Chapter 2

Paracelsus, Theophrast von Hohenheim (1493-1541):
A Holistic Approach to Health Including the Social Scientific Point of View

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2.1 Introduction:

Paracelsus, his Life and Holistic Approach

More than five hundred years ago, Theophrastus Bombastus von Hohenheim (1493-1541), who called himself Paracelsus, was born at Einsiedeln (Switzerland) as the son of a German physician and chemist, Wilhelm Bombast von Hohenheim. Today, his achievements in the areas of medicine, philosophy, linguistics, and theology are widely acknowledged. Many of the works by Paracelsus have been published posthumously. Only between 1549 and 1658, 175 editions appeared. The research by Karl Sudhoff, who edited fourteen volumes of his medical and philosophical work created a scientific basis for further investigation. For his social-political writings he is less well known, because this work has been found very late in order to be included in the complete Paracelsus edition. It contains his contributions to comprehensive health sciences and health economic aspects, which are the focus of this chapter.

Paracelsus received his early education from his father. At the age of sixteen he went to Basel University, but soon abandoned his studies at Basel for the study of chemistry and alchemy under Withemina, the Bishop of Würzburg. He continued his studies in Tübingen, Heidelberg, Leipzig, Vienna and Ferrara. In 1515 or 1516 he received his doctorate in both medicines (i.e., internal and external) in Ferrara.

From 1516 until about 1524, he traveled widely through Europe. He sustained himself by his continually moving practice as he normally did not stay longer than three months at the same place. He cured the famous as well as the poor; among his famous patients was Erasmus of Rotterdam. Paracelsus collected a vast amount

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of medical knowledge not only through the study of medicine, but also through observation, experience and contacts with barbers, healers, gypsies, and executioners practicing folk medicine. He served some time as a military surgeon in the Low Countries, Denmark, and Italy, and learned practical metallurgy at the mines in Tirol. The mines belonged to the Fugger family, who took patronage of Paracelsus' work. In the mines he studied the processes of preparing metals and conducted experiments as to their medicinal virtues. He also found out that particular diseases of miners were caused by the metals they were exposed to in the mine.4 Between 1520 and 1522, he wrote early monographs on the diseases of miners. Around 1525, 1526 he wrote the draft towards an Alchemia medica with the goal to separate the effective medicine from its ineffective part.5

In 1527, Paracelsus was appointed city physician at Basel. Related to that position was a professorship of medicine at the University of Basel. He introduced fundamental changes in the way and method of teaching. It was the tradition to teach in Latin, but Paracelsus gave his lectures in the German language. The study of medicine used to be theoretical. Paracelsus however required his students to actually see patients and to become practical physicians. Basing the knowledge of students on experience meant a revolution in the way of teaching.6

Paracelsus was compelled to leave Basel in 1528. He had made enemies in Basel, among them the guilt of the pharmacists, because he fought against high prices of medicine. The issue that led to his dismissal was an unsettled question about his honorarium. When he treated successfully a dignitary of the church, the cured patient did not want to pay him the full amount of the pre-negotiated honorarium, but only a small portion of it. He went to court in order to get the full honorarium, but the judge decided the case in favor of the church dignitary and he ordered Paracelsus to leave town. (Hanel, 1995, op. cit., p. 12.) Paracelsus resumed his wanderings mostly through the South of Germany, Switzerland, and Austria. In 1541, Paracelsus returned to Salzburg, where he died in 1541. The circumstances of his death were related to payment. When he went to a patient's house to gather his honorarium for a treatment that he had performed, but for which he never had been paid, he found that the patient, in the meantime, was treated by another doctor. Paracelsus became his victim, because that doctor ordered the servants to throw him out of the window.

Paracelsus work not only had an influence on medicine, but also on disciplines such as theology, philosophy, astronomy, linguistics and psychology. Often, Paracelsus would invent new names, because the words he found in the established systems

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were inadequate to describe the facts he observed. His vocabulary is studied by linguists, who focus on the development of the German language. In the fragmentary *Valumen Paramirum*, which belongs to his early writings around 1520, his holistic approach becomes clear. Paracelsus distinguished between five different spheres, which have an influence in causing illness: the cosmic sphere; the environment; factors of heritage; spiritual disturbances; and God's will. God is thought to send illness as a way of punishment.

Three major medical works by Paracelsus can be distinguished. In his book *Paragranum*, written around 1529/30, he devised a program of a new medicine based on four pillars: "Philosophia," the natural sciences and natural philosophy; "Astronomia," the cosmic influence on humans; "Alchemia," the teachings of medicine based on chemistry; and "Proprietas," the duties of the physician derived from a Christian ethically point of view. His *Opus Paramirum*, written around 1531, contains basic observations on the causes of illness, as well as philosophical ideas. The *Grosse Wundtartzney* (Large Handbook for the Healing of Wounds) was printed in two parts in 1535. In the first part, he advised for a conservative treatment of wounds, supporting the self-healing capability of patients; the focus of the second part was on internal medicine.

Paracelsus exerted a profound influence upon the medical beliefs of his time and found followers who continued his work. He destroyed the "humoral pathology," which was founded on the belief that diseases depend upon an excess or deficiency of bile, phlegm, or blood and taught instead that diseases were actual entities and were to be combated with specific remedies. He denounced the medicine of the Arab physicians, whose teachings were then generally followed. He laid the

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7 Paracelsus publicly burned the works of Galen. Galen (c. 129-200) was a Greek physician, whose main work has been translated into the Arab language. He was the physician to several Roman emperors and learned about the organs from dissection of animals. He was the first physician to describe diagnosis from the pulse. "Galen's writings were regarded as almost infallible both in the East and the West until well into the sixteenth century ... He believed strongly in *pneuma*, a word untranslatable by any single English word, but which strongly resembles "spirit" or "breath of life" ... In addition to the doctrine of the *pneuma*, Galen held the Hippocratic view of the four humors and their accompanying types of emotion: blood (sanguine), phlegm (phlegmatic), black bile (melancholy), and yellow bile (choleric). These Galen related to the classical doctrine of the four elements: earth, air, fire, and water." "Galen," *Collier's Encyclopedia*. 1995. New York: Collier's. Vol. 10, p. 538.

