine was overlooked for a long time, as the experts Otto Anselmino and Adolf Hamburger describe in their commentary published in 1931 on the opium law: 'The use of diacetylmorphine due to addiction was then, in 1920, not ... known to the medical authorities of the Reich and states.' (Anselmino, Hamburger 1931: 9).

Redefining Opiates: Politicians take control

With the onset of World War I, morphine, heroin and cocaine addiction had virtually become a national disease, at least in Germany. In 1925 the psychiatrist Walter Jacob summarised this, writing that: 'a large percentage have become morphine addicts as a result of wounds or psychological attrition in the field' (Jacob 1925: 94). The psychiatrist Karl Bonhoeffer, father of Dietrich Bonhoeffer, wrote in edition 4.1 of the Handbook of Medical Experiences in the Great War 1914/1918 (*Handbuchs der ärztlichen Erfahrungen im Weltkriege 1914/1918*): 'There was a clear increase in morphinism. This is explained mainly by the frequent use of morphine on the wounded and by the increased number of people involved in the delivery of morphine. The increase in morphinism developed particularly recently after the end of the war, so that at some clinics the number of morphine addicts exceeds that of alcoholics.' (Bonhoeffer 1934 (1921): 23). Many of the morphine addicts were addicted to both heroin and cocaine.

Also in America, where the preparation was usually administered intravenously, it was recognized that it had a high potential for being addictive, and in this respect presented no improvement over morphine. Heroin, like all morphine derivatives, leads to a reduction of sensitivity in the respiratory centre and thereby to a depression of all respiratory activities. Like all opiates, it can trigger addiction. The dream of finding a morphine substitute that did not generate an addiction had not been realised. Attempts to employ heroin to wean morphine addicts had the same effects as similar experiments in which cocaine was used to fight drug addiction.

Furthermore, heroin is more toxic than morphine. However, it is apparent that it also has advantages as a pain reliever in comparison to morphine as the onset of the effect is significantly faster and it has fewer side effects.

The War on Drugs in the USA

The battle against opiates was fostered by the USA. The anti-drug movement had, according to Anglo-Saxon historians, a Christian-moralistic background (see Buxter 2006: 43). It is argued that it also served to stigmatise population groups that were perceived by American society as a threat, such as the Chinese immigrants who consumed opium, as well as blacks (Musto 1999: 4f., see also Shapiro 1995: 32-41). Here opiates, especially morphine, but also heroin, were often administered without instructions. The result was a high number of addicts.

The United States was the driving force behind the first International Opium Conference in Shanghai. Recommendations were developed at this conference which then formed the basis of the First International Opium Convention of 23.1.1912. The agreement also regulated the use of diacetylmorphine (heroin), morphine and other alkaloids. The Opium Convention was to be ratified by the participating powers, but in the interest of the German pharmaceutical industry, the German Reich hesitated to ratify the agreement (Weber, 2009: 3).

With the introduction of the prohibition, the import of opium was declared illegal in the United States in the Smoking Opium Exclusion Act of 1919 (de Ridder 2000: 111). The substance was stigmatised and excluded from normal commerce – parallel to a stigmatisation and exclusion of specific population groups. The promotion of heroin to the most dangerous of all addictive substances began in 1917, thus during the First World War. In line with the propaganda against the enemy, Germany, heroin was denounced as a sneaky and highly dangerous poison, with which it was thought Germany was weakening the resistance of the American nation (de Ridder 2000: 114). After the war was won, the heroin-critical position became the foundation for all further initiatives in the USA against drugs in general and against heroin more specifically. The very powers that were critical of regulation (ie the German Reich and Austria but also the Ottoman Empire) had lost the war and now had to bend to the will of the victor. The US position could now prevail and the American prohibition policy was exported internationally.

The production became internationally controlled (Buxter 2006: 39). It was limited through quotas. At the same time, the signatory states were responsible for seeing to it that the

incriminated substances were used exclusively for medicinal purposes. These regulations were to be implemented in national laws. A national and international opium bureaucracy arose to control the implementation of the agreement. Even if the goal of the USA to slowly but surely stop production of the drug could not be achieved, production nevertheless sank (Buxter 2006: 57f.). The anti-drug policy of the United States was thus at first successful. In the 1920s and 1930s, the American stance on heroin and other opiates was further solidified, spurred on by this success.

