#### PROFESSOR PHD. VLADIMIR FLUTURE

Permanent Member of the Academy for Medical Sciences from Romania

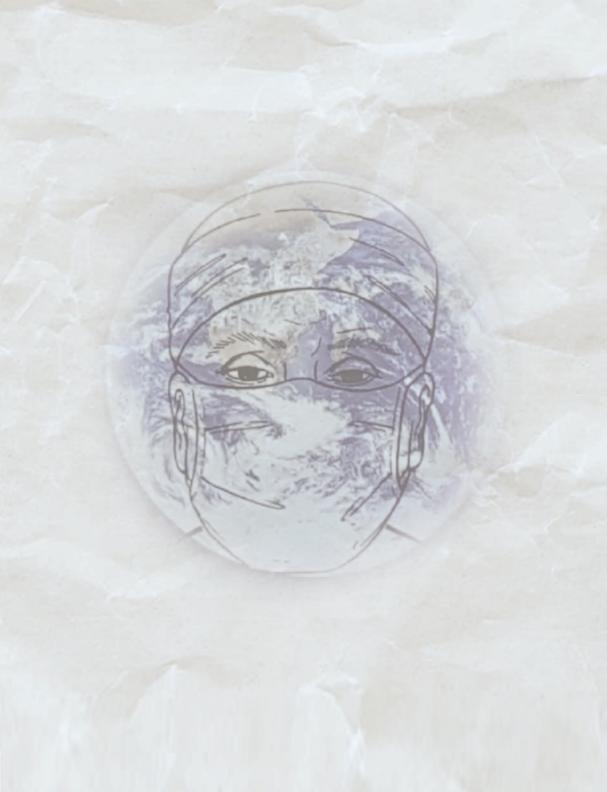


# THE PATH FROM THE SURGICAL DREAM TO THE PERFECT OPERATION

**CONCEPTS OF SURGERY** 









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Victor Babeş Publishing House Timişoara 2020



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The translated version of the book CALEA DE LA VISUL CHIRURGICAL LA OPERAȚIA DESĂVÂRȘITĂ - CONCEPT. ÎNDREPTAR - ISBN 978-606-786-164-8. English variant by Patricia-Dorli Dumescu

ISBN 978-606-786-132-7



At the crossroad of personal beliefs and possibilities lies the time of the conceptual meditation

#### **MINUTE**

The essence of surgery is the OPERATION. *The* craft during the operation is the main duty of the surgeon. This can be accomplished by passion and utter dedication and by a way of living in accordance to material and spiritual principles. It can be a youth's dream, a start in the professional life.

Those who dream to LIVE THE IDEAL OF SURGERY UNTIL THE PERFECT OPERATION – medicine students, resident physicians, young surgeons who are still in the process of learning, as well as surgeons who intend to achieve perfection in their field of work (after they have correctly and properly informed themselves about this profession) – are waiting for the answer to the justified question: WHICH IS THE PATH TO FOLLOW?

The concept according to which THE TALENT IS BEING ASSOCIATED WITH TECHNICAL AND BIOLOGICAL INTRAOPERATIVE THINKING - a concept which shapes mentality and the only practical possibility of performing the perfect operation and of being *the* creator – is the result of the obsessive experience in 50 uninterrupted years of practice (20 years from this period have also involved the task of running a surgery school in an emergency clinic belonging to the Medical and Pharmaceutical Institute in Timiṣoara). After you

have covered so many fields of interest, you do learn something. And you write in the hope that someday it will be useful!

The person who wants to follow the PATH of craftmanship and of creation will find in this concept book the rules of a rational mentality. At the same time, it is not only a book about main concepts and ideas, but also about "what does it imply" and "how is it done?".

This is the book of nights spent in the emergency room, of professional decisions or of moments of personal evaluation caused by difficult cases – those moments when doubts arise; but also of endless professional and moral questions. It is a book of present and future ideals, of those who dedicate themselves utterly in order to perform the ultimate operation, and who always succed in solving the 'impossible'. The expectations are indeed extremely high!

The surgery can be "SCIENCE AND ART", but "THE POWER TO THINK" of the surgeon is always the essence of the surgical act itself, for all the ways in which he operates. And it will always be like this!

THE AUTHOR, JANUARY 2020.

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#### **Chapter One. THE LIFE OF A SURGEON**

The surgeon is in life "a long distance runner", who has to manage his constant effort in order to be able to face long distances, and who also has to carefully select the moments of full effort (made only when necessary). The objectives of the professional life which need to be respected in order to achieve a good surgery, but also high performace in the operating theatre, are endless.

The way in which one finds his motivation, lives and takes decisions is very important in the life of the surgeon.

A real life, carefully but also critically judged, "with the mind of the later days to come" - those which will come long after finishing one's professional career - can be sufficiently convincing in order to portray ideals and obligations for the present days, with thoughts about the future; for those who start in this career, who dedicate themselves to this profession, and who are eager to have a clear concept about the path to perfection in their surgical activity.

In the years of my youth, my father – a doctor himself with a three years experience on the battle-front in World War II - heard about my intention of becoming a doctor, and gave me the following advice: "Son, you know that medicine is not for the money you will gain; it is for helping people in distress". My dream, and the guidance of my father, Dr. Fluture, who was an example for me to follow, have shaped my entire life. A lot of obligations to fulfil and decisions to make, have followed ever since:

To force yourself, to renounce the pleasures you can encounter at the beginning of life, in order to dedicate yourself to the pretentious admission examination

To decide that from the many and interesting medical specialities, you want to choose surgery because of the good you can bring to people who suffer; this is an obvious result, which can quickly be seen

To evaluate if the personal skills correspond to the surgical requirements, based on certain criteria (to believe that you possess a certain manual ability), because you have practiced for several years at a musical instrument

To start as early as possible, in the first years of faculty, to take part at night shifts in an emergency hospital, in order to listen to the discussions and opinions of people with years of professional experience; but also to assist to as many diagnoses and operations as possible

To perform the first operation – an appendectomy - while you are still studying (due to the succes of being admitted to the internship examinations, which gave you the possibility to work in the surgical sections), while also following the university courses and final examinations

To pay attention to the fundamental medical sciences in the first years of university study

To learn and treasure the foreign languages in which medical books are being written and, for the moment,

to keep the activity you already know, close to the digital era as well; to get acquainted to use (in order to learn and remember) speciality books in the form of eBooks, and all of these only in order to understand how programming works \*\*\*

To choose your master, to learn from him the practical and theoretical knowledge you need during the general emergency surgery, recognizing that the emergency lies at the very core of surgery

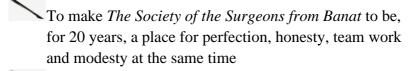
To also choose, as an overspecialization, the reconstructive arterial surgery, a domain in full evolution, and at the same time to make it possible to approach all surgical fields as well

To master a library, as a continuity of the one already inherited, which dates back as early as the 1900s

To set as aim something which has never been done before in surgery – extracorporeal regulated hepatectomy and heterotopic liver transplant – by using during the research the experimental surgery available at the U.M.F. Timişoara

To try to perform advanced surgery, high quality surgery and to teach classes speaking freely; to respect all the standards as a clinical advisor and as a surgical school advisor

To make it your natural obligation to have knowledge about clinics and important personalities, who have lived during your life-time (maybe some of the most important ones)



- To create, research, do something new and maybe even more than that, at your workplace
- And during this time, to start a new family (for personal balance and social stability)
  - To be permanently preoccupied by your physical shape (swimming, hiking, tennis, skiing), but at the same time to constantly protect your hands, so that you don't feel the intraoperative fatigue
- To understand and respect the principles of the material and spiritual life
- To necessarily have a hobby in your spare time (chess, music, philosophy, reading)

The surgery is a profession which requires passion, sacrifices and supreme dedication.

Is this a life which one should follow? Could you live such a pretentious life, which will condition even your spare time?

Think about it well! Verify your skills!

A fact which I have realized and verified, when it comes to the practical surgery: most of the qualities needed in order to satisfy the high demands of the practical surgery can be made perfect through a strong will and perseverence – if you are aware of them.

You can become a good surgeon if you have this as your youth's dream!

I see it as the most beautiful profession; a second time I would choose likewise, maybe even more so, knowing what I now know.

The personal motivation beyond everything which had happened can be understood as a desire to become perfect and fully accomplished in life, due to the surgical profession. The real motivation, in order to be dedicated in practicing a difficult and full of the unexpected profession, lies in the PASSION TO CREATE SOMETHING WHICH HAS NEVER BEEN DONE BEFORE AND TO DO GOOD FOR THE SUFFERING PATIENT. It is a particular point of view of the "universal concept of the intelligent existence" – a philosophical concept of divine spirituality: "the perfect mind guided by utter kindness".

