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To my American friend, Forest Gump!

Preface

This book is for those who have a sense of humor and look at nature and people with surprise.

Serious people striving for success will find laws and principles allowing them to understand of reality and to foresee the development of the events. They will get acquainted with a series of universal tactics of inventors, businessmen, lawyers and the military. There is a key to solutions of serious organizational, technical and vital problems in the book.

Events around us are not a chain of simple random occurrences. It is corollary of the laws, someone's interests and errors. If we closely consider this multi-colored mix, the feeling of hopelessness disappears. It becomes understandable how to go through difficult times and organize one's own life.

Sad guys will find the surrounding world not as a gloomy labyrinth but an amusing construction with lots of doors and windows that can be opened.

Students and creative teachers will appreciate the algorithm of creating jokes and funny stories. For official meetings and cheery parties that they will create a pair of jokes of their own.

You'll make sure that any activity gives an opportunity to invent. Such is the lot not only of hungry inventors, satisfied rogues and refined chaps with computers instead of brains. This is a natural quality of every creative person but sometimes difficult for complete revelation.

To live merrily means to invent. The excitement from the first invention can be compared with the feeling of love or a flight in a dream. To learn invent is easy, interesting and never late.

To invent is to understand, to grasp the gist and to have a special feeling of the system or matter you are dealing with. This means to foresee its future!

If you are clever you must be rich!

This clear American principle is not in full conformity with Murphy's Law, which reads:

If anything can go wrong, it will.

To verify Murphy's Law is no trick, the real task is to find ways to avoid it. This book contains such recipes.

Survival is the key word. Natural calamities or well planned difficulties time and again catch us unawares, and it is necessary to cope with them. I suggest doing it by means of looking at the universe as a set of systems subordinate to its more or less mysterious laws and principles. The value of such an approach is more the fact that it allows us to get rid of all kinds of dogma and prejudices. To see man not as a cluster of vices, but a System with its interests and ideals which so frequently contradict one another.

What is the sense of the existence of each individual and society as a whole? What is an ideal plan of development and an effective strategy of struggle? How does an ideal machine look, and what is it good for? How is it possible to create an ideal product and sell a dream?

It is difficult to find a clear and coherent answer in dusty philosophical treatises, manuals on economics, marketing and sociology. Who knows maybe it is worth while looking for them in this book?

At any rate, I tried to make this book transparent and interesting for any reader, **especially for those** who have a sense of humor and desire to come in touch with the secrets of creativity!

I shall be glad to receive any responses of readers and I promise to answer each interesting letter sent to my address kizevich@bk.ru or address of my Publisher.

Author

Acknowledgments

To grieve my family and friends by a sudden burst of doing something I have never done before is very cruel. In case of failure, it would double the cruelty! That is why I am sincerely thankful to my wife Natalie, my daughter Olga, my sister Tatiana, my friends and my University colleagues for their understanding and support. They were the first readers. Moreover, the fate of the book depended on them. Any of them could have easily stopped me by a piece of "friendly" advice or a gruff joke. They never did it. Just on the contrary, their approval inspired me, and I am infinitely grateful to them!

I must admit that I would never have started writing this book, had it not been for *Forest Gump*. It was he who by his own example showed me how easily it is possible to overcome difficulties if only you see a goal and not meditate on the difficulties to achieve it. Watching him, I realized that the key chain of success was determination to action. That is why the role of the Godfather of this book undoubtedly belongs to him!

My special thanks to my translator and friend Professor *Yakov Vovshin*. Despite his 75 years of age, he undertook the tremendous work of making an English version of the book. He managed it successfully, and for me it is not mere partnership, but a gift of fate.

Author

Translator's Foreword

The book, *Principles of Survival (A Theory of Everyday Creativity)* is dedicated to Forest Gump. Having read the book, the American reader more than the reader of any other country will understand the reason of the dedication.

Just as the Gumpisms the book contains, behind good natured humor and slight irony, deep philosophical thoughts, ideas of beauty of the Universe, reasons causing damage to it, means and ways of struggle and survival, high optimism and a strong belief in Man.

The reader will also find in the book echoes of the discoveries of *Parkinson* and *Peter*, *Murphy's Laws* and means of overcoming them and much more that will help him to say again and again: "*Keep smiling.*" "*Never say die.*"

Besides that, the book is a fund of hints and useful tips and gentle guidance to help even the most sophisticated through the complicated jungle which is called life. If it fails sometimes to show you how to deal with various situations, at least you can learn from the many examples of how **not** to do it.

"I shall be glad to receive responses of readers and I promise to answer each interesting letter sent to my address kizevich@bk.ru or address of my publisher."

Professor Y. Vovshin

1. *Secrets of Pyramids or Popular Theory of Systems*

Principle of Maturing

The life of social systems seems to be thoroughly investigated. Their birth, “maturing,” and decay are predicted. But for many people these natural and appropriate processes look unexpected and suspicious. What could be the reason? Is it because there is no very clever Aleck to explain the real reasons or the people involved in the process and the terms?