In 1930, the Federal Bureau of Narcotics was established on the initiative of Steven G. Porter, a member of the American House of Representatives. Harry J. Anslinger was named as the organisation's first director (Musto 1999: 206f.). He sharpened the tone concerning opiates and also led the first campaign against marijuana. He described the danger that these substances presented drastically in books, brochures and films. Heroin and other drugs, for example marijuana, were presented as types of poison. The heroin-critical stance among the American public developed into a heroin-phobia that saw in the substance a highly dangerous bacillus, the very contact with which would lead to its damaging, often deadly, effects being felt.

Morphine and Heroin as Forbidden Substances? Pharmacologists and Doctors Protest against the Opium Law

After the capitulation of the German Reich, the ratification of the Hague Convention was imposed as a condition in Article 295 of the Versailles Peace Treaty. The Weimar Republic met the demand by creating the first German Opium Act on 30.12.1920. However, the control of opiates, especially heroin, was not implemented because of the Versailles Peace Treaty alone. The regulation of opiates and cocaine was recognised as necessary by professionals such as the Berlin pharmacologist Louis Lewin, who had first described the clinical picture of morphinism.

Nevertheless, even in the first review of the law in which Lewin had been instrumental, it was noted that the 'Opium Law ... [inhibits] the duty of the doctor to help the sick - specifically with analgesics.' (Lewin, Goldbaum 1928: 20). Commentators argued that addicts were sick people who 'require the substance with which they have become familiar and which is dear and necessary to them as much as the stomach or the entire body requires food.' (Lewin, Goldbaum 1928: 21). Withdrawal caused 'alongside pain ... the risk of acute physical and

mental breakdown.' (Lewin, Goldbaum 1928: 21). The Opium Act thus confronted doctors with an unsolvable dilemma: 'A doctor visited by such an addict, having been implored to help, will be ... faced with the choice of violating the law or providing help.' The commentators presented the ethical problem with extraordinary foresight: '[the doctor can in such a case] not heal because he cannot achieve this with all his tools. However, he can immediately help save such a broken personality from the risk of ultimate mental and physical collapse by administering or prescribing a dose of the narcotic in question.' Lewin and Goldbaum summarised thus: 'Other ways must be found to reduce the unquestionable worldwide evil of drug addiction.' The commentators conclude: 'we will never be able to eliminate it' (Lewin, Goldbaum 1928: 22).

Two doctors specialised in addiction medicine, Fritz Frankel and Joel Ernst, highlighted the medical dilemma even more clearly in a much-quoted article from 1927: 'When the morphinist has first truly lapsed into addiction, he gains ... no real enjoyment from his syringe, rather only the restoration of his equilibrium. When lacking his poison, the morphinist resembles a sick person with objective symptoms. This acute morphine sickness is relieved abruptly with the appropriate dose of morphine and in such a way that can only be achieved with morphine (or a related opiate). (...) Does morphine used in cases of pronounced morphinism serve as a medicine or a stimulant? It cures the acute morphine weakness and the deprivation symptoms. It heals of course by no means the morphinism, rather it entertains it.' (Joël, Fränkel 1927: 1055). But the two doctors drew further distinctions, in a way that has not lost its relevance: 'Any doctor who meets a morphine addict (without any other disease) will try to persuade him to follow a course of rehabilitation... . There are also patients that keep themselves able to work with relatively low doses and who do not improve in the slightest through treatments, rather that are damaged otherwise, and from repeated experience decline rehabilitation. Even in such cases, one would have to consider morphine prescriptions as serving a medicinal purpose.' (Joël, Fränkel 1927: 1055). The doctors used morphine as an example in their statements. However, the statements also applied to other alkaloids, which is why Joël and Fränkel also referred to alkaloid addiction (Joël, Fränkel 1927: 1052). Although they clearly supported the aim of the Opium Act to curb the abuse of narcotics, it was their central wish to move the substance back into the competence area of doctors: 'The decision on the existence of such a situation [namely whether prescribing opiates in individual cases fulfils a medical purpose] can, after careful examination, only be made by the doctor'. (Joël, Fränkel 1927: 1055).