Let's keep in mind a certain assertion: it is a turning point in life --- the decision to become a surgeon.

And so have passed 50 uninterrupted but simplified years of surgery, with good and bad events, a time-span in which I have understood 100 years of surgery by reading and by directly communicating with my predecessors, and also by understanding what I have communicated in earlier lectures.

#### TO MAKE OR NOT TO MAKE LIFE

CONFESSIONS – because it is not good to make public, at any cost, truths which have happened in your life, unless you have lived, or you possess things which are extremely valuable in order to be uttered; because in order to strictly

respect the truth, you can inflict harm on others or yourself, or maybe even unforgivable suffering.

Knowledge and experience are sure facts, but also firm beliefs, and when it comes to the surgical profession they are sufficient enough to be shared. Maybe they will be useful!

Let's take a contemplative conclusion at the end of the professional life. It can be interesting – it is still part of the existence of the surgeon.

I have hardly tried to make peace with my former life; I have been convinced that I have received from life more than I have deserved. But not all those who get to this point in life think in the same manner.

Maybe it will be better to finish this thought, regarding the difficult tasks in the life of a surgeon, with a generous poem written also as an end-of-life meditation, bearing in mind the thought of another life, a new life (an astral life), written by Professor Mihai Dragomirescu, Rector of the U.M.F. Timisoara between 1989 and 1992; a personality with intense feelings, great responsibilities and numerous professional obligations to fulfill. The poem is at the first public presentation, a premiere.



Video available here: https://youtu.be/LW-feS9KzR8

#### \*\*\* Digitalized surgery

Let's analyze in a few simple steps the evolution of surgery, in order to conclude the necessity of digitalization in the life of the surgeon.

The medical digitalization came late in the evolution of medicine, when compared to other fields of science. But the rising interest of the surgeons grew together with the first operations performed with the help of robots ((PUMA 560, PROBOT, ROBODOC); this is also the reason why more and more robotic systems have been developed (da Vinci, AESOP, ZEUS etc.).

The robot does not replace the surgeon, but it offers him a series of advantages: the enlarged 3D image of the operating field for a better precision; the movement of the hands on the console (with the fingertips) is more firm; and it also significantly reduces the fatigue of the surgeon.

In adition to these benefits for the medical act, which concern the surgeon, there are multiple benefits for the patients as well: small-size incisions; the pain is being diminished; the time spent in the hospital is shorter; a quicker post-operatory recovery; lower infections risks; the intraoperative hemorrhage and the need of blood transfusions – all of these present an obviously lower risk.

We can only conclude the urgent need and a continous education of the FUTURE SURGEONS, when it comes to the DIGITAL ADAPTATION to the current and future times. This education must be continous and sustainable, even from the period of the primary/ general school studies.

The view according to which "I will study medicine because I do not like mathematics" is long overrated, because a certain interdisciplinary approach is needed in every field of study. The medicine student must continously learn adjacent information, with an emphasis on informatics. Luckily enough, the curriculum comprizes subjects of study which help the student get closer to digitalization, to understanding and grasping it. The student, but also the surgeon, will need to know how to use electronic books with the help of mobile devices (phones, pads, laptops), and also to gather information from programming courses.

Thus, You, the surgeon of these times, have the responsabilty of helping educate the next generations. Pay attention, so that You create a correct and fair system which respects the medical practice. Take good care of your soul, and of the soul of your patients, but also be careful that your heart should be in the right place (i.e. of the digital surgeon of the future), because ROBOTS FUNCTION WITH THE

HEART OF A SURGEON. This is the cleanest programming of a robot - for the love of surgery!

A robot means programming (softwear) and engineering (technics).

(in parnership with Cococeanu Mădălina and Cococeanu Adrian)

## **Chapter II.** 7 POSTULATES. THE ESSENCE OF THE NOBLE PROFESSION - SURGERY

## Let's utter 7 postulates about surgery as part of the medical sciences:

- 1. The surgery is a noble profession because it does (brings) good to people who are suffering
- 2. The surgery, from all medical specialities, is the most laden one with the burden of a major responsability, due to the fact that it does good through the operatory action, which represents a deliberate aggresion on the sick organism
- 3. The surgery obeys an ultimate rule; the operation act must respect, as much as possible, the integrity of tissues and the function of the organs, while the surgeon, the one who performs it, must totally obey the 7 main principles of material life (faith, love, creation, action, thought, wisdom, family), but also all the principles of the spiritual life
- 4. The classical open convetional surgery lies at the basis of modern surgery, while the emergency surgery is the "queen" of all surgeries
- 5. The surgeon, the one who can perform the classic open surgery, is the essential entity, the centre of surgery, because he is the thinker of the creation and the master of the surgery, but also of the entire surgery. We must be careful not to lose him on our way to excessive technicalities; he must be treasured and trained. And he will be, as long as there will be surgery!
- 6. The healing of the surgical reparatory act must be as quick as possible.

7. In surgery, the fate of the patient is decided on the operation table.

These are indeed 7 postulates which need no further proof.

## **Chapter III.** THE SURGERY AND THE SURGEON

The surgery, with its multiple fields and various pathological, diagnostic and research aspects, has a special preoccupation, which is the core and the motif of its existence – its therapeutical act; and this is the **SURGERY AND THE SURGEON**.

It is a very complex realm of thought, with an extraordinary evolution especially in the last 150 years, and a foreseeable, but at the same time almost surreal, future. For those who are not familiar with this field of knowledge, we will get acquainted with the main aspects of the surgery itself: the operating theatre, with all that it implies, the ways of performing a surgery, and who exactly the operating surgeon is; facts, impressions and emotional states, all entangled in a greater picture.

The operation is the essence of surgery, the main trigger of the scientific research ideas, the crucial moment of the surgical practice. It is also an act of creation, because no surgery is like another.

The operation in itself stands for a notion, an entity, a complex process. One also needs to notice the fact that it also had an evolution, with complex modifications and continous improvement, sometimes with goals almost impossible to be reached.

Here is, in a nutshell, what an operation implies and how it has evolved. Let's try to envision its universe.

One can reach the operating theatre on two different routes, so called circuits, to the operating table:

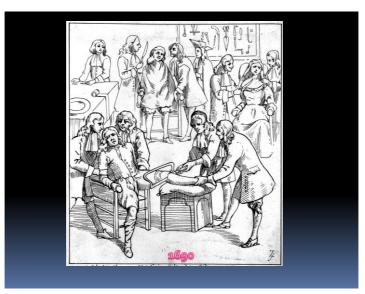
The patient, after being anaesthetized by orotrachial intubation and venous cannula, for further monitoring and perfusions

The surgical team, after undergoing the ritual of hand sterilization and dressing up with sterile equipment

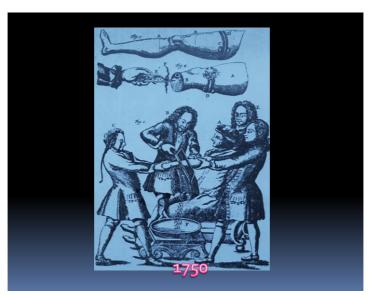
Let's take a look at the OPERATING THEATRE. An image is worth a thousand words – images render the truth more than words!



**Source:** https://www.sciencesource.com/archive/Trepanning--1525-SS2476424.html



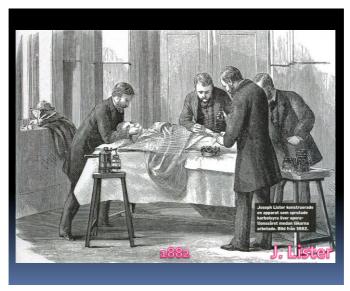
**Source:** https://wellcomecollection.org/works/guhexrwy



**Source:** https://ggcenglish0.wordpress.com/samantha-carter/



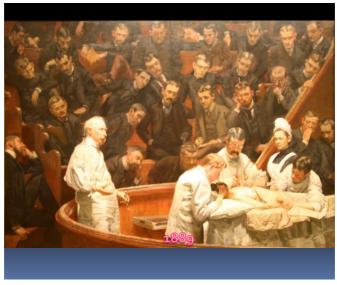
**Source:** https://www.thetimes.co.uk/article/the-butchering-art-joseph-lister-lindsey-fitzharris-review-rxg89cn59



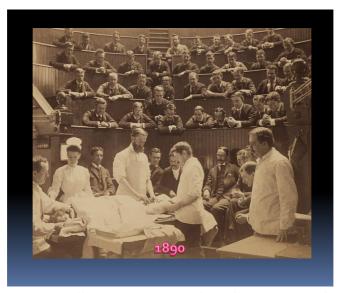
**Source:** https://www.sciencesource.com/archive/Joseph-Lister--Surgery-Using-Antiseptic-Spray--19th-Century-SS2502441.html