8 Based on the Greek medicine, Arab medicine had a strong impact on the course medicine took, and looks back at a long history. For instance, Arab physicians were experts at distillation and developed many drugs for treatment of illnesses. Rhazes (c. 850), an alchemist from Baghdad, distinguished between measles and smallpox. He founded a hospital in Baghdad and wrote a Graeco-Arabic medical encyclopaedia. See Norris McWhirter. 1999. "Medicine and Health." *The Book of Millenium Records*. London: Virgin Publishing Ltd., pp. 90-97. p. 90.
groundwork for pharmaceutical medicine; he introduced new remedies, for instance
opium, mercury, sulphur, iron, arsenic, etc. and strove to reduce the overdosing then
practiced. A famous follower of Paracelsus was Johann Baptist von Helmont (1579-

Paracelsus' holistic approach had an important influence on Goethe and C. G. Jung. Goethe read Paracelsus in a time when he suffered from a serious illness. He “recognized medicine’s indebtedness to the tradition of "holism” when he commented in his autobiography "Medicine employs the whole man, because it is occupied with the whole man."\footnote{Mark E. Blum. 1993. "Paracelsus, Goethe, and C. G. Jung: The Logic of Individuation and Its Implications for Health Care - An Abstract." Footnotes omitted. Jürgen Backhaus. Volume editor. \textit{International Review of Comparative Public Policy}, Vol. 6, pp. 245-274.} Paracelsus not only saw the physical side of an illness, but also the soul of a patient and the social circumstances, the patient lived in.

Paracelsus' holistic approach also inspired C. G. Jung: “When Carl Gustav Jung in our century explained his analytical psychology, which treated the physical, emotional, social, and spiritual dimensions of the person, he referred to the writings of Paracelsus as a helpmeet in articulating his perspective.”\footnote{Compare Burton A. Weisbrod. 1983. \textit{Economics and Medical Research}. Washington and London: American Enterprise Institute for Public Policy Research.} The results of C. G. Jung's analytical psychology are still relevant in the cure of some mental disorders such as drug addiction. A promising area of application of this line of research lies in the outpatient treatment of mentally ill persons. Blum has developed and implemented such an out-patient program, which allows drug addicts to delineate the cultural variables, which impact their life. In an out-patient program, the patients can maintain their social and economic activities, and by relying on facts from the patients' environment, the therapist can provide them with better guidelines than in an in-patient program. From a cost-effectiveness standpoint, out-patient programs tend to be preferred to in-patient programs.\footnote{Paracelsus. 1952, \textit{op. cit.} For an overview of Paracelsus' social writings}

During his lifetime, Paracelsus continuously had the problem that competitors would reprint and alter his medical texts. There were, of course, no copyrights. His social science related writings were not subject to the same plagiarism and vandalism as they have more the character of a public good and hence were not subject to stealing. This is why his social science writings have remained more authentic and also shed light on his medical writings. He was a holistic author who saw the practice of medicine always in the context of societal circumstances, in which it had to occur.\footnote{Paracelsus. 1952, \textit{op. cit.} For an overview of Paracelsus' social writings} The context with economic issues is the main focus of this chapter (2.2).
Economic consequences of monopolies in health care are the subject of the third section (2.3). The chapter ends with a summary and conclusions.

### 2.2 Economic Thoughts in Paracelsus’ Social Writings

Paracelsus was a devoted physician, theologian and philosopher, who distinguished among several realms of which a society is composed.

> Therefore there are four estates (ordine, monarchias), as there are one agriculture, another crafts, a third the liberal arts, a fourth the government (authority, magistracy).\(^\text{13}\)

According to Paracelsus, medicine and medical care belonged to the third monarchia, the liberal arts.

> Now in the third monarchia, there are many arts and sciences, which God revealed, as astronomia, medicina. These arts and labor cannot be paid. For who can pay a good physician who brings you back lost health and keeps you alive, until the last minute comes?\(^\text{14}\)

Paracelsus oftentimes pondered about the nature of medicine. On the one hand, he considered medical care a priceless service, but on the other hand, he noted that patients faced a high risk of treatment, because the medical scientific knowledge of his time was uncertain, medical cures were not reliable and physicians were frequently not able to help.

> All the time, and with great and unrelenting efforts I have tried to understand the basic reason of medicine, in order to understand whether medicine can really be called an art, or not, and what basically it consists in. I have been driven in this by various causes. Among them are the uncertainty with which our treatments are wrought, which is reflected in the low esteem and the lack of applause of our daily practice: likewise, that so many patients perish: that they die, remain paralyzed, or are abandoned by their doctors. And this is not only the case with respect to just particular conditions; it is true for pretty much all the conditions. Our entire practice is unreliable. In my time, there is not a single doctor who would be able to heal a toothache with certainty, nor

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\(^{\text{14}}\) Paracelsus, 1952, \textit{op. cit.}, p. 126. This quote by Paracelsus and the translation is according to Johannes Hanel, 1995, \textit{op. cit.}, p. 3.
an even smaller illness, not to speak of a serious illness at all.\textsuperscript{15}

The struggling physician even wanted to give up his career, because he thought that the medical practice could never become a reliable art.