The dilemma that morphinism and also heroin addiction (concerning the relative unimportant role of heroin consumption in the Weimarer Republik and in Nazi Germany see Holzer 2007: 207-214) posed to doctors was thus clearly described. The detail of the quotations is justified by the fact that even today this dilemma has lost none of its relevance. If the doctor helps an addict, then the addict remains addicted. If the doctor does not help him, then he leaves the addict in severe pain and with symptoms that can lead to physical damage and even to death. The distinction between medicine and stimulant, as Joël and Fränkel stress, is not applicable in such cases. It is not a distinction that can be drawn summarily, rather only in every case individually following medical examination. From today's perspective, Joël and Fränkel's position of easing pain by giving drugs where one cannot heal is thoroughly consistent because of the relatively common phenomenon of 'maturing out': With age, many drug addicts find the strength or the maturity to break away from the drug (Schmidt-Semisch 1990: 54f.). Thus the paradox, how a drug-addict can be treated with the very substance, that causes his pain, can be solved in the long run or at least has a perspective that it may be solved. This gives the Doctor’s position concerning opiates a certain superiority over the prohibitionists position.

From the perspective of lawyers and politicians, however, drug addiction is in no way a disease but a bad and dangerous habit; a vice that can be wiped from the world with the threat of punishment and penalties. They also did not know how to distinguish generally and in a sufficiently convincing way between use as a medicine and use as a stimulant. Several cases brought before the Reichsgericht (high court) document the various makeshift decisions made by the judges. Time and again, the highest court of the German Reich was forced to take the role of the doctor and determine whether a medical or stimulant purpose was at hand in individual cases (Decisions of the Reichsgericht / *Entscheidungen des Reichsgerichts* 1927: 365-371). Pharmacists were also urged to take on the role of medical regulators, but they protested with reference to the medicinal edict from Kaiser Frederick II of 1240, which prohibited pharmacists from practicing medicine; a norm that has existed with good reason ever since (Ries 1965). Nevertheless, the fragile balance between lawyers and doctors continued into the 1960s. The substance of the opium law remained untouched for decades.

But then the student revolt began, and many of its protagonists had a very positive relationship with all kinds of mind-altering substances, including heroin. From the beginning of the 1970th on, Heroin-Use in Germany as in other countries, grew significantly (Holzer 2007: 433). Now the opiates, as well as other drugs, got caught in the crossfire of a cultural struggle between the younger and the established generations. Käte Strobel, then federal

minister for youth, family and health commented in a political debate in the Deutsche Bundestag of 12.3.1971, that the conflict between the generations was an important factor that determines, whether a young man or a young woman will use drugs: “The more intense the pupils, that have been asked, feel the problems between the generations ... the more probable it is, that they use drugs.” (Strobel 1971: 18). The fragile balance between medical and legal perspectives on the drugs was destroyed. The medical and pharmaceutical knowledge-system and the medical normative system did not set no longer the agenda of the discussion. There was no room for subtleties in the battle of the generations. The legal side asserted itself and removed all of the conceptual dilemmas with decisions by force. The generation challenged by the student revolts responded to the large role of mind-altering substances in the student revolts of the 1960s with the execution of the United Nations' 1961 Single Convention on Narcotic Drugs. In Germany, the Opium Act of the Weimar Republic was replaced in 1972 with a new version of 22.12.1971, known as the *Betäubungsmittelgesetz* (narcotics law). A revised narcotics law came into force in 1982 and was barely changed until the early 1990s (Weber 2009: 4).

This law permanently passed heroin and some other substances from the hands of doctors to those of police officers and judges. In Appendix 1 of the Act, heroin was declared a ‘non-trafficable substance’ and could therefore no longer be prescribed. Everything was now clear in legal terms. The vexatious differentiation between medicine and stimulant was gone: heroin was simply declared not to be a medicine. The dilemma mentioned by the first commentators on the Opium Act and which is quoted above was not only never resolved, but negated.

This assertion succeeded because heroin had in a sense become an orphan socially. Production was stopped in Germany because after great initial success, demand had shrunk significantly, and thus no longer had the support of the powerful German pharmaceutical industry. Proponents of the drugs were not yet in positions of power, but acted as ‘extra-parliamentary opposition’.