**Source:** https://www.theguardian.com/society/gallery/2014/jun/16/a-history-of-dentistry-in-pictures#img-7



**Source:** http://www.theagnewclinic.org/



**Source:** https://www.dailymail.co.uk/news/article-7326303/The-history-one-Londons-famous-surgeons-amputate-leg-30-seconds.html



**Source:** https://hiddencityphila.org/2015/04/the-curious-case-of-body-snatching-at-lebanon-cemetery/



**Source:** https://tspace.library.utoronto.ca/handle/1807/17663



**Source:** https://www.semanticscholar.org/paper/Emil-Theodor-Kocher%3A-the-first-Swiss-neurosurgeon-Hildebrandt-Surbeck/d2f97ba876d213c3d8fb8e884c526076afc929d0



 $\textbf{Source:} \ \, \text{https://activly.com/this-addicted-doctor-is-the-reason-many-of-our-loved-ones-are-still-alive-today/}$ 



**Source:** https://www.sciencesource.com/archive/John-Hopkins-Operating-Room--1903-04-SS2502271.html



**Source:** https://www.flickr.com/photos/74701877@N07/9712916234



 $\textbf{Source:} \ https://hiveminer.com/Tags/nurses\%2Cstmichaelshospital$ 



Personal archive



**Source:** 

https://bydgoszcz.wyborcza.pl/bydgoszcz/51,48722,21310644.html?i=2&disableRedirects=true



**Source:** https://vancouversun.com/news/local-news/liver-transplants-in-b-c-remarkable-but-risky-business



#### **Source**

 $https://i.pinimg.com/originals/3a/c2/ea/3ac2eaaab921f25c15a982a332278\\090.jpg$ 

Note: The operating theatres do not look alike, due to the surgical equipment - which depends on the timeline or on the necessity itself.

Depending on the operation to be performed, one has an extra equipment in the operating theatre, as you may have noticed, which is not permanent, and which is being used only selectively: the monitoring and intensive care equipment, quick tests, the venous pump for clipping the main vascular pedicles, a dialysis machine for the patient with renal insufficiency, and the equipment for extracorporeal circulation; the electric defibrillator for cardiac surgery, and the equipment for the thermoregulation of the patient, etc.

The **instruments** needed in order to perform an operation have drastically changed over time. **A fact worth seeing**:



**Source**: Elisabeth Bennion, 1996, "Alte medizinische Instrumente", Parkland Publishing House



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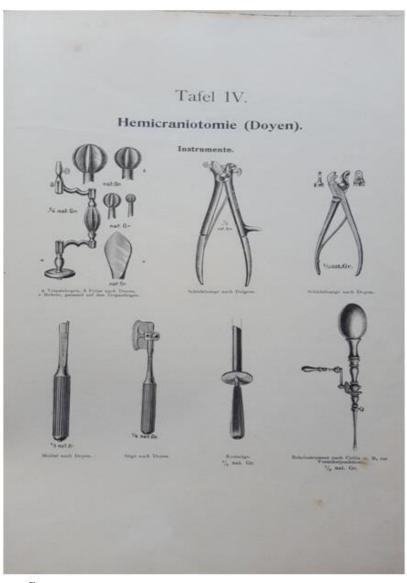
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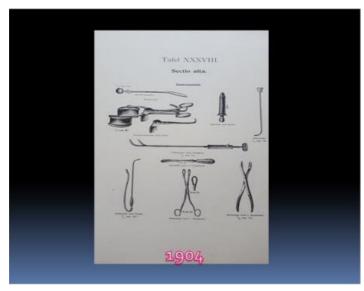
**Source**: Bockenheimer and Fritz Frohse, 1905, "Atlas typischer chirurgischer Operationen – Für Ärzte und Studierende"



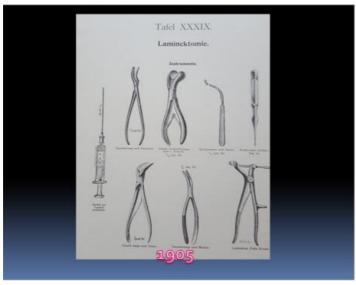
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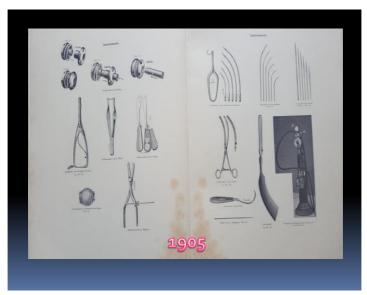
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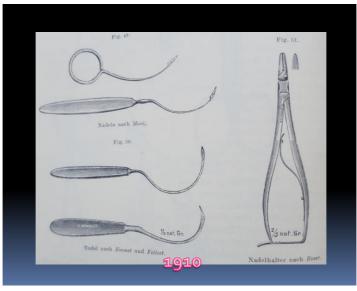
**Source**: Bockenheimer and Fritz Frohse, 1905, "Atlas typischer chirurgischer Operationen – Für Ärzte und Studierende"



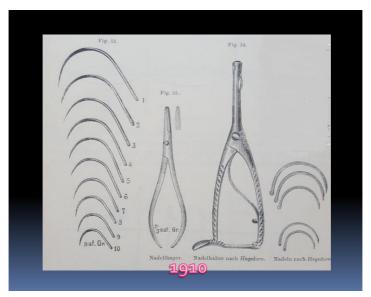
**Source**: Bockenheimer and Fritz Frohse, 1905, "Atlas typischer chirurgischer Operationen – Für Ärzte und Studierende"



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**Source**: Bockenheimer and Fritz Frohse, 1905, "Atlas typischer chirurgischer Operationen – Für Ärzte und Studierende"



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Note: the instruments to be used were, at first, bulky in order to be safe, while later on they became more slender in order to be more precise and non-harming; or the microsurgery instruments with specific magnifying glass glasses and frontal additional lightning; then the electro catheter which has replaced the classical scalpel and the hemostasis by forceps; then the cavitron for the section of the parenchyma, especially of the liver parenchyma.

Besides the instruments and the devices I have mentioned above, one also uses: the instruments and devices for microsurgery and mini invasive surgery with its variants (the robot for laparoscopy), the platform with stiff arms (da Vinci or the endoscopy-type robot), the platform with flexible arm (Monarch).

All of these are being manufactured by a specialized industry, which has an ever growing medical technology, due

to the demands and the collaboration of the surgeon, adapting it to his needs and aimed at reducing the operatory invasion into the human body. These fields of research are being led by brilliant minds: some of them have even worked for NASA.

Accordingly, due to the technological support, **nowadays surgery** is being **performed in several ways** and has several **branches**:

Classical surgery, open or conventional

Microsurgery

Non-invasive surgery which, at its turn, has other branches:

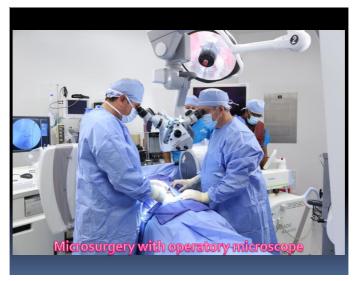
- Manual laparoscopic surgery
- Robot-assisted laparoscopic surgery
- Computer assisted laparoscopic surgery
- Robot-assisted laparoscopic surgery
- Robot-assisted laparoscopic surgery the great quality leap
- Robot-assisted telesurgery via satellite



**Source:** https://www.technogies.com/healthcare/5-important-types-of-surgical-devices-used-in-the-operating-theater/



**Source:** https://vir123.com/laser-surgery-side-effects/



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**Source:** 

https://eng.amc.seoul.kr/gb/lang/specialities/departments.do?hpCd=D150



**Source:** https://www.indiamart.com/redsuncommunication/hospital-interior-design-service.html



**Source:** https://www.ormc.org/blog/news-media/robotic-surgery-available-at-orange-regional-medical-center



**Source:** https://www.freepressjournal.in/cmcm/meet-the-worlds-first-assistant-surgeon-robot



**Source:** https://www.aurishealth.com/monarch-platform



**Source:** https://www.bloomberg.com/news/features/2018-03-23/robots-could-replace-surgeons-in-the-battle-against-cancer

A revolutionary conceptual moment: in 2018, the MONARCH robot which, with a single flexible tube introduced through the natural ways, and foreseen with a personalized program made by the operating surgeon, could achieve "visibly" a surgical act; how complex it will be and which regions of the human body will it be able to reach, is unknown at the present or in the near future.

Regarding the debate as to which of these ways of operating is more important, a single statement says everything: Rule # 1 of the mini-invasive surgery, under all its forms: "it is not allowed to be performed in the operating theatre, without a surgeon qualified in classical surgery who can, if necessary or for the more complex cases, perform an open surgery". Even more so, he must be a real

master of the very difficult cases, and not an ordinary surgeon; there will be no more room for ordinary surgeons.