Never have I made the experience that I can ever be completely sure about the effect of a medical practice and cure, no matter what kind of illness it was. I have thought about it a lot, that medical practice is an unreliable art, which cannot be used adequately, the right cure is hard to find, even under the best of circumstances and with luck heals one, but makes ten others ill. This gave me a reason to think that it is a betrayal of spirits in order to deceive men and to make them small.\textsuperscript{16}

At other times, Paracelsus was able to overcome these feelings; then, he decided that medicine and medical practice was an art, indeed, "... that the art is true, just, reliable, perfect and a unity, in times of need a reliable indispensable art, useful for all the ill, and helpful for them to become healthy."\textsuperscript{17} The following examples show that despite this decision, the nature of medicine kept occupying his thinking. On the one hand, Paracelsus thought that physicians were not able to provide adequate treatment, because they lacked the knowledge required, or the risk of treatment involved was too high, or a medical cure did not exist. On the other hand, dishonest


\textsuperscript{16} This paragraph reads in the original German as follows: "Hab aber so ganz gründlich nicht mögen erfahren, gewiß zu sein, es sei in was Krankheit es wöll. Hab ihm viel nachgedacht, daß die Arznei ein ungewisse Kunst sei, die nicht gebührlich sei zu gebrauchen, nicht billig mit Glück zu treffen, einen gesund macht, zehn dagegen verderbt. Das mir ein Ursach geben hat, es sei ein Betrügnis von Geistem, den Menschen also zu verführen und gering zu machen." Paracelsus, 1944, \textit{op. cit.}, (10:19).

\textsuperscript{17} The original German quote reads as follows: "... die Kunst wahrhaftig, gerecht, gewiß, vollkommen und ganz wär, in Nöten eine bewährte nothafe Kunst, allen Kranken nützlich und behilflich zu ihrer Gesundheit." Paracelsus, 1944, \textit{op. cit.}, (10:19).
doctors could take advantage of the uncertain nature of medicine, because patients could not control them.

Paracelsus wondered how patients could tell whether a treatment was good or bad, if even physicians did not know the effect of a treatment with certainty. This was aggravated by the fact that some illnesses would disappear after a while without treatment and others despite of the wrong treatment. Moreover, the effects of medical cures varied among different patients. In this situation, patients could not control physicians' behavior. Therefore, doctors were able to become rich, while oftentimes providing bad treatment. A lack of patients' control, resulting from the nature of medicine, opened the opportunity to fraud for deceitful physicians and, so Paracelsus, the medical profession was therefore not honored more highly.

Paracelsus despised of book knowledge, because he felt that the books did not teach about the risks involved in treatment. As will be shown later in this section, Paracelsus wanted to lower the risk of treatment by learning more about cures and illnesses at different locations and from various health care providers. He thought that book knowledge opened another opportunity to physicians' fraud and this he considered foolishness. He accused the well-established physicians, who relied on book knowledge, of not primarily being interested in providing good medical care, but in gaining a high status and income.

Such foolishness I have also found in the writings of all the old. And this despite the fact that at the courts, in the large cities, at the rich - who had been willing to pay so much (!) and yet have not been able to be helped by any of the physicians - I am talking about the well-dressed physicians wearing silk, golden rings, etc., not the unimportant ones, but those with pomp and kind words.\(^{18}\)

Those physicians took advantage of the fact that the rich patients in the cities and at the courts who are in poor health are not able to conduct their daily business as usual. They have much more to lose than any of the poor patients. Consequently, they are willing and also able to pay a higher sum in order to gain their health back than the poor.

Paracelsus observed many different ways of dishonesty and fraud among physicians which damaged the reputation of medicine. He noted that some physicians were able to increase their income by not admitting that the chance of healing was very small. They made the patients believe that they would get better with continued medical treatment. While those physicians were eager to take their patients'...
payments, they did not provide adequate treatment in return. Paracelsus scorned those physicians, who for monetary reasons concentrated on the diagnosis and forgot treatment and all limitations of life. He also described physicians who abandoned patients, because they could not help them any longer, or because a patient was no longer able to pay for treatment.

Some of his colleagues applied bad and ineffective cures. As a physician, Paracelsus was better able to recognize such bad and ineffective cures than the patients. His fellow physicians, however, did not appreciate that kind of control. They criticized the alternative treatment Paracelsus provided; in other cases they copied his procedures or stole his medicine. Paracelsus reported the following case: when his family doctor was not able to help a patient, Paracelsus, who happened to be in the vicinity, was called in. He was promised a generous honorarium, reimbursement for his travel expenses, as well as free room and board. Paracelsus accepted the offer and performed a chiropractic treatment in order to help the patient. While he performed the treatment, the other doctor looked on, partially learning the treatment. Later, his room was broken into and his medicine was stolen. He did not get paid, neither for his travel expenses, nor did he get the honorarium that was promised to him. Paracelsus considered those physicians as fools, whom he fought fiercely, and concentrated on the patients who did appreciate his cures.

The sick liked me. I wrote this letter, because I do not want to insult any of the honest physicians by my bad-tempered writing. I hope to live with them in peace and to get their praise. The other fools I do not honor. Their scolding is my praise, it is to my benefit, and it fills my purse. For I know so many of those evildoers that among thousand physicians, there will not be a single one, who will say: thank you, Theophraste, but you are a fool!

The war between us has been going on for so long. They forced me to leave Lithuania, thereafter Prussia, thereafter Poland, this was not enough. Neither did the Dutch like me, nor the universities, nor the Jews, nor the monks. But thank God: the sick liked me.

Paracelsus was forced by his enemies to leave the country, university, or monastery.

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19 In his theological and philosophical contributions, Paracelsus addressed the question of the limitations of life; he even foresaw the possibility of genetic modifications. Compare Johannes Hanel, 1995, *op. cit.*, p. 4.