The law enforcement authorities could now begin to use their resources to deter the interested and the experimenters and to push addicts into social isolation. All to the acclaim of a portion of the public which increasingly demonised heroin, developed heroin-phobia, and saw in the drug the real reason for the strange behaviour of the youth. Heroin was now considered evil. Drugs - heroin included - were so restricted that we can speak of an almost universal de facto ban.

This had truly cruel consequences for the addicts who, because it was incorrectly believed that they simply lacked willpower, were abandoned to impoverishment and forced into crime. The medical principle that in cases where you cannot heal you can at least offer relief was repealed for cases of addiction by the internationally coordinated opium and narcotics laws. Addicts in particular were under no circumstances to be given their substance, despite it being known since the 1920s that in many cases a complete withdrawal from opiates is not possible, but that a normal life can be obtained only by continuing to give small or medium-sized doses (Ullmann 2001: 23). But this no longer applied: ‘it was now the law of all or nothing: without prior abstinence, which often had to be achieved without any medical relief, there was no treatment for any serious illnesses, neither physical nor mental.’ (Ullmann 2001: 24). The lawyers and politicians had withdrawn the authority over heroin and other drugs from doctors and assumed it for themselves. They then sought the assistance of psychologists. They attempted to use their resources to establish control over these substances; an attitude that was not even shaken by the HIV epidemic, which was particularly widespread among injecting drug users. Thus, in 1987 a chief federal prosecutor took his own staff to court for having described supplying drug addicts with single-use syringes as legally unobjectionable. In 1995, the federal government's drug commissioner judged the establishment and operation of drug consumption rooms in Frankfurt to be a criminal offense (Körner 2001: VII). A law professor's idea of giving heroin to addicts (Adams 1994) was immediately dismissed by drugs politicians as ‘cloud cuckoo land’. It was considered more important to give the addicts the moral support to give up their addiction (Eylmann, Kusch 1994).

The concerns of doctors and pharmacologists, however, held no sway and morphinists were increasingly put under pressure (Ullmann 2001: 21).

The Present Situation: Less Control than Ever

By damning heroin to being a non-trafficable and thus de facto banned substance, the Federal Republic of Germany was following the broad lines of the drug policy put forward by the United States. That is not to say that the policy had not been propagated in Germany with genuine conviction, especially, but not only, among conservative politicians.

The narcotics laws, which were equivalent to prohibition, not only antagonised a deplorable situation but also produced new ones. The descent of many addicts into crime, their health and social deprivation, and their deaths were accepted as a loss and even falsely used as evidence

of the danger of heroin, even though it had been known since the 1920s that addicts may well live a normal middle-class life if they are given their dose.

Heroin has, as already stated, comparatively few side effects. A medical practitioner specialised in addiction gives the following verdict: ‘the substance, heroin, is … less toxic than often assumed. The pharmacological damaging bodily effect of heroin is comparative to that of alcohol or nicotine. The main danger of heroin consumption is attributable to the unsterile storage and application of the substance and lies in an infection with HIV or hepatitis. The often toxic cutting substances also make heroin consumption risky.” (Croissant, Croissant, Mann 2003: 181). In becoming an illegal substance, that is only sold on black markets, Heroin changes names, its meaning and even its substancial properties according to the new environment in which it circulates now. It is produced now with primitive means on the countryside for example in Afghanistan, not by chemists, but by farmers (Zerell, Ahrens, Gerz 2005). It is smuggled in nearly all possible and impossible ways to the consumers. As buying or selling or even owning it is illegal, it gets covernames. It is called “White Horse”, “Dragon”, “Smack”, “H” or “Brown Sugar”. As on black markets, there is no official quality control, and no chance for the consumer to press charges to crooked sellers (Sauermann 1985: 8), the substance is very often impure. The blackmarket-Heroin is much more dangerous than the pure Heroin that Bayer once sold. To be sure: Heroin *is* a dangerous substance. But the illegal Heroin is much more dangerous than the legal ever was.

The numerous deaths from hepatitis and HIV infection among drug users have their roots in the prohibition and can barely be justified ethically (Schmidt-Semisch 1990: 40-46, Ullmann 2001: 24f.). It is undoubtedly the harsh prohibition policy, implemented by legal means enforcing international agreements since the late 1920s, that is responsible for the impoverishment and the high mortality of drug addicts, even though it is this very impoverishment that is used to justify the policy of repression.