After putting the patient on the operation table, and connecting him to the above-mentioned machines, there follows the therapeutic act itself - the surgery - according to the standard operating protocol. Standard operating protocols are being drawn by surgeons with experience, and can be learnt from atlases, surgery books, films on rolls or DVDs. The operation has thus its central moment: the way the operating surgeon (who has his obligations and his qualities) respects the standard operating protocol, according to the particularities of the lesions and to the patient's organism.

The operating theatre and the performing surgeon are hard to be separated. Everything that happens during the surgery is led by the surgeon, and it represents him. The operating theatre, with its impressive machines - which are the result of remarkable minds – represents the sanctuary from where the surgeon performs! It is seen as a place with a very special aura; previously, it was said that it detained an aura of mystery and miracle – now I would say that it is a place for respect and miracle. The ritual of silence and extreme focus before a surgery is typical; the mind precedes, while the manual activity follows it with no alterations whatsoever. In order to induce and create an atmosphere.

I will respectfully relate you a story:

At the beginning of each operation day, Professor Ion Mureşan, after he would wash his hands for exactly 15 minutes, and after he was being dresses in medical sterile uniform, he would go to the corner of

the operating theatre, say a prayer which only he could hear, make the sign of the cross, and afterwards start the operation in complete silence. This would happen even shortly after 1945! This attitude, intermingled with the operation style, is extremely impressive, but it also conditions the proper healing of the patient.

"The value of the surgeon is known by the way in which he operates!", has declared some time ago the known Russian surgeon Uglov, while taking part in a subtotal thyroidectomy, in classical style (half-sitting position and local anaesthesia), which has been performed as a demostration by Ion Mureșan, with the aid of Nicolae Bucsa. Also present in the operating theatre was Ion Lighezan (who was then leading the team as an official director of the SANITARY DIRECTION Timis) and a young person, aproximately 20 years of age, thrilled by the beautiful operatory spectacle, and paying attention to even the smallest details (which had afterwards stuck with him for 60 years). It is a form of art: to present the forceps (by the aid), only with the left hand, and to perform the ligation for the hemostasis in the same halfsitting position of the patient; rhythmically, with no tearing of the very friable tissues, with no repetition,

from the right to the left of the patient, and with no bleeding. This was and is the beauty of classical surgery.

Are we taking part at an end of an era for the beauty of surgery? I believe that the beauty of surgery will prevail; it is said that the surgeon and the operatig theatre form an operatory spectacle. Maybe we will admire the beauty of a computer-made program, performed by a customized program-surgeon, simple, trustworthy and perfectly made — which will lead, with extreme precision, a surgical robot, in order to better fix the lesion of the patient! And not only that; the open-classical surgery will necessarily prevail at the same time, or in adition to the robotic one. This is the foreseeable future!

If the operation is the essence of the surgical activity, the surgeon is the CENTRE of the whole activity. Due to the surgeon, the whole operatory act exists (it is a concentric hierarchy). The operating surgeon is the one who claims responsability for the activity in the operating theatre. He selects the type/ way of surgery which is suitable, the operatory procedure/ protocol, and the tactics to be used during the surgery. This is the reason why one believes that "the surgery is both a science and an art" – if you think of this from an aesthetic point of view, the operatory beauty created and appreciated by the surgeon is synonymous with the Good.

It is only natural to state that the personality of the surgeon is extremely important to this profession, even if the technological support is impressive; maybe the robots will operate alone in the future, but they will still be trained and supervized by a surgeon. However, for the moment, any kind of machine will remain but a helping tool, and it will probably stay like this for a while. In the first place, there will always be the value of the human mind; and a surgeon isn't more valuable because he has more machines to help him, but because he has a greater thinking capacity and is more talented.

Due to the surgeon, the whole operatory act, in order to take place, must entail two fundamental values: the Value of the Surgeon and the Intraoperative technical and biological Thinking.

The talent is the personality trait which makes the art and the miracle of surgery possible, while the intraoperative technical and biological thinking determines the perfection and the science in surgery. The surgeons possess them all, and they pay different attention to these aspects; on the extreme side, some of them are being considered "technical" surgeons, while about others some say that they are "intellectual surgeons". These are the essential and durable values of the operation: they have been subjected along the way to new additions, notes and systematization. They will prevail in time as long as there is surgery.

Here is what **Professor PhD. Petre Drăgan** (he has also been engaged in the university activity between 1990-2002), who has played a leading role in the tissue and organs transplants in our university medical centre (in a quite

difficult pioneering period for this field of surgery) says about the seriousness and responsabilty of choosing and practicing the profession of surgery:



Video available at: https://youtu.be/zRL7pWGbpdk

Here is how Professor Petre Ignat (1993 – 1994) was mentioning the professional notions. He was one of the masters of surgery and this is what he was saying about the value of the Timişoara-based surgical school some years ago:



Video available at: https://youtu.be/ibtzg-SNcC4

We also have to keep in mind Professor PIUS BRÂNZEU, the extremely valuable scientist, a pioneer in vascular surgery and a true thinker in our profession:



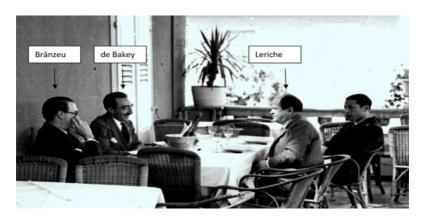
Photograph by courtesy of Professor Pia Brânzeu

It is interesting and instructive to note that the SURGEON PIUS BRÂNZEU was also one of the three pioneers and surgical school mentors from Timişoara, alongside Alexandru Pop and Ion Mureşanu, but also one of the three Rectors of the U.M.F. TIMISOARA; he was remarkable due to his conduct, alongside Ştefan Gavrilescu and Professor Marius Raica: Brânzeu, a Rector of prestige; Gavrilescu – a Rector of originality and science; Raica – a Rector of traditional professionalism and firm beliefs.

The respect shown to the essential principles of scientific research, the Truth and the Value, can be paid in many ways.

The personality of the academic figure Pius Brânzeu was being shaped by an attitude with symbolic meaning, which has also served the science of surgery.

Long time ago, at an important scientific gathering which took place in Cluj, regarding the reconstructive arterial surgery, he had proposed, together with Professor Rene Fontaine – a good friend from his Rene Leriche period in Strasbourg, where they have studied along with other world-known professors from different universities, – the paper with the title "Late Results at 100 consecutive Cases of autologous venous Bypass Grafts of the femoral - popliteal tibial Territory; over 10 years from the last case operated" (Surgery Magazine Bucharest, Vol. 32, No. 4, 1983: 253-262). It was also the moment when one was defining, in the practical surgery, the value of the autologous venous graft. It was definitely a symbolic attitude of **high scientific** correctness!



Photograph by courtesy of Professor Pia Brânzeu

Yes, Timişoara has had and still has world-known surgeons, a surgery school with a serious attitude toward the patient, based on responsibility and correctness.

This has been a short description of the operating theatre, of the atmosphere in it, but especially a description of the importance of the surgeon, a praise uttered for the one who is the "ideal character-surgeon".

# Chapter IV. THE TALENT AND THE INTRAOPERATIVE TECHNICAL AND BIOLOGICAL THINKING

And now let's start to enter the realm of the unknown mystery of surgery. I want to emphasize once more the two values of the operatory act: the talent and the intraoperative technical and biological thinking, notions which must necessarily be known and used. If we want to know what the operation is, we must understand these two notions.

# $\rightarrow$ TALENT $\leftarrow$

I must confess that I, especially at the beginning of my career, was very curious in knowing what the talent in surgery implies, because I had heard that it is not advisable to lack talent in this profession. Now I would say without hesitation that the biggest problem is to lack talent in the professional and social life. The TALENT, as a general definition, means also the capacity to learn something very quickly. There are persons who have a certain predisposition to a certain domain. Several synonyms define it: craft, skill, grace, ability, vocation, ingenuity. Talent is usually inborn; it comes out during childhood, but this is not a rule per se. Those who are really gifted can have this quality in several domains. Even if somebody is extremely talented, he needs to work hard if he wants to excel in what he does. Some people, even if they do not have a lot of talent, can become good at what they do if they work hard enough. On the other hand, the lack of talent is something beyond somebody's ability to do or fix something.

There also is surgical talent. Even in this domain there are surgeons who can easily perform any type of procedure, who can do with great results what others cannot, and have a personal manner of operating. These are the talented surgeons!