They tried to exclude him on the basis of admission regulations and accused him of not being a physician. Paracelsus responded by citing his battlefield experience.\footnote{In treating the wounded at the battlefield, it was important to prevent the outbreak of an epidemic. Paracelsus' cures were not only directed towards healing single wounded soldiers, but towards prevention of infection. In the case of infectious diseases, he tried to reduce the danger of infection. At times, however, it seems that Paracelsus was more concerned with the development of social medicine than with individually effective treatment. An example is his treatment of syphilis with quicksilver. Much later it became obvious that treatment with quicksilver was perhaps not the best method of helping the individual patient, but it prevented the disease from spreading. Decades later, the heat therapy was replaced by a method that was based on the former heat therapy Paracelsus had rejected. For individual treatment, the heat therapy turned out to be the better method. Gundolf Keil. 1995. "Paracelsus und die neuen Krankheiten." Editor: Zimmermann, Volker. \textit{Paracelsus. Das Werk - Die Rezeption}. (Paracelsus. Work and Reception). Stuttgart: Franz Steiner Verlag, pp. 17-46, p. 44.}

According to your judgment, I am a surgeon, not a physician. How do you arrive at such a judgment? This is despite the fact that I have evidently healed eighteen princes - who had been abandoned by you - and you have not even acknowledged this. And also despite the fact that I have treated and healed large numbers of the feverish, for about forty different illnesses that had been found, in the Low Lands, Romania, Naples, and in the wars of Venice, Denmark, and the Netherlands.\footnote{The original German quote reads as follows: "Ich soll nach eurem Urteil ein Chirurgus sein und kein Physikus. Womit wöllet ihr das beurteilen, dieweil ich doch offenbarlich 18 Fürsten - durch euch verlassen - in Physica aufgebracht hab; ohne Ruhm zu schreiben. Die weil ich auch im Niderland, in der Romanei, in Neapolis, in Venedischen, Denemarkischen und Niderlendischen Kriegen so treffliche Summa der Fiebrigen aufbracht und ob den 40erlei Leibkrankheiten, so in denselben funden worden, in Gesundheit aufgericht." Paracelsus. 1944, \textit{op. cit.}, (7:374).}

Facing hostility around him and inspired by a high sense of responsibility for God and towards his fellow men, Paracelsus' strategy was to extend and deepen his medical knowledge, thereby improving medical cures, and to apply his knowledge widely. He noted that the success of a medical cure also depended on the persons close to the patient. In order to succeed in healing a patient, the patient's family and friends have to be supportive. It depends on their intentions and behavior, whether a physician will be able to help a patient. According to Paracelsus, any treatment remains ineffective, if the family or friends do not want a recovery of the patient. In that case, the best medicine "gets spilled, the patient dies, the recipients of a bequest become lucky, the physician gets insulted, and the art of medicine dishonored."\footnote{The original German quote from a footnote by Paracelsus reads as follows: "...}
As has been mentioned above, Paracelsus did not find reliable medical knowledge in the books. Therefore, he decided to gather the knowledge of effective cures through extended wanderings, by using "his eyes as his professors." He visited various practitioners of health care, such as barbers, midwives, etc., and investigated home remedies in order to develop reliable alternative cures. This was not without personal hardships and sacrifices. Paracelsus noted: "Thus I wandered through the countries and led a vagrant life - alone, and foreign, and different."\(^{24}\)

Paracelsus wanted to improve the knowledge of medical practice and treatments, thereby making cures more reliable. He insisted that the only way of gaining the experience needed was to wander through the different countries with their varying conditions of climate and geography. Only then, sufficient comparison between medical cures could be achieved.

Thus I have studied at the Universities for many years, in Germany, in Italy, in France, in search for the nature of the medical art. I did not want to rely on the same teachers and to base my knowledge on their writings and books only, but wandered further to Granada, to Lisbon through Spain, through England, through the Mark Brandenburg, through Prussia, through Lithuania, through Poland, Hungary, Walachia, Transylvania, Croatia, the Wendian Mark, also other countries, not necessarily to be mentioned here. And in all the places and locations I inquired busily and diligently, did research in order to find the art of medical practice that was surely working and really experienced. I got this knowledge not only from the doctors, but also from barbers, bath keepers, learned physicians, women, from witches, as far as they have concerned themselves with caring, from alchemists, I went to the monasteries, to the noble and common people, to the bright and to the simple-minded.\(^{25}\)

\(^{24}\) The German quote reads as follows: "Also bin ich gewandlet durch die Länder und ein Peregrinus gewest meine Zeit - allein und fremd und anders." Johannes Hanel, 1995, op. cit., p. 9, note 13.

Paracelsus wandered through Europe, but limited the application of his medical knowledge to this continent. He considered it not to be useful to go to Africa and America. He believed that the cures had to be found in the immediate vicinity of the disease. One had to adapt therapies to individual needs. According to Paracelsus, climate and other environmental conditions would influence the course of a disease. (Hanel, *op.cit.*, p.10.)

Paracelsus often developed medicine himself in order to adapt it to an individual patient and his immediate environment. If the effective ingredient was cheap to produce, this easily caused a problem with pharmacists, who did not want to sell Paracelsus' medications as fees and consequently their incomes would obviously depend on the materials provided. In order to make it more expensive, he sometimes added precious ingredients such as ground pearls or spices to medicine that would not be damaging to the patient. He did this only in the case of rich patients. Poor patients just got the basic formula which he prepared himself, so he did not have to send them to the apothecary.

In a letter of complaint to the council of the city of Basel, where he was the city physician and at the same time had the position of a professor, Paracelsus demanded stronger controls of apothecaries. He asked for professional visitations of apothecaries, demanded an oath of pharmacists, and wanted a city physician to control patients' recipes. He further demanded independency between pharmacists and physicians and an evaluation of a pharmacist's experience and knowledge. He recognized that this letter of complaint could have adverse consequences for him, as well as for his patients. The pharmacists' guild was the driving force behind the city's decision that Paracelsus had to leave town.

Another monopoly criticized by Paracelsus was that of the influential Fuggers, who at one point in time funded his research in their mines. The first medical work by Paracelsus that was published during his lifetime was "On the thorough Healing Power of the Wood Guajak," 1529. He criticized the use of the wood that was imported around 1514 from South America to Europe and sold by the Fuggers for healing syphilis. An incidence is reported, where Paracelsus accused the Fuggers of selling an ineffective and expensive cure against syphilis. "... Their wood ... had no other effect than that it added to their own benefit, while they knew that in their own country houses and alleys were full of the ill, whose illness has been made worse by...

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the wood."27 The Fuggers established large trade monopolies; their business encompassed the trade in basic ingredients of medicine. Measures against the monopolies of large trade houses had been decided by the Imperial Diet, but remained ineffective, because the emperor depended on the Fuggers' money in order to finance the budget. (Hanel, op. cit., p. 60.)