Even the supposedly healthy suffered the negative side effects of the prohibition policy. It no longer went without saying that seriously ill patients would be given opiates. Often these patients also succumbed to heroin-phobia and refused to be treated with opiates.

A lesser known but equally grave side effect of the restrictive heroin policy built upon an irrational heroin–phobia is the frightening undersupply of seriously ill and dying people with effective opiates. Of course, no one will share the enthusiasm of the discoverers of heroin of the early 20th century and see heroin as an all-purpose wonder drug. But nevertheless, it is not to be overlooked that is in fact an effective drug against strong coughing, such as the

consequences of tuberculosis. But above all, it is a highly potent pain reliever. In essence it functions in the same way as morphine but takes effect faster and it does not generate nausea. For terminally ill patients suffering from great pain, it can bring relief like no other medicine (Cornwath and Smith 2002: 146-153). The pain is distanced by taking heroin, without noticeably clouding the consciousness. A doctor therefore wrote in a new study on heroin: "In any fair assessment, one would have to say that even after a hundred years, heroin remains a medicine without a superior" (Cornwath and Smith 2002: 146-153).

It is not only the doctors who keep the administration of alkaloids at a low level. The patients themselves often refuse opiates for fear of becoming addicted. The concept the patients have of opiates means the bottle stays in the cabinet. The Norwegian doctor and pain expert Stein Husebö commented about terminally ill patients: "If I recommend to cancer patients that we start treatment with morphine, many say: no, I don't want that. I don't want to become a drug addict!" (Husebö 2001: 120). In Germany, on the other hand, the country in which morphine was first isolated and characterised and in which heroin was first industrially produced, the doctor and heroin historian de Ridder believes that very ill and dying patients are being undersupplied with pain relievers, especially with opiates (de Ridder 2010: 93-113). One expert estimates that the number of people suffering from tumour pain who receive insufficient support lies in the region of 190,000 (de Ridder 2010: 98). This may appear to be an overestimation, but it is certain that there is an undersupply of pain relievers in more than a few isolated cases, even today, despite the efforts of palliative medicine and the hospice movement to dispel the fear associated with opiates.

If we consider the enormous influence of the drug mafia etc. then it can be seen that there are many other side effects of an economic and political nature which would not even exist were it not for the prohibition. However, there is already a large amount of literature on this topic (Gootenberg 2005, Cornwath and Smith 2002: 62) and it can be left out here.

Only in the UK has the medical perspective on the subject survived. Drug addiction has always been regarded there as a health problem. Only in Great Britain and Belgium can heroin still be prescribed by a doctor. Here, the medical perspective on drug-addiction never faded out, drug addiction never has been seen exclusively as a moral problem but as a health problem (Schmidt-Semisch 1992: 34-36).

The chemical and medical optimisation of the original substance, opium, through agent isolation, processing, and the refinement of its administration, did not lead to perfect control over it. Rather, the increased potency also intensified its problematic characteristics. In the same way, the political war carried out in the name of public health against morphinism and

heroin addiction has not led to an increase in general welfare, but has caused torment and misery for countless addicts. It has supported drug cartels and other underground organisations, some of which have gained so much power that they can challenge states. The historic progression from opium to morphine to heroin, with the associated extreme scientification, spun out of control. The war against drugs carried out by politicians, lawyers and the police in order to restore this control unintentionally became a war against drug cartels, but also against part of their own population: against drug addicts. The war escalated, but did not end in a victory. Not only has control not been restored, but the lack of control has escalated and in some areas has shaken entire states.

Yet even in Germany a rethink can be identified since the early 1990s. This is probably due in part to the spread of HIV, which affected addicts considerably. To control the contagion, alleviating measures such as needle exchanges were allowed; even substitution programs were made possible subject to many conditions. A further 'pillar' in drug policy is being given increased attention, namely that of harm reduction (Weber 2009: 5).

On the other hand, the legislature is, bit by bit, facilitating the medical use of opiates, in particular thanks to political lobbying by the hospice movement and palliative medicine. Thus since 2009 it has again been possible to prescribe heroin to serious addicts in Germany, provided they meet certain conditions, thanks to a regulation amendment.