I have met several types of operating at some perfect surgeons. The individual, physical and character particularities determine the different ways to perform an operation, even if one respects the same principles and the same operatory tactics (i.e., they take place in a similar manner). Two different styles are at the extremes:

surgeons with a more aggresive, more brutal style, with moves which are very determined and who pay attention to the final result of the surgery; who know to correct the eventual mistakes, which can rarely show up in this manner of working. One could call them "quick-handed surgeons"! They get good results in operations where the maneuvers are being conditioned by the short period of time in which they are performed.

"preventive surgeons", who deliberately avoid possible problems, even if sometimes it isn't even necessary. They work overtime, but are very precise. The extra-hours can also call for unexpected problems (a job extremely well done can also be the enemy of a good deed).

All of them are masters and have created in specific domains of surgery, which have suited them best.

From this point of view the geniuses, the ones who always get the best results and operate with few complications, are also the ones who adapt their style according to the anatomical and physiological particularities of the one they are operating on, and not only to the operatory tactics. This ideal is hard to control even if one pays the necessary attention to the intraoperative biological and technical thinking.

Also interesting are the relationships between talented surgeons and talented artists, based probably on this common quality. The life-long friendship between Theodor Billroth and Eduard Brahms is well-known, both being keen on the Romantic classics, in the detriment of Franz Liszt and Richard Wagner. This friendship has been beautifully

commented on when one has discussed the relationship between surgery and the arts.

In the whole operatory activity, both conventional and mini-invasive, one can identify the following abilities which define a talented surgeon:

- Manuality the ability of the hands
- The type of thinking specific for the operational act
- Personality traits: the type of character, the personality, the temper
- The capacity to lead the surgical team

# The manual ability lies in the following qualities:

- The speed in the execution of the surgical act
- The precision in accomplishing the act
- The efficiency of the act and the lack of motif to go through it again
- The flow of the act and its rhythmicity
  - A sharp eye combined with the speed of reaction a quality mentioned by ophthalmologists, due to the particular structure of the balance between cones/sticks in the retina, which is also associated with a performative visual sharpness. Training and growing this ability can be done by practicing computer games.

All of these make the surgery to run smoothly, fast but not hurried, neat and beautiful to watch.

The intraoperative thinking (the second important trait of a talent)

This trait of the surgical talent lies in:

The way of thinking during a surgery

The method of thinking during a surgery

The way of thinking while performing a surgery is more specific than the one needed in order to be rational in other circumstances or professions. It needs to be done through **clear**, **exact and quick ideas**.

There is also the need of a systematic method of thinking in order for the notions to be used promptly. The way and method of thinking are the qualities of a mind apart, useful in intraoperative activities; they are part of the surgical talent.

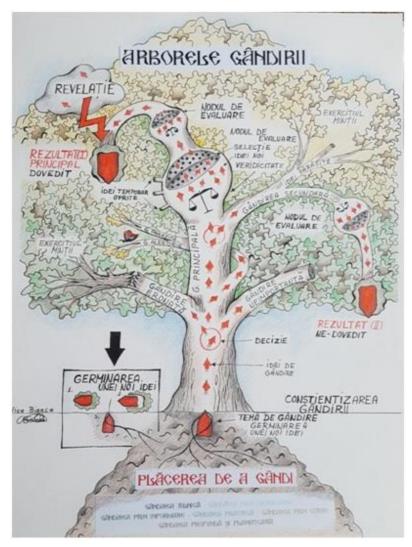
The intraoperative thinking has two more specific aspects besides the manner and the way of thinkig:

The capacity to have a vision in space (the same as a sculptor does)

Remembering with ease the personal experience

It is obvious that this way of thinking during the surgery is different than the one of the researcher or thinker, who only do it for the pleasure of thinking; for whom ideas are going through patience and perseverence - sometimes by repetition - by the four analysis "nodules", which are

synonymous with the 4 stages: identification, selection, preoretizing and essentialism (I.S.P.E.).



Photograph: personal archives

**Important to know**: alongside talent, the permanent preoccupation (even obsession) for the

professional activity makes it possible to educate the mind accordingly.

The constant development of the power of thinking and of the reason, which leads to the final conclusion (answering the WHY question) is a permanent preoccupation in general, but necessary for the activity and the creation of the surgeon.

**Personal traits**: when it comes to the character, the personality, the temper (which is the third side of talent) of the surgeon:

Balanced – quiet – tenacious – conscious of responsabilty – daring – calculated – calm – a good emotions controler – full of self-esteem – effort rezistent – ready to solve a failure – able to concentrate when majorly needed.

A manner of living and a mentality with firm convictions regarding the material and spiritual life: to be good, kind and modest. To assume with dignity the failures, and to do everything so that it does not happen again.

The state of emotions needs to have two main traits: the state of empathy toward the patient, outside the surgery, needs to modify rapidly during the operation — where the balance between heart and cold and competent thinking needs to prevail in activities and in taking decisions; a person who lingers, is being scared or a coward, but also an exuberant state of mind, are the main enemies of the perfect operation.

The capacity to run the surgical team (which is the last trait of the talent, the forth) is a quality necessary

for all types of surgery, but it is especially valuable for the mini-invasive surgery, where the surgical team is usually interdisciplinary, outside the surgical and medical world.

The qualities which lie at the basis of the surgical talent must be known even by a talented surgeon, in order to know what needs to be completed and what needs to be exercised, so that one can become perfect. It is good to know, for a beginner surgeon, if he is talented, but the most important thing of all is to know that he doesn't lack talent.

# → <u>INTRAOPERATIVE THINKING</u>←

**THE INTRAOPERATIVE THINKING** is the second essential condition, besides talent, for accomplishing the operational act, for any type of surgery, from the conventional one to the mini-invasive surgery.

It relies on the talent of the intraoperative thinking that I have previously mentioned. The one who possesses this part of talent can think more easily and more concretely.

## What exactly is the intraoperative thinking

To know exactly what to think about, at which time and to systematically think during an operation.

Since always, and contrary to many box-like opinions, the thinking has been part of fulfilling the operation; sometimes one insists on the fact that the operation is, first of all, an intellectual act. The way of selecting, the options and the decisions taken – have always been necessary for the operations which require with ease a well-known solution, but especially for those whose final result depends on the

experience and inventive capacity of the surgeon. What does the intraoperative thinking imply? Not long time ago, this was limited, varied and determined by the limited time conditioned by the possibilities of the anesthesia. Some surgeons used to think, and, strangely enough, still do sometimes – they connect it only to a certain technical or tactical maneuver – about notions which they have learnt from surgery books and atlasses, and from the experience of prior similar cases; and sometimes about respecting the 10 mandatory principles of surgery.

**Historically** speaking, when it comes to the intraoperative thinking, three different periods can be mentioned:

The initial period – the empirical period, when one would choose arbitrary and subjective criteria, a fact which has made the method known under the "trial and error" method; one would no longer do what was previously proven to be a failure. It was, still, an evolution.

Then, after the second half of the 19th century, to the basis of reason involved in performing operations, one has introduced, step by step, along the technical thinking, the rules and conditions which were determined by experience, and which were regarded as milestones in accomplishing good results (the so-called mandatory principles): 10 principles.

# 10

### MANDATORY PRINCIPLES IN SURGERY

- --- PROPER EXPOSURE AND EXTERNALIZATION
- --- METICULOUS HAEMOSTASIS
- --- THE USE OF NATURAL CLEAVING PLANS
- --- GENTLENESS IN TISSUE HANDLING
- --- COMPLIANCE WITH ASEPSIS
- --- WORKING FROM SIMPLE TO COMPLEX OP TACTICS
- --- FIRM GESTURES
- --- AVOIDING TISSUE DRYING
- --- GENTLENESS IN TRACTIONS AND SPLITTING
- --- CHECKING THE OPERATORY AND DRAINAGE FIELD

All of the above need to be respected in order for the surgery to fulfill the following terms: to be safe, simple, for life, adapted to the case, clear in its execution, fast, anatomic and physiological.

And starting with the '80s – '90s, based on these healthy rules, which have often perfected the surgery to the point of perfection, due to the evolution of important fundamental biological sciences, which could be applied to the surgical domain, one could acknowledge the possibility of introducing these biological notions to the surgery itself. One also had to replace the technical thinking, and find a way of thinking, more complex and more valuable, but also systematic at the same time, which could have been used with ease. Moreover, the quickness during the operation, which had been previously conditioned by

the short-term anesthesia, was not an important factor anymore.

The intraoperative thinking is a notion I have much pondered over, especially when I was mature enough in my professional life. I have had this preoccupation for acknowledging the existence and the utility of the moments of reflection, so necessary during a surgery. I have named these reflective moments "TIMES OF DECISION", times when one chooses the gestures and the maneuvers to be made, in order to proceed with the operation in some important moments of it.

It has been a work of acknowledgement, but also of analysis, of systematizing and verification.