Parkinson and Peter have already told the World that a bit of common sense and irony can disperse the fog surrounding those who have an inclination to operate the people and dream of making their career by a big leap.

The data assembled by Parkinson have allowed him to formulate some simple but important principles:

- *The number of people in any working group tends to increase regardless of the amount of work to be done.*
- *An official wants to multiply subordinates, not rivals.*
- *Officials make work for each other.*

To be an official and a bureaucrat is the destiny not only of civil servants. Any worker or manager, who cares not so much for beauty and efficiency of his activity but his own significance and momentary personal profit becomes a bureaucrat. The consciousness of such people is closed for a sober self evaluation. They are insulted by a mere question of the worth of their activity.

There is no secret to anyone that the officials aim to climb on the hierarchical ladder to expand their authority and facilitate their own activity. The process of rising is limited by the fast narrowing and densely filled vault of a pyramid. But there is a possibility of relative ascent. For this purpose, it is necessary to increase the quantity of subordinates. The officials do it, and the pyramid grows, raising them above the basis. They

are too naive thinking that they shift the activity on their subordinates. Quite often just the opposite happens: The subordinates give them additional work and senseless bustle.

Parkinson was lucky. He happened to see only large hierarchies prospering on the soil of “boundless” state and natural resources. But times and countries often differ. A serene growth is replaced by crises, accompanied by reorganization and “modifications” with inevitable conflicts of interests. Quite recently self-assured the officials lose hard soil. At night they nervously think of the future, and in the daytime, they closely watch and follow their colleagues and subordinates. The main contender in the struggle for survival is among them. He is enemy *Number One*, who should be in proper time detected, neutralized and, wherever possible, made use of. And if that is impossible, he must be destroyed. Well, just in case of.

Laurence Peter has discovered

The Peter Principle:

In a hierarchy, every employer tends to rise to his level of incompetence.

Corollary: Work is accomplished by those employers who have not yet reached their level of incompetence.

In large centralized systems, the well being of the officials essentially depends on the level of hierarchy and his post. That is why not everyone strives to achieve competence and keep it. There is more ground to participate in intrigues, and fight for a place at the top. That is enough for the decay and breakdown of any hierarchy. Therefore, Peter frankly advises to remain at one’s level of competence, saving his health and the pleasures offered by life. He threatens death to those who disagree with it. Moreover, he extends it to all mankind. He asserts that all mankind can reach the level of incompetence and perish.

How conservative he is! At the same time, he implies the preservation of those terrifying pyramids which are willy-nilly connected with the life of the majority of the people of our planet.

Another conclusion can be drawn from the Peter Principle.

The Principle of Maturing:

The top of the pyramid will be sooner or later occupied by the incompetent.

That is the beginning of real misfortunes. The epidemic of incompetence will spread from top to bottom destroying or displacing competence.

Getting rid of his contenders, the obtuse official produces even more obtuse subordinates. The latter act in the same way. Meanness produces meanness. The inability to perceive criticism coming from below and suppress it deprives the pyramid of effective feedback and hopes for improvement.

The situation is aggravated by the fact that large systems are indeed difficult to manage. The principles of operation of a large pyramid lie beyond the edge of comprehension of the majority of its inhabitants. It helps those who claim for the top to convince the associates in their own competence with the help of popular slogans and inspiring lies.

Certainly among them there are honest guys who sincerely try to be competent. Theoretically they are really competent, but they frequently have no time and no desire to learn the rules and methods of fighting “under the carpet.” Therefore they will never find room at the top. They are too naive!

Suspicion that the tops of all large hierarchies are already occupied by the incompetent is soaring in the air. The history of human civilization and our own life experience fully confirm these fears. We can be slightly calmed by the fact that this misfortune is natural and inevitable. What is left for us is to hope that incompetent operations of those who are at the top will not cause a disastrous avalanche.

To gather in packs and execute the instructions of the authorities is the natural style of life of many people. The real understanding of the fact that there are no ideal centralized systems comes as a reward for the sufferings of several generations. Having encountered the low efficiency and horrors inside large pyramids, people begin to understand the danger of a totalitarian system. A big pyramid is great danger of great

ruin, and this danger is directly proportional to the size of the structure and degree of centralization.

The principle of Centralization (from the point of view of a Peter Principle):

The bigger the pyramid, the more incompetent officials claim to find themselves on its top.

The Principle of Decentralization (from the point of view of a Peter Principle):

The number of competent chiefs is directly proportional of the number of independent pyramids.

Those who are aware of it try to limit the passion for centralization and the power of big bureaucrats. In some places people have got rid of the monopoly for the truth and try to put an end to any kind of monopolism, protectionism and subordination. In such places, common people and their every day pursuits are looked at with respect and honor.

The strife to balance the rights of people and social systems, irrespective of their size, is made not only for love of freedom. It is the only way to save efficiency, to save bureaucrats from an excess of weight and to get rid of seats of diseases.