Nevertheless, in our society, handling heroin and other opiates remains bound to a restrictive regime, in part because this is additionally laid down in international treaties, and in part because a critical attitude towards drugs has now become a part of the self-definition of conservative circles. From an ethical standpoint, the statutory handling of heroin and opiates is certainly highly problematic. One is inclined to agree with the words of Hans Harald Körner, a long-time commentator on the *Betäubungsmittelgesetz* (narcotics act), who notes that a 'comprehensive review of the BTMG is urgently required' (Körner 2001: VII).

One gets the impression that the situation in the early 1920s, when a prescription was required for opiates but the decision about their use still rested in the hands of doctors, was better than that today, since the authorities now control the permits for handling them. It seems advisable to wipe the slate and give heroin and opiates a new chance. It would be desirable that heroin break free from its special status as a 'prohibited substance' step by step and again be regarded, in the same way as the other potentially addictive alkaloids, as part of the range of modern medicines - as a medicine in the hands of doctors.

The anomaly, reminiscent of pre-modern times, that politicians, the police and judges make the decisions about medicines and their use, as well as therapeutic procedures, has, it seems the story of heroine teaches, brought little healing.

Literature

Adams, Michael:Heroin an Süchtige – Kollektiver Wahnsinn oder das gesuchte Konzept zur Zerstörung des Drogenmarktes? In: Zeitschrift für Rechtspolitik 1994, Heft 3, S. 106-111.

Anselmino, Otto, Hamburger, Adolf: Kommentar zu dem Gesetz über den Verkehr mit Betäubungsmitteln (Opiumgesetz) und seinen Ausführungsbestimmungen. Berlin, Verlag von Julius Springer 1931.

Assmann, Jan 1999: Das kulturelle Gedächtnis. Schrift, Erinnerung und politische Identität in frühen Hochkulturen. München: C.H. Beck.

Bayer AG (Hg.) 1997: Aspirin. The future has just begun. Leverkusen.

Bonhoeffer, Karl: Die Bedeutung der Kriegserfahrung für die allgemeine Psychopathologie und Ätiologie der Geisteskrankheiten. In: Handbuch der Ärztlichen Erfahrungen im Weltkriege 1914/1918. Bd. IV: Geistes- und Nervenkrankheiten. Hg. Von Prof. Dr. Karl Bonhoeffer. Johann Ambrosius Barth, Leipzig 1922/1934, S. 3-44.

Buxton, Julia 2006: The political economy of narcotics: Production, consumption and global markets. London: Zed books.

Cassius Dio 1969: Roman History, IX. Cambridge, MA and London: Harvard University Press / Heinemann. Loeb Classical Library

Carnwath, Tom; Smith, Ian 2002: Heroin Century. London: Routledge.

Croissant, Bernhard, Croissant, Daniela, Mann, Karl 2003: Cannabis, Ecstasy, Heroin & Co.: Aktuelle Informationen zum Drogenkonsum. In: Biologie in unserer Zeit, 33. Jg. 2003, Nr. 3

De Ridder, Michael 2000: Heroin. Vom Arzneimittel zur Droge. Campus, Frankfurt am Main 2000.

de Ridder, Michael 2010: Wie wollen wir sterben? Deutsche Verlags-Anstalt, München.

Entscheidungen des Reichsgerichts 1927. Hg. von den Mitgliedern des Gerichtshofes und der Reichsanwaltschaft. Entscheidungen in Strafsachen. 60. Band, Leipzig und Berlin: de Gruyter 1927.

Entscheidungen des Reichsgerichts 1929. Hg. von den Mitgliedern des Gerichtshofes und der Reichsanwaltschaft. Entscheidungen in Strafsachen. 62. Band, Leipzig und Berlin: de Gruyter 1929.