Here is how an intraoperative thinking takes place, by using the decisional times. During an operation, something unexpectedly might come up, or the surgeon may consider that it is necessary to change the normal routine of the operation, due to an individual particularity: so a problem has come up! This is the moment of acknowledgement, of achievement, a deliberate decisional time. Usually, the process of solving these decisional times takes place without a halt in the manual activity, without stopping the clean course of events during an operation; sometimes it even slows down. Some other times, the surgeon even slows down shortly in order to be able to take such a decision. THE PROBLEM WHICH HAS COME UP WILL NEED TO BE SOLVED ACCORDING TO A SCHEME, AN ALGORITHM according to which we will be able to think, to SYSTEMATICALLY solve the problem. The decisional times determine the following algorithm: after enunciating

the problem, it will be analyzed according to technical and biological criteria; then one formulates the options, and a solution is being forwarded, the decision.

#### THE PROBLEM:

#### THE CRITERIA:

technical – it implies the gestures and maneuvers of the surgery

biological – it implies the morpho-functional state of the tissues and of the sick organism

#### **OPTIONS:**

#### THE DECISION:

The intraoperative thinking needs thus two sides in order to be analyzed: <u>the technical thinking</u>, which uses criteria of operatory technique, and <u>the biological</u> <u>thinking</u>, which uses biological criteria and notions of the fundamental sciences in medicine.

The technical thinking. In order to solve the technical criteria of the algorithm, the judgment needs to refer to the choice and type of execution of the gestures, and maneuvers which are seen as proper for the particular case (from all the basic maneuvers of the operatory technique). The technical criterion largely correspond to the decisional time of the classical type of thinking, but it is also generalized and systematized according to the procedures which take place during an operation. So, in order to think according to the technical criteria, one must know and learn by heart the **9 maneuvers and gestures** which are fundamental to the technique:

# 9

# GESTURES AND TECHNICAL MANEUVERS NECESSARY FOR INTRAOPERATIVE REASONING

- --- THE WAY OF APPROACH
- --- EXPOSURE EXTERIORIZATION
- --- SUTURES AND ANASTOMOSES
- --- SECTION, SUTURE PARENHYMS
- --- DISSECTION
- --- HAEMOSTASIS
- --- DRAINAGE
- --- CONTAMINATION CONTROL
- --- STOMATA
- --- SUBSTITUTES AND AUTOGRAPHS

The biological thinking. In order to solve the biological criteria of the decisional algorithm, one must properly decide for a patient the existing lesions of the tissues and organs (due to his disease), but also the way and capacity to heal after the new lesions (which were being caused by our operatory maneuvers). This is how the modern and valuable addition of the biological notion has been introduced, when related to the intraoperative decisional timing. The biological criterion is the one which can decide in the case of the abovementioned algorithm: if a technical maneuver can be made or replaced by another, suitable for the same purpose.

Maybe several of my operatory accomplishments/ successes, when it came to the complex cases, have been made due to the fact that I have given a lot of importance to the biological criteria when taking decisions regarding the operatory timing. I have also written about this subject. Thinking and operating with biological notions implies a very well organized and memory-based knowledge about this subject. One learns them together with the preclinical medical specialities and one repeats them over and over again, perfects them, keeps them fresh, while also consulting "basic sciences review" books.

#### General fundamental biological processes:

	The answer of the organism to aggresion (homeostazsis)			
	hemostasis			
	General and specific immunity			
	The shock			
	Organ failure			
	Multiple organic insufficiency, chronic M.O.F.			
	Hemorrhagic syndromes			
	Immuno-depression			
	The consequences of clamping large vessels			
Local fun	damental biological processes:			
	local healing by cicatrization			
	organ ischemia			
	hydraulic principles in vascular surgery			

aseptic inflammation
septic inflammation, phlegmatizers, abscess
contusion
diffuse and circumscribed hematoma
ischemia, tissue necrosis

#### **BIOLOGICAL NOTIONS NECESSARY** FOR INTRAOPERATIVE REASONING LOCAL HOMEOSTASIS **HEALING BY HEMOSTASIS CICATRIZATION** SPECIFIC-GENERAL ORGAN ISCHEMIA **IMMUNITY HYDRAULICS** -THE SHOCK VASCULAR SURGERY ORGAN FAILURE ASEPTIC INFLAMMATION MULTIPLE ORGANIC SEPTIC INFLAMMATION INSUFFICIENCY CONTUSION CHRONIC M.O.F. DIFFUSE HEMATOMA **HEMORRHAGIC** TISSUE ISCHEMIA **SYNDROMES** TISSUE NECROSIS **IMMUNO-DEPRESSION** CIRCUMSCRIBED CLAMPING OF LARGE **HEMATOMA VESSELS**

Thinking with the help of biological notions determines oneself to conclude, not only in the operational area: **at the moment**, one of the efforts taken by surgeons regards the respect granted to the way of healing of the organism; to know that an infection is the number one enemy of the surgery, and that the most irreversible mechanism is the acute

and multiple chronical organs dysfuction of the following type: the triad liver insufficiency – immune insufficiency – intestinal insufficiency. These are the basic biological principles of surgery at this moment. The use of biological notions leads towards **the future**, towards a new perspective, alogside the extraordinary medical technology. One can already foresee that the future of surgery lies in the capacity of the surgeon-and-biologist to shape and accelerate the healing processes, and even improve the human being with the help of new possibilities. The healing process will become more miraculos, stronger and faster.

# **CHAPTER V.** THE CONCEPT OF SURGERY FOR THE MASTERY AND GENIUS OF IT. VALUE AND PERSPECTIVE.

I have insisted for a while on the professional specificities and I believe that it has been both instructive and interesting – it has been, from my point of view, necessary. Hadn't I detailed all of it, one would have remained with mere statements, without a proper understanding and without practical use. Moreover, having this information as background, one can better understand what follows.

And what follows is a very valuable conclusion, one which must be taken into account for the rest of the surgeon's life. I see it as a personal contribution to the surgical theory. It is a confession of my professional faith. I would personally call it a CONCEPT: "THE POWER OF TALENT AND OF THE INTRAOPERATIVE THINKING".

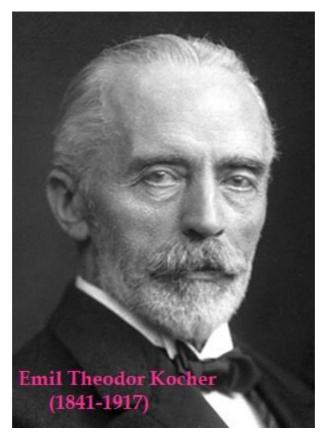
ONE MUST BRING TOGETHER THE POWER OF THINKING, THE INTRAOPERATIVE THINKING, BOTH OF THEM FAMILIAR TO THE SURGEON AT THE HIGHEST LEVEL. They are decisive, even crucial, for the surgical profession; they are part of what one would call "the unspoken secrets of the master" or "the sacraments of surgery"! Why should we believe in this statement?

#### There are 5 motifs:

1. By bringing the two together one <u>makes possible the knowledge</u>, the <u>understanding and the supreme accomplishment</u> in surgery.

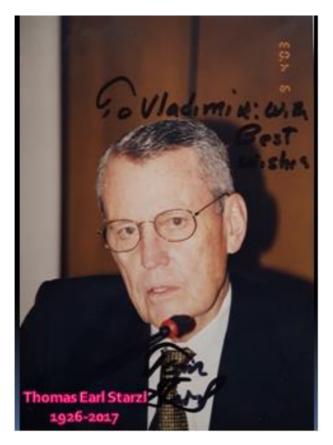
- 2. It makes possible to picture the final result, from the beginning of the surgery; how one will place the newly-created montage and how the organs will be mobilized during the dissection.
- 3. They make it possible to prevision the post-operatory healing, by the way you know how to lead towards healing during the operation. You will be able to foresee the future evolution towards healing of the operated patient. It is a miraculous gift! To foresee the medical destiny of a person once you have completed the surgery!!!
- 4. They make it possible to "compose" an operation as an act of intraoperative creation, but also as a method of doing new procedures, sometimes with the purpose of approaching a new domain in surgical pathology.
- 5. Moreover, the association of the two notions, talent and intraoperative thinking, stands for the pillars on which the supreme surgical performance raises itself, beyond mastery, to genius. By putting together the talent with the thinking when referring to the concrete reason during an operation, and by transforming it into a river of ideas in the domain of pathology, where surgery hadn't been used before; and then to successfully apply them in routine practices this is surgical genius.

Out of the many personalities which have made history in surgery, two are the surgeons who can be seen as **undisputable geniuses** to this profession.



Source: https://www.nobelprize.org/prizes/medicine/1909/kocher/facts/

EMIL THEODOR KOCHER (1841-1917), because he was considered as the absolute surgeon, the most valuable of his time, seen as such even by the great contemporaries, William Halsted and Theodor Billroth, but also because he has introduced and successfully performed the tyroid surgery in the surgical science. He has received the Nobel Prize in 1909 for physiology and medicine.