Paracelsus thought that monopolies could be prevented by a supreme government. He wanted the Emperor to keep the power to himself. The Emperor should be inspired by God and act only according to God's will. Then, clergy, nobility, and traders could not acquire and misuse power. Trade houses could not, with the help of courts and governments, establish monopolies and charge high prices. (Hanel, op. cit., p. 68.)

Another concern by Paracelsus was the question of the honorarium of the physician. His thought sometimes overlaps with what has been discussed above because of the physician's position as a local monopolist. Paracelsus noted that the services of a good physician are of immense value, but that it can be extremely difficult to collect the payment once the patient has recovered. As soon as patients get better, they would only want to pay a small amount and some even tried to avoid payment.

They cheated by not paying the physician's honorarium. It is the manner of the patients that they try to deceive the physician. If one of them is healed, then he does not want to pay anymore. But not only the patients, also at court one judges about a physician's honorarium as if he would "make shoes," despite the fact that one faces the risk for ones own life. If a treatment is not successful, then one wants to pay nothing at all; if it is successful, then the patients hide so that they do not see the doctor any more; this is worse than the devil. They like him if he charges nothing. But they start to scold and shame him if his services are not for free. No money is just earned und given less willingly than the doctor's fee (honorarium). Money is given willingly for playing games, prostitution, and drinking. But people are reluctant to pay in the case that they are helped with a bodily need; all sick people are of the same opinion.28

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27 The German quote reads as follows: "Vom Holtz Guaiaco gründlicher heylung." The original German quote reads as follows: "... ir holtz ..., welches es doch niergendumb anders gebracht hatten, dan inen selbst zu irem nuz, und wußtent, das in seinem eignen land heuser und gassen voll kranken lagen, die das holz verderbt hatte." Johannes Hanel, 1995, op. cit., p. 104, note 185.

28 The German quote reads as follows: "Um das Arzthonorar betrogen. Der Kranken Art ist, daß sie den Arzt empfindlich bescheißen. So nun einer geneßt, so begehn sie im nüt drumb zu geben. Dann nit allein die Kranken, sondern auch am Gericht, dort urteilt man darüber, als wär es "schuhmachen", da einer muß sein Leib und Leben wagen. Mißrat es, so will man gar nichts tun; geräts wohl, so verbergen sie sich, daß sie den Arzt nimmer sehen; ist böser, als der Teufel. Schenkt ers, ists gut, wo nit, so gehts ans schelten und verachten. Kein Geld wird baß verdient und übler gegeben als dieser Lidlohn (Honorar). Spielen,
Paracelsus reported that patients did not want to pay for an unsuccessful treatment. When it was successful, some patients would hide, when it came to paying. In Basel, Paracelsus made a bad experience with a judge. When he went to court in order to get his pre-negotiated honorarium (as noted above), he was ordered to leave town. Paracelsus complained that courts did not realize the difference between a shoemaker and a physician. He argued that the physician needed a risk premium for risking his own life, while the shoemaker would not be confronted with such a risk.

Why, so asked Paracelsus, did people willingly pay for playing, prostitutes, and drinking and not for medical services? We can only speculate about the answer. Due to his wanderings, Paracelsus might not have been around long enough to build up long term relationships with patients. In a long term relationship, it would not make sense for a patient to hide, when it comes to paying. The patient would pay voluntarily, because in case of illness, he wanted to be treated again in the future. As Paracelsus moved around so often, he could not build up trust in a long term relationship, but had to rely on a short run input evaluation.

Paracelsus observation that patients only want to make a small payment or no payment at all upon recovery refers to the subjective evaluation of health lost, health gained back, and death avoided, which can be explained in a human capital framework. One could expect that no amount of money could compensate a person for dying if it is assumed that the person 1) derives a positive utility from living, 2) does not have a very strong bequest motive, and 3) does not want to give up life in order to fulfill a particular mission for society. That person should be willing to spend all of her or his resources in order to avoid death, because the value of life is infinite to her or him. In the case of immediate death, those resources have lost all value, since the person cannot use them anymore. This means that the resources have no opportunity costs. Therefore, the subjective cost of spending all money is zero to the person, who wants to avoid immediate death. Similarly, in the case of a severe illness, the opportunity costs of resources can be expected to be relatively low.29

In the extreme case of death avoided, the subjective evaluation of life is very high, but the patients’ subjective evaluation changes when their health improves. With better health they have gained a more promising future, which makes their resources more valuable. Opportunity costs of resources are no longer zero or very low as in the case of immediate death. Due to the recovery, patients face much higher opportunity costs of resources. Consequently, recovered patients might try to reduce or even avoid the payment that they were originally willing to make. Paracelsus has


observed this phenomenon, but without providing the explanation that can be obtained in a human capital framework. He offered two main causes as an alternative explanation why a physician, in his own words, is "not honored more," in other words, not considered worth the "honorarium" or payment.

Paracelsus' first explanation referred to what is called today an asymmetry in information on the side of the patients. He had observed the paradox that patients, who are very ill, have a high willingness to pay, but if they become healthy, their willingness to pay is low. Therefore, he concluded that patients cannot evaluate the services of a good doctor. He argued that patients do not know how much effort and scholarship is involved by a physician, who wants to arrive at a good therapy. In his own case, the effort consisted in his wanderings, through which he gained empirical evidence and arrived at effective therapies; and because of this asymmetry in information, Paracelsus proposed to charge the patients according to their income or wealth.

His second explanation of the paradox that patients wanted to pay less upon recovery than before concerned the risk involved in treatment and the possibilities of fraud this offered to a deceitful doctor. Paracelsus thought that the physician was not honored more by the recovered patients, and consequently his treatment not thought to be worth the payment, because of the risk involved in treatment. Due to the unreliability of medical knowledge, the risk of treatment was very high at the time. Paracelsus described some "fools," fellow physicians, who for reasons of self-interest would even aggravate the risk of treatment. He considered their behavior as despicable.