Entscheidungen des Reichsgerichts 1931. Hg. von den mitgliedern des Gerichtshofes und der Reichsanwaltschaft. Entscheidungen in Strafsachen. 65. Band, Leipzig und Berlin 1931.
Entscheidungen des Reichsgerichts 1940. Hg. von den Mitgliedern des Gerichtshofes und der Reichsanwaltschaft. Entscheidungen in Strafsachen. 73. Band, Leipzig und Berlin: de Gruyter 1940.
Entscheidungen des Reichsgerichts. Hg. von den mitgliedern des Gerichtshofes und der Reichsanwaltschaft. Entscheidungen in Strafsachen. 65. Band, Leipzig und Berlin 1931.
Entscheidungen des Reichsgerichts. Hg. von den mitgliedern des Gerichtshofes und der Reichsanwaltschaft. Entscheidungen in Strafsachen. 65. Band, Leipzig und Berlin 1931.
Eylmann, Horst, Kusch, Rober: Heroin an Süchtige – Wokenkuckucksheim oder professorale Genialität? IN:Zeitschrift für Rechtspolitik, 27. Jahrgang, Juni 1994, S. 209-211.
Farbenfabriken vorm. Friedr. Bayer & Co. Elberfeld 1901: Pharmaceutische Producte der Farbenfabriken vorm. Friedr. Bayer & Co. Elberfeld 1901.
Froriep, Ludwig Friedrich 1824: Notizen aus dem Gebiete der Natur- und Heilkunde, gesammelt und mitgetheilt von Ludwig Friedrich v. Froriep. Siebenter Band, Erfurt, Lossius.
Galenius: Claudii Galeni Opera Omnia Editionem curavit C.G. Kühn, Tomus XIV (De Antidotiis, lib. II). Georg Olms, Verlagsbuchhandlung Hildesheim 1965 (Leipzig 1827).
Glauber, Johan Rudolph: Pharmacopoeae Spagyricae Ander Theil. De Vegetabilium, Animalium, & Mineralium praeparatione per Solvens Universale. Amsterdam, Johan Janssen 1656.
Gootenberg 2005: Talking Like a State: Drugs, Borders, and the Language of Control. In: Willem van Schendel, Itty Abraham 2005: Illicit Flows and criminal things. Indiana University Press 2005.
Gugel, Kurt F.: Johann Rudoph Glauber 1604-1670, Leben und Werk. Mainfränkische Hefte, Heft 22, Würzburg 1955.
Holzer, Tilmann 2007: Die Geburt der Drogenpolitik aus dem Geist der Rassenhygiene. Deutsche Drogenpolitik von 1933 bis 1972. Books on Demand, Norderstedt.
Husebö, Stein: Was bei Schmerzen hilft. Ein Ratgeber. Freiburg, Basel, Wien: Herder 2001.
Jacob, Walter 1925: Zur Statistik des Morphinismus in der Vor- und Nachkriegszeit. Archiv für Psychiatrie, Bd. 76, 1925, wiederabgedruckt in: Wiener Zeitschrift für Suchtforschung, jahrgang 7, 1984, Nr. ½, S. 87-96.
Jeffreys, Diamond 2004: Aspirin. The remarkable Story of a Wonder drug. London: Bloomsbury.

Ernst Joel, Fritz Fränkel: Öffentliche Maßnahmen gegen den Mißbrauch von Betäubungsmitteln. In: Klinische Wochenschrift, 6. Jahrgang, Nr. 22, S. 1053-1057.

Kaiser, H. 2008: Von der Pflanze zur Chemie – Die Frühgeschichte der „Rheumamittel“. In: Zeitschrift für Rheumatologie 3, 2008, S. 252-262.

Körner, Harald Hans: Betäubungsmittelgesetz, Arzneimittelgesetz. Beck'schce Kurz-Kommentare, Bd. 37, Verlag C.H. Beck, München 2001.

Kraepelin, Emil: Psychiatrie. Ein Lehrbuch für Studierende und Ärzte. Siebente, vielfach umgearbeitete Auflage. Leipzig, Verlag von Johann Ambrosius Barth 1904. Bd. II: Klinische Psychiatrie.

Krömeke, Franz: Friedrich Wilh. Sertürner, der Entdecker des Morphiums. Lebensbild und Neudruck der Original-Morphiumarbeiten. Jena: Gustav Fischer Verlag 1925; Nachdruck der Originaausgabe Severus Verlag 2010, Hamburg.

Kuhnert, Nikolai 1999: Hundert Jahre Aspirin. In: Chemie in unserer Zeit, 33. Jg. Heft 4, S. 213-219.