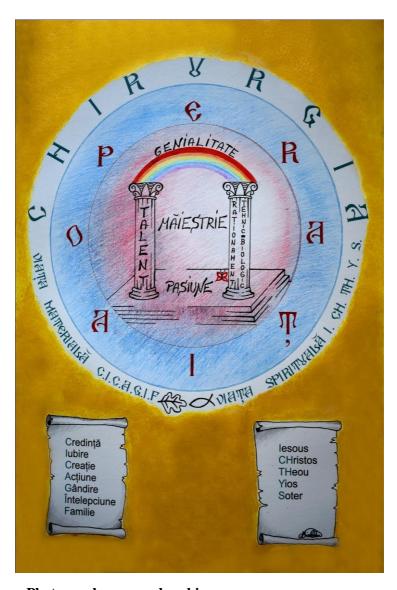
Photograph: personal archive

THOMAS EARL STARZL (1926-2017), because he has demonstrated since the early years, his capacity to do performative surgery, but also because he has successfully performed hepatectomy, and mostly due to **achieving the impossible**, the hepatic transplant as a routine clinical method; but also of numerous other organs or associations between organs, a reason why he has been classified as the **number 213 personality of the former milenium**.

THIS IS SURGERY! This is how I have perceived it and I have contributed to it, making it essential while having the future in mind.

Here are three paintings, three artistic representations, which portray what I have mentioned so far, a sort of synthesis of this conceptual lecture:

- 1. A drawing made by an artist
- 2. A symbolist painting made by two surgeons
- 3. A painting made by Professor Daniela Constantin, head of the Plastical Artists' Union from Timişoara and Professor at the West University, The Department for Visual Arts and Design.



Photograph: personal archive (The picture renders The surgery, Operation, Genius, Mastery, Passion, Talent, Technical and Biological Thinking, The material Life, The spiritual life; and then Faith, Love, Creation, Action, Thinking, Wisdom, Family and Christ)





 $\begin{tabular}{ll} Photograph: UMFVBT (The plate reads "Fascination - Miracle - Perfection and was donated to the UMFT) \end{tabular}$ 



Picture by Professor Daniela Constantin
[72]

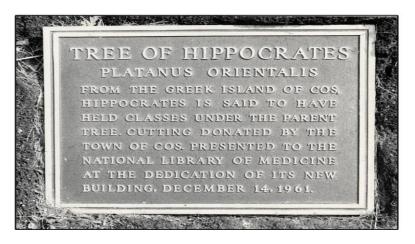
## → TRADITION AND THE PRINCIPLES OF MATERIAL AND SPIRITUAL LIFE FOR THE SURGICAL MASTERY ←

I will end this book with two thoughts which are part of my vision at the end of professional life and in which I firmly believe:

- 1. The importance of tradition
- 2. The way of thinking and living in order to achieve the peaks of surgical profession

**TRADITION** is one of the values according to which the human existence is being constructed.

The tradition in surgery – a principle which has existed for 4000 years, in the oath sworn by the father of medicine, Hyppocrates (a citizen of the little island of Cos) – means that we need to be conscious that everything one accomplishes, everything we realize at a certain moment, is due to the fact (which I now reiterate) that "we are climbing on the shoulders of giants, our predecessors, our forefathers". Let's never forget and be aware that we must praise the ones who have taught us how to operate, our masters, like we would praise our parents. The history of science has proven that usually the continuity of an idea for hundreds of years, in an institutional activity, is a precondition in order to create grand ideas and great personalities. Our collegues, the chemists, say it axiomatically and suggestively: "out of nothing there comes nothing".



**Source:** https://www.ellines.com/en/good-news/12131-to-dentro-tou-ippokrati-stis-hpa/



**Source:** https://wikivisually.com/wiki/Tree\_of\_Hippocrates

### The importance of **THE WAY OF LIVING AND THINKING** in order to accomplish a good surgery.

The things we achieve during the time that we are here on earth, are being conditioned by the way in which we understand and respect the principles of material and spiritual life, tightly intertwined along our activity. How we live and the way in which we think, determine the possibility to reach, through passion, talent and thinking, mastery and even genius.



Photograph: personal library



 ${\bf Photograph:\ personal\ archive\ (It\ reads\ Thinking,\ Wisdom,\ Family)}$ 

On a conceptual level. It is good and it gives you a certain firmness in your actions, to find out with clarity which is the Path, the Truth and the Life, and this from a very early stage in life. Besides their supreme sense, a spiritual and holly one, which we all know, they can also be seen as obligations for the surgeons. The path in surgery is only one: utter, pure surgery. It is True, one can only make surgery with passion and total abnegation. One can definitely say that the Life of the surgeon is complete only when one strictly respects the material and spiritual values of life.

On a practical level. During my long surgical activity, of 50 uninterrupted years, I have come to the [76]

conclusion and have become conscious step by step, that sometimes the "inspiration, the decision" of a intraoperative decision, crucial for the patient's life, comes from elsewhere and not from one's own knowledge (even if this has become richer through the daily experience). This will determine a solution for all the situations which might look as impossible to be solved. I am making this surprising statement with conviction and analysis; it springs from a way of thinking rooted in the philosophical mentality, and from the practice of scientific research. And when you scientifically accept such observations, it makes you BELIEVE WITHOUT SEEING. Even more so, we need to distinguish and to add to this conclusion that somebody comes to help you during an operation, outside your own powers. It is the famous and old observation - which has remained as valid as before - that the 16<sup>th</sup> century surgeon and barber Ambroise Parre has uttered: "I OPERATE ON THE SICK, GOD HEALS THEM". The observation I want you to ponder over is another one, a more concrete one: WE HAVE BEEN HELPED IN ORDER TO SUCCED". I used to say that even during an operation. Not often, but I have said it. At other times, I kept it to myself: IT WAS NOT MY REWARD! I OPERATE ON THE SICK, THE DIVINE SPIRIT MAKES HIS INTERVENTION!!

Here is what other important thinkers, with a different profession than ours, have to say about **this statement regarding GOD**:

- The composer and famous performer Gheorghe
   Zamfir
- 2. The philosopher Octavian Paler
- 3. The Holly Bishop, PhD. Nicolae Corneanu

4. The astronaut and engineer in astronautics **Neil Armstrong**, who first set foot on the moon 50 years ago, on the 20th of July 1969, uttering the by now famous words:

"That's one small step for man, one giant leap for mankind" – an interview taken from Timişoara, a world-wide premiere (presented by DIRECTOR VICTOR POPA)



**Source:** https://youtu.be/CWIEm-ecufY



**Source:** https://youtu.be/HzIMtYBv6rc



**Source:** https://youtu.be/uuPk3mdS2EM



Source: https://youtu.be/ioZJUn7Zm28

### **CHAPTER VII.** REFLECTIONS AT THE END PROFESSIONAL LIFE

Led by the conviction in the operatory conception I have just mentioned, I have practiced my surgical activity using all my talent and the possibilites of my technical and biological intraoperative thinking, in order to make a better and more creative surgery and also in order to contribute to the constant development of the Municipal Hospital and, of course, of the reknown Timişoara school. The tradition of the surgical school is a unitary tradition, it is the Banat Surgery School, and also the school of the University of Medicine and Pharmacy "Victor Babeş" from Timişoara.

For the younger generation: dream grand dreams, bigger than those of your forefathers and, at least, become an example of tradition for the ones who follow you!

To be even better? YES, BE BETTER! TAKE INTO ACCOUNT THE EFFICIENCY OF THE DIGITAL WORLD IN MEDICINE!

### NOURISH ESPECIALLY THE POWER OF THINKING AND REASON!

What is there to be done in the future? Whom should we ask?!!!

CREATE! THINK! LEAN TOWARDS PERFECTION!

CREATIVITY, PERFECTION AND FAITH are the thoughts which sorround this life of mine as a worthy and hard working surgeon!!!

## **BIBLIOGRAPHY** from the personal library

\* It is an image-based presentation because it is a concept book, where I have stated that the surgeon has the obligation to gather during his activity years a library of surgery volumes. These days, however, an ebook based surgical library is also possible.

A surgical conception of the world can also be shaped by **COMPARATIVE** research (of authors and succeding editions) of books from a valuable library ranging for at least a hundred years back.

The printed and the digital book complete each other, they do not exclude one another. The printed book from the personal library shows you in an instant the volume of your knowledge or the lack of it. The digital book keeps you upto-date and it gathers in the most efficient manner the recent research.

One thus mingles the thinking *per se* with an informatics-based type of thinking.