Paracelsus demanded that one should help the poor by sharing available means; they should not be treated as beggars, but as honorable people. In his payment practice, Paracelsus treated poor patients for free. He wanted people to make voluntary charitable contributions in order to finance the provision of health care to the poor. (Hanel, op. cit., p. 7.) His own testament is an example for this practice. After his death, he wanted most of his wealth to be distributed among the poor.

During his lifetime, Paracelsus' books got censured and he thought it was because he demanded to provide health care to the poor for free. After the censorship of Nuremberg prohibited publishing his works, he could for a long time not find print houses and publishers for his writings. (Paracelsus, 1944, op. cit., p. 64.) He sold his writings through markets, where they oftentimes got plagiarized. He therefore wanted an author's copyright.

Paracelsus input-based explanation of the physician's fee is not incompatible with an

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alternative, the explanation according to the opportunity cost principle. He treated people according to the opportunity cost principle. Let us assume that he could only ask for payment, if the treatment was successful. Then, he set the price according to how important recovery was to the patient. The richer a patient, the higher his opportunity costs of illness could be expected to be, because he was not able to look after his daily business. This principle is consistent with Paracelsus ethical approach. Those patients, who could not afford payment, do not lose much by being ill. Therefore, their opportunity cost of illness, in monetary terms, can be assumed to be zero. This is consistent with no payment at all. On the other hand, by treating the poor, Paracelsus himself gained additional experience and knowledge, thereby making treatments more reliable. Not charging the poor caused problems with some local doctors and the more affluent patients. For instance, they forced Paracelsus to leave Salzburg, when he helped peasants, who could not afford a physician. (Hanel, op. cit., p. 5.)

In this section, we have seen that more than 500 years ago, Paracelsus has made important contributions to economic issues of health. Next to his thoughts about the honorarium, he showed that not only the medical practice is relevant for the performance of medicine, but also the way how the provision of health care is organized. Paracelsus has shown that monopolies in health care can have negative consequences. For instance, he fought against the practices of pharmacies who charged patients prices higher than necessary for a medicine prescribed. He criticized powerful local physicians, who would concentrate on the diagnosis and not try to gain additional knowledge in order to improve the quality of health care provided. He criticized the Fuggers for excluding effective therapies. They had formed a monopoly through which they provided only particular ingredients for medical uses. He suffered from censorship of his writings; and he criticized the language monopoly. By lecturing in German, he made it possible for those students to study medicine, who did not know the Latin language.

### 2.3 Monopolies in Health Care

Paracelsus criticized the exclusion of therapies and talents by the organization of health care provision. Similar effects of monopolies in health care can also be seen in more modern examples.\(^{32}\) The consequences of monopolization in health care services will typically take the form of restricting supply in order to increase physicians' fees. This was shown empirically by Reuben Kessel for specific chapters of the American Medical Association (AMA) and their overall, i. e. national approach of licensing medical schools.\(^{33}\) Only licensed schools according to their standard

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could graduate physical doctors.

The analysis of the organization of the AMA by Kessel is an example of rent-seeking. \textsuperscript{34} Rents are defined as “a return in excess of a resource owner’s opportunity costs.” \textsuperscript{35} Rents can either arise in the price system, and then, they are equivalent to profit seeking, or rents can be contrived artificially through regulatory government actions transferring wealth from one group to another. If there is competition for these artificially contrived rents, then the process of using resources to contrive the rents is referred to as rent-seeking. Resources used in the competitive process to win a transfer are wasted from a society’s point of view. Rent-seeking refers to this wasteful process. It does not lead to productive gains. On the normative side, rent-seeking theory specifies and estimates the costs of rent-seeking behavior to the economy. Positive rent-seeking theory as applied in the analysis by Kessel addresses the question of why contrived rents exist in the economy, or more specifically, in certain sectors of the economy such as the health care sector, and not in others.

In the United States, physicians can only be licensed if they have graduated from an accredited medical school. The accrediting authority is the AMA, a private institution. If accreditation is withheld, fewer students will be trained and therefore, the supply of physicians will be curtailed. With the help of governmental powers, the AMA restrained the output of physicians. Kessel showed empirically that the practice of admission with respect to accreditation of medical schools led to an artificial shortage of physicians. This made it possible for physicians to demand above average fees. Instrumental to the reduction of the number of physicians was the Flexner report of 1910. On request of the AMA, the influential Carnegie Foundation commissioned Abraham Flexner to evaluate proprietary medical schools. (Kessel, \textit{op. cit.}, p. 38.) Flexner discredited many medical schools. This did not occur on the basis of quality considerations. The criterion rather was whether the medical training program of a particular school was similar to that of Johns Hopkins University. Graduates from discredited schools were not allowed to participate in the state licensure examinations. Therefore, many of the discredited medical schools were forced to close. As a consequence, the number of physicians declined.

At the remaining universities, it became more expensive for students to acquire the degree of “Medical Doctor.” The higher costs for students made it more difficult for minorities to become physicians. In particular to black students the requirement of internship in a hospital posed a barrier, because they often were not hired for reasons of discrimination. Kessel noted a sharp decline in the number of black doctors and the closure of many black medical schools. Another result of the implementation of Flexner’s report was that the medical training of students exhibited

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relatively little variation from school to school. This training pattern of medical students was frequently written into state laws. (Kessel, op. cit., p. 39.)

Kessel noted that most of Flexner’s work had been done by the AMA before, but that they had hidden their self-interest by implying the influential Carnegie Foundation. There was evidence of discrimination: the higher standards of quality did not apply to the majority of practitioners already in existence; there were no re-examination requirements for doctors; appointment decisions in hospitals were not simply made on the basis of quality; and there was great internal solidarity and cohesion within the medical profession, which made it unlikely that one doctor would testify against another one. (Kessel, op. cit., pp. 44, 45.)