Lewin, Louis, Goldbaum, Wenzel: Opiumgesetz nebst Internationalem Opiumabkommen und Ausführungsbestimmungen. Kommentar. Verlag von Georg Stilke in Berlin, 1928.

Levinstein, Eduard: Die Morphiumsucht. Eine Monographie nach eignen Beobachtungen. Berlin: August Hirschwald 1877.

Link, Arnulf: Johann Rudolph Glauber 1604-1670. Leben und Werk. Dissertation, Universität Heidelberg 1993

MacCoun, Robert J. and Peter Reuter 2008 (2001): Drug War Heresies. Learning from other Vices, Times, and Places. Cambridge University Press.

Meyer, Klaus: Dem Morphin auf der Spur. In: Pharmazeutische Zeitung online, 2004, http://www.pharmazeutische-zeitung.de/index.php?id=titel_16_2004 (Aufgerufen am 12.8.2010).

Musto, David F. 1999: The American Desease. Origins of Narcotic Control. 3rd Edition Oxford University Press.

Nerepka, Arthur: Die ärztliche Berufstätigkeit im Hinblick auf das Opiumgesetz und seine Ausführungsbestimmungen. Inaugural Dissertation, Bayerische Friedrich-Alexanders-Universität Erlangen, Erlangen 1929.

Ries, J. 1965: Strafrechtliche Haftung des Apothekers bei Verstößen gegen das Opiumgesetz durch Abgabe von Betäubungsmitteln. In. Pharmazeutische Zeitung Nr. 28, Juli 1965, S. 903-905.

Rosenthaler, L. : Neue Arzneimittel organischer Natur. Berlin, Verlag von Julius Springer 1906.

Roth, Klaus 2007: Eine unendliche chemische Geschichte – Contergan. In: Ders.: Chemische Delikatessen. Weinheim: Wiley, S. 172-179.

Sauermann, Heinz: Charakteristika von Schwarzmarktgütern und von Firmen im Halbschatten als Folge spezifischer Koordinationskosten des illegalen Sektors. Universität Konstanz: Fakultät für Wirtschaftswissenschaften und Statistik, Serie A, 208, 1985.

Schmidt, Karlheinz und Zerbst, Marion 1997: Aspirin. Mehr als nur ein Kopfschmerzmittel. Thieme Verlag, Stuttgart.

Schmidt-Semisch: Drogenpolitik. Zur Entkriminalisierung und Legalisierung von Heroin. Hamburg / München: AG SPAK 1990.

Schmidt-Semisch, Henning 1992: Drogen als Genussmittel. Ein Modell zur Freigabe illegaler Drogen. München: AG SPAK 1992.

Sertürner, Friedrich: Darstellung der reinen Mohnsäure (Opiumsäure) nebst einer chemischen Untersuchung des Opiums mit vorzüglicher Hinsicht auf einen darin neu entdeckten Stoff und die dahin gehörigen Bemerkungen. In. Journal der Pharmacie für Aerzte, Apotheker und Chemisten von D. Johann Barholmä Trommsdorf. Bd.14, Leipzig 1806, S. 33-57

Shapiro, Harry: Sky high. Droge und Musik im 20. Jahrhundert. Hannibal, St. Andrä-Wördern.

Starko, Karen 2009: Salicylates and Pandemic Influenza Mortality, 1918–1919 Pharmacology, Pathology, and Historic Evidence. In: Clinical Infectious Diseases 2009;49:1405–1410.

Strobel, Käte 1971: Beratung des Gesundheitsberichts. Aus der Debatte des Deutschen Bundestages vom 12. März 1971, 108. Sitzung der 6. Legislaturperiode. In: Presse- und Informationszentrum des Deutschen Bundestages (Hg.): Gesundheitspolitik I. Stuttgart: Kohlhammer 1971, S. 9-19.

Ullmann: Geschichte der ärztlichen Verordnung von Opioiden an Abhängige. In. Suchttherapie Sonderheft 2001: 20-27.

Whyte, Susan Reynolds; van der Geest, Sjaak; Hardon, Anita 2002: Social Lives of Medicines. Cambridge University Press.

Zerell, U., Ahrens, B., Gerz, P.: Documentation of a heroin manufacturing process in Afghanistan. Bulletin on narcotics 01/2005; 57, 11-31.