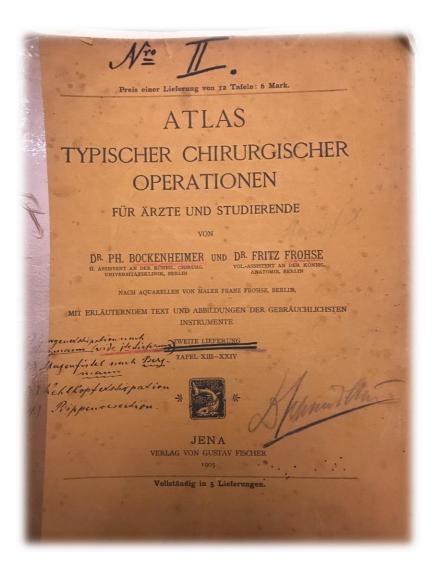


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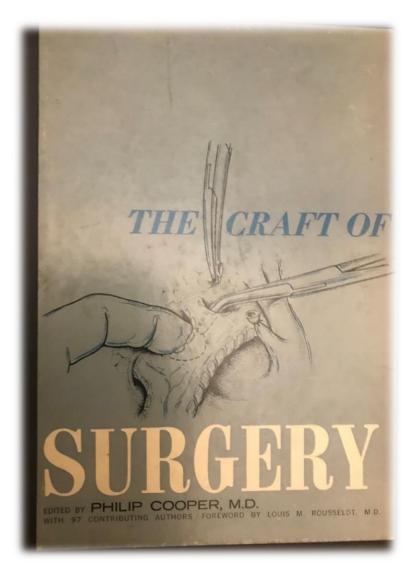


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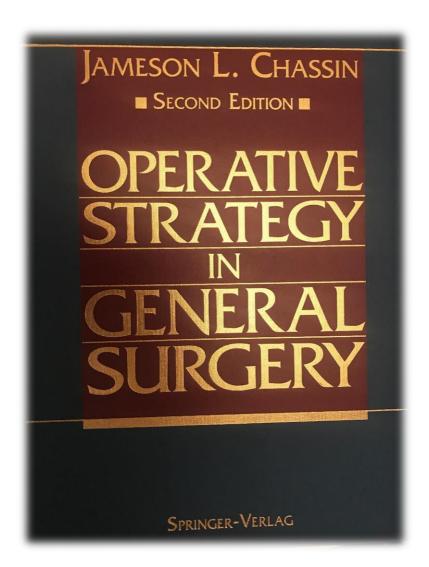
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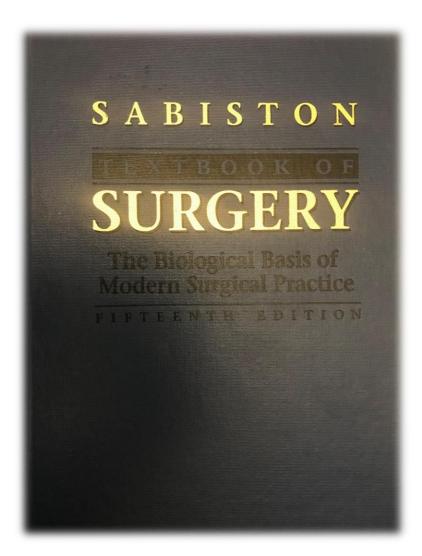


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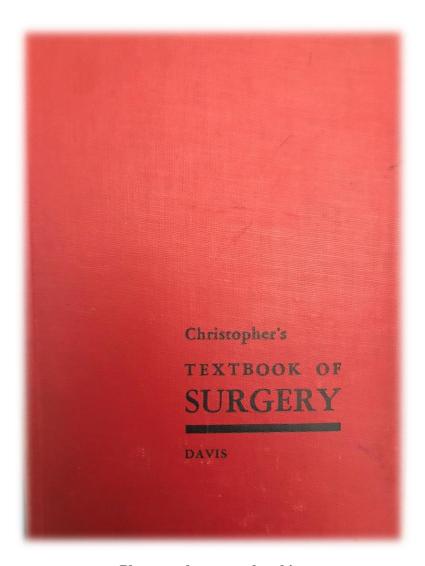


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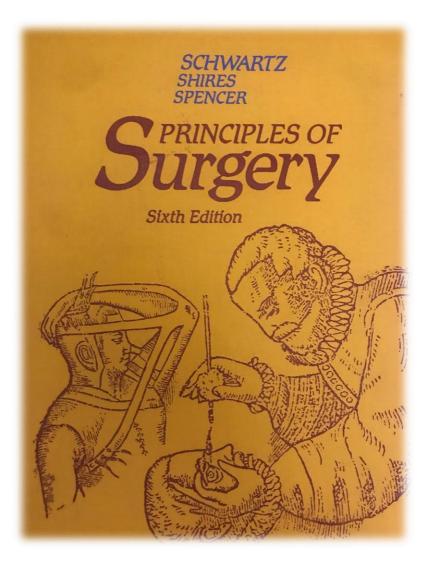




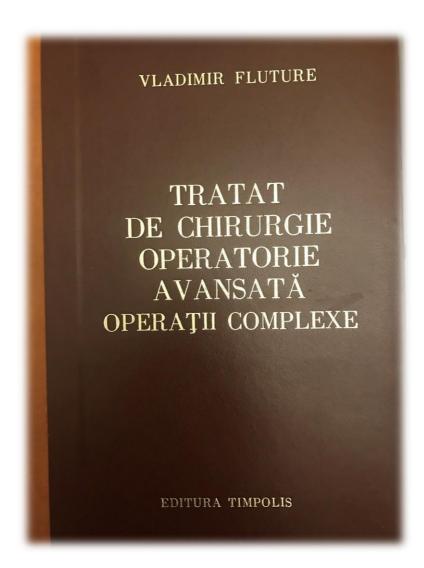
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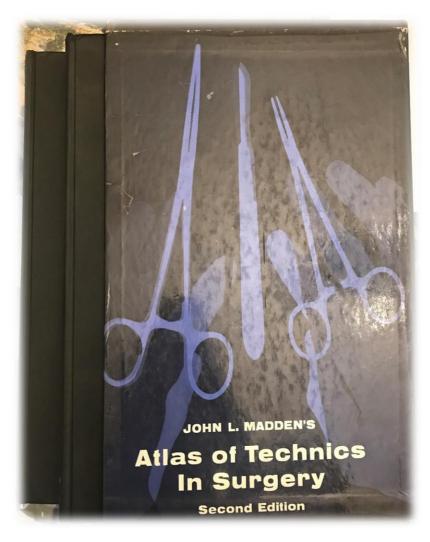


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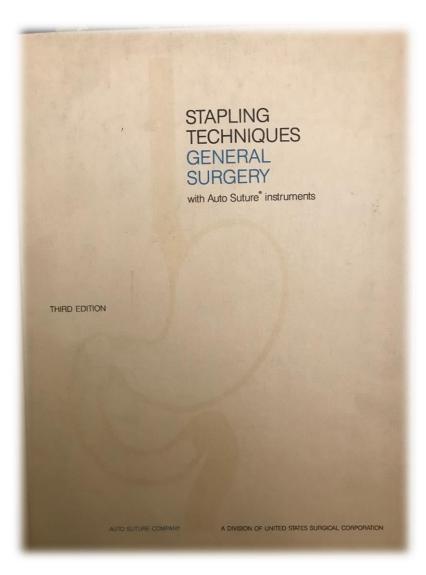


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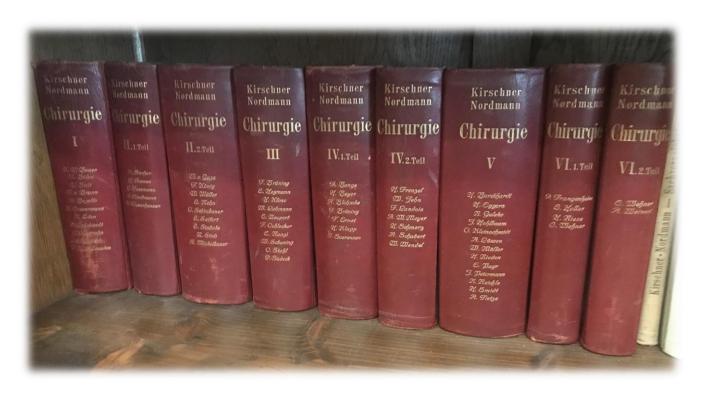




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#### Personal notes

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The title, carefully selected: The Path from the surgical Dream to the perfect Operation.

Concepts of Surgery appeals from the very beginning to the curiosity of the reader, as a door which has "Do not enter" as a sign – you can barely wait to open it, to enter mysteries which are not available for every person!

And indeed this book reveals several mysteries, slowly whispered by a master of surgery...

(Professor PhD. Gheorghe Ioan Mihalas)