The example of the AMA shows that organized medicine used the power of government by successfully lobbying for a system of state licensing, which allowed setting up a practice only to physicians from accredited school. Moreover, the AMA used litigation by bringing suit against some practitioners who lacked the required education. Before the Flexner report was issued, medical educators could license their own graduates. The introduction of state licensing allowed a reduction in the number of physicians in order to increase the fees of individual physicians. State laws fixing the training pattern of medical students are evidence for rent-seeking as well. The effects were a less diversified student body and the exclusion of certain therapies. It took until the 1960s before the policy changed. The number of electives open to students increased and the costs to become a medical doctor decreased, but Kessel noted that the number of physicians trained was still not allowed to increase significantly. (Kessel, op. cit., p. 46.)

The AMA systematically excluded other therapies such as homeopathy, osteopathy, and chiropractic treatment. While homeopaths were important competitors to American physicians in the mid nineteenth century, they virtually disappeared during the first decade of the twentieth century. The medicine used and prescribed by homeopaths became subject to regulation. Regulation of ethical drugs (i.e. drugs that require prescription) is part of the mission of the American Food and Drug Administration. With the help of pure food and drug legislation, organized physicians were able to suppress competition from unpatented medicine vendors.

Chiropractic treatment survived the attacks of the AMA by forming its own Association and organizing a counter lobby exposing the restrictive practices of the AMA. Chiropractors cited boycotts of newspapers containing advertisements of alternative medicine by the AMA as well as a strong increase of press releases written by organized physicians. They protested against the use of the Latin language: “By requiring collegiate training before medical school and the use of Latin prescriptions, the AMA had erected artificial barriers designed to elevate the physician and intimidate the patient.” (Martin, op. cit., p. 166). Chiropractors cited the requirement of Latin for physicians as an additional barrier of entry posed by

the AMA. Five hundred years earlier, Paracelsus fought against the knowledge of Latin as an entry requirement for physicians. The victory for the chiropractors came in 1987 with the defeat of the AMA in a major lawsuit.37

Graphically, the rent-seeking situation can be depicted as follows:

![Graph of rent-seeking in a monopoly](image)

In the diagram, \( q \) represents the total supply of physicians and \( p \) stands for the price of medical services; \( p^* \) is the price for medical services, which would prevail in a market where physicians have to compete for patients. Suppose the market for medical services is characterized by a downward sloping and linear demand curve. The AMA artificially restricted the number of physicians from \( q^* \) to \( q^m \). The number of physicians, \( q^m \), is smaller than that of a competitive market, \( q^* \), and the price charged, \( p^m \), is higher than that at the competitive market, \( p^* \). The rent to be captured and/or dissipated by the costs of rent-seeking consists of monopoly revenue minus revenue if no monopoly is present. It amounts to the price difference \( (p^m - p^*) \) multiplied with the restricted number of physicians/quantity of services \( (q^m) \), \( p^mNp^* \).

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The Harberger triangle MNC describes the welfare loss to society, when moving from a competitive situation to a monopoly, but the welfare loss to society from monopoly is much bigger than depicted by the Harberger triangle. Tullock denoted the rectangle $p^*MNP$ as the potential rent to the monopolist, which is used up as costs of rent-seeking.

The rectangle $p^*MNP$ denotes the potential for waste to society, if monopolists spent resources to capture the rent. Harberger’s analysis is in a static context, whereas Tullock refers to a dynamic process. With the theory of rent-seeking he developed an instrument to analyze this dynamic process. When moving from a competitive industry to a monopoly, then we can assume constancy of the cost curve only in the first step; beyond, the cost curves will change.

Once a monopoly has been established, the external pressure to keep costs low is weakened and X-inefficiency may and probably will creep in. This can also be considered as a type of rent dissipation. Further insights on the dynamics of monopoly creation can be gained from Schumpeter.

The AMA caused the decline of the number of physicians, which allowed an increase in physicians’ incomes. The AMA also pursued the exclusion of certain therapies by practitioners other than physicians; and it restrained the diversity of students trained as physicians. We can speak of a case of rent-seeking, because the organized physicians took advantage of the help of government and of the legal system. In the case of the AMA, the gains of rent-seeking consisted in the fee-revenue enjoyed by physicians in excess of the market clearing fees. The losses to society, represented by the dead-weight loss MNC, consisted in these extra fees, including the cost of that slack which a monopoly structure brings about, as well as in the reduction of the level of care, both quantity and quality, and in the non-availability of certain therapies.

Under normal conditions of rent-seeking, Tullock’s rectangle is a sheer waste to society; the case discussed, a reduction in the supply of physicians, can hardly qualify as a cost-containment measure. The theory of rent-seeking also contains a different case, however. It is possible to use Tullock’s rectangle as a prize in order to

38 Instead of using the term “profit,” Tullock used the term “rent” to describe the return to the monopoly. By creating a sphere of exclusivity, the factor over which exclusive use has been defined becomes the subject of a monopoly. By implication, the owner of this artificially scarce factor enjoys the monopolist’s rent. The rent can be turned into a pure monopoly profit or else be used for other purposes. In the case of the AMA, a side effect was the introduction of “professional medical practices” at the expense of the traditional medical practices, partly owed to the Indians. Compare Robert D. Tollison, op. cit., p. 579.

stimulate a desired outcome. In that case, the rectangle is not a societal waste. It could therefore be possible to design cost-containment measures in terms of a rent-seeking game by giving the rectangle in the form of a prize for better treatments achieved at lower costs. Patents for drugs are the standard example of such a rent-seeking arrangement in society's interest.\textsuperscript{40}

Paracelsus' oftentimes idiosyncratic musings are by no means as far fetched as they have been depicted in the literature over the last several centuries. Without stepping into the details of specific member states of the European Union, the following set of constellations can readily be found. They all illustrate Paracelsus' concerns in simple microeconomic terms. We have seen that professional groups can exploit the legal system and form a monopoly. This leads to volume restrictions and a higher price. Next to such examples of market failure we also observe government failure in health care. In a nationalized health care system, or in a highly regulated health care system, the state itself can act as a monopsony and appropriate the monopsony rent. Health care fees are kept low and volume of health care services provided is restricted. Neither health care providers, nor patients can easily circumvent government controls. Under these conditions, waiting lines are likely to result. As Buchanan and Tullock have variously pointed out, market failure cannot be construed as a cause for government to intervene. One first has to show that governments can perform better than the market.

2.4 Summary and Conclusions

Why it is useful to dig out an author who has written some five hundred years ago? After five hundred years have passed, Paracelsus offers such a fascination that his social-economic work is still being edited. He identified the structure of the medical profession not only in relationship to the nature of medicine, but also in relationship to local circumstances, such as city regulations, regulations by guilts or requirements by universities. His examples of the honorarium of the physician, as well as early forms of crime and misconduct by medical doctors and pharmacists highlight the tension between the practice of medicine as a profession and as a business. His approach is holistic. In particular, he tried to integrate pharmacology and medical science, but in a broader context is is also seeking the integration with what today are the social sciences.

Paracelsus' put the medical science on an empirical footing. He overcame Aristotelian medicine and showed that the functioning of bodies relies on a chemical basis. An example is his early research on miners' diseases where he looked at the environment as a factor causing illness. Through his research in the mines of the

Fuggers, Paracelsus laid the basis for pharmaceutical chemistry. In his holistic approach, he went beyond pharmacy and tried to integrate physical, chemical, and economic variables.

Paracelsus' holistic approach to health had an impact on Goethe and C. G. Jung. It found application in the treatment of certain mental illnesses, for instance by the concept of an out-patient treatment for drug addicts (Blum). Holistic medicine seeks to make the patients participants in their own cure. They become agents, who share responsibilities with the health professional. This takes off part of the pressure of the health care professional. The patients monitor the variables in their conditions and will be guided to make changes in their behavior and environment that facilitate healing. Comparisons by health economists of in-patient and out-patient programs show that for some mental illnesses out-patient programs tend to be less costly and more successful than in-patient programs.

The immediate environment of the patient mattered to Paracelsus. He adjusted therapies to individual needs and tried to find the effective ingredient for medicine in a patient’s immediate environment. If the medicine was inexpensive, this caused problems with apothecaries, because pharmacists did not want to sell his medicine. As has been shown in the chapter, Paracelsus recognized the problem as one of organization and demanded controls and the abolishment of monopolistic structures.

The question of honorarium received Paracelsus’ attention on several occasions. He thought that no one could pay a physician the true value for what a treatment was actually worth. This thought is expressed by the term “honorarium,” because more is at stake than an exchange of money for certain services; the physician is honored for his work; the value of his services is recognized. However, a dilemma occurred when patients, who recovered, did not want to pay much or did not want to pay at all. Paracelsus explained this dilemma with two major reasons.

On the one hand, he thought that the honorarium should reimburse the physician for his scholarship and his efforts required to arrive at effective cures. The patients could not really know how much effort was needed to become proficient. Paracelsus improved the quality of health care provision by advancing the knowledge of medical art and practices, as well as by pointing out deceitful practices. Instead of book knowledge, he concentrated on other typically not documented sources such as barbers' experience, healers' practices, and midwives' knowledge. Therefore, Paracelsus charged the patients according to income and wealth.

On the other hand, Paracelsus thought that the medical profession was not honored more due to the uncertain nature of medicine. In his time, knowledge was not always proven, cures were unreliable or there were no cures at all, and there was a high risk of treatment. This opened the door to fraudulent behavior of deceitful doctors, who were more interested in gaining a high income and getting the status of a doctor than in helping patients. Through his wanderings, he not only found useful experience, but also many deceitful practices in the supply of health care.
It was the Fuggers, who provided Paracelsus with the means to conduct his pathbreaking research in their mines. Paracelsus criticized them for making profits by selling ineffective medicine, such as the wood Guajak, thereby excluding the more effective therapies. As has been noted above, the pharmacists, acting as a monopoly, often did not want to sell Paracelsus’ medicine, because it was too cheap and would not generate enough income. He accused the pharmacists’ guilt of Basel of exploiting the situation. Ironically, research results today show that the competitive process of large pharmaceutical industry goes through innovations. Here, a monopoly offers the security to develop and carry through an innovation. This does not take away that in a monopoly inefficiency can creep in.

How much progress have we made in five hundred years? The honorarium of the physician is still an issue that keeps health economists busy. Monopolies in health care are still present. They are justified by the presence of increasing returns, for instance in the case of highly specialized treatment, or, as we have seen in the case of the pharmaceutical industry, in order to facilitate innovations. But have we found the appropriate means to deal with the disadvantages of monopolies? The introduction of diagnosis-related groups in hospitals or pre-paid practices have increased competition in health care, but waiting lines, a decrease in health care quality, and non-availability of certain therapies can still be observed in modern, European health care systems.

From the point of view of modern health policy, Paracelsus cannot be overlooked as he overcame the deductive Aristotelian tradition in medicine and put the practice on a thorough empirical footing. This provides the basis for sensible statistical investigations that can lead to equally sensible and helpful policy solutions. The downside is even more important. Many politicians in Sub-Saharan Africa claim to see a correlation between poverty and AIDS. In their view, the therapy would be financial aid to their (perhaps corrupt) governments.41 From the point of view of Paracelsus, there is no empirically testable theory that can provide a link between poverty and the incidence of AIDS. The current discussion about the AIDS epidemic in Sub-Saharan Africa is based on the spurious notion of a correlation between poverty and AIDS. This basically Marxist reasoning is not helpful for current health policy as it neglects Paracelsus’ advice to look for the causes of a disease at its roots. Claims that the root of a particular disease lies in a socioeconomic aggregate such as poverty can have disastrous effects on both health and economic policy if they are believed. Five hundred years ago, Paracelsus tried to overcome such prescientific approaches by establishing relationships between physical, chemical, and economic variables.

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41 Governments that are not controlled by a court of audit.
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