The indifferent attitude to the “ripened” pyramids undergoing a crash is not sadism. For mankind as a whole warranty of survival and calmness are large numbers of independent social systems: countries, firms and usual normal families. Among them there will be always enough examples of health and prosperity.

Where there is no understanding of such phenomenon, the passion for centralization will sooner or later be punished. The unification in one super-centralized organism deprives the people of any personal responsibility and creates conditions for spreading illnesses.

If the guys on top have crossed the threshold of competence, they will never find any new attractive goals for consolidation and strengthening their authority. For them there is no authority based on interests. They have to build authority based on force.

“The Cheerful Life” of a large commune can be supported with a whip and arbitrary rule. But the gain of quality and material productivity will be inevitably aimed at zero. Competence does not increase under blows of a whip. Competence strives to get rid of any pressure or it degrades together with its material result, i.e. economy. The invocations of “leaders” and the desperate search for enemies do not help. That has been confirmed many a time!

In the view of the amazed world, both the *USSR* and Yugoslavia fell apart. Czechia and Slovakia divided. Pyramids, inside of which self-sufficient systems with their own interests and purposes have ripened have few chances to survive. And if the top of a large pyramid is rotten through, the framework is loosened, and the advantages of association have lost former attractiveness. The built-in small pyramids readily get rid of unnecessary limitations. Self-sufficiency and own interests are a cause for separation. There are no common purposes. So there are no reasons for embraces of blood relationships of diverse organisms. As soon as there appeared suitable conditions, everything that was considered as a monolith, fell apart and is now irreversible. The disintegration was inevitable. It is natural disintegration!

The debris has touched many. These people have woken up. What a disappointment! Everything that has for many long years fed and lulled crashed. New leaders have emerged immediately. They are showing an accusing finger at parties and people guilty of the disorder: “*They are originators of our misfortune! They are criminals. Catch them!*”

The old times cannot be returned. To assign a large piece of public property is a chancy case. The division has taken place among a handful of lucky dogs, fast and without superfluous publicity, basically among those whose duty was to guard and multiply this property. The rest “were late.” All tasty bits have been eaten up. The majority got ruins, unemployment and a mixed feeling of surprise and disappointment. But now they have a chance to think of how to arrange their own life among new hierarchies which have as if by “miracle”

arisen at the place of the old grandiose pyramid. And here another simple thought can be very useful. To any disorder there is a limit!

The law of Conformity:

Ripened pyramids split up into small-sized pyramids up to a level where there is conformity between the “debris” and the competence of the leaders heading them.

So this is the way the sweet instant of coordination of systems and organizational abilities of their leaders is achieved. The reader will learn about their fate and future a bit later.

Dark Mysteries of the Bureaucrat

The question, “Who rules the world – the stupid and honest or the sly and clever who wind us round the finger,” can often be answered in a very simple way: We are ruled by people acting in their own interests!

The Principle of Action of the Bureaucrat:

The Bureaucrat strives to act only in his own interests.

In fact, most people we consider to be normal do the same. The only difference is that while pursuing their own goals, they try not to harm others. Bureaucrats are not subject to this simple limitation. Getting a personal profit of one ruble, they often tend to cause losses of millions to their “native” system.

The efficiency of his labor is estimated by the Bureaucrat according to this formula (either consciously or intuitively):

The Secret Formula of the Bureaucrat:

Personal efficiency = (Power + Money + Other Pleasures) / Labor

Efficiency can be increased either by moving up the ladder at the cost of wage rate and power or by decreasing labor.

The first technique is favored by the young and ambitious, the second one by the majority.

A bureaucrat can easily enjoy infinitely high efficiency by reducing his work to zero. But this privilege pertains only to high-ranking bureaucrats who are able to hide in their personal office or limousine.

The methods occurring to an average citizen during his painful communication with a bureaucrat are quite unsophisticated: He calls for pity, tries to stir his conscience, mumbles threats.

But It is useless! Bureaucrats are well aware of their rights and strong points. They have studied all the instructions, gained substantial experience and are used to defeating their clients.

We owe to Alexander Solzhenitsyn the three golden rules of the person deprived of freedom: Don't believe. Don't be afraid. Don't plead! So, with this secret formula in mind we can make our conclusions.

The Principle of Reciprocity:

Help the bureaucrat increase his efficiency, make his work easy and pleasant, and he will probably help you.

I do not invite you to give bribes. I only want to stress that your competence and your papers should arise no doubts, and dealing with you should be pleasant and easy. In order to be effective, the bureaucrat has to be self-assured and comfortable. He wants to be the leader and the master of the situation. And do not expect your wit to speed up the process. The effect will be the opposite. To succeed, you need to think and act in accordance with the bureaucrat. He will get his way anyhow and will load you with a part of his own work at the same time. You can resist and never get a positive answer, or you can help and thus achieve your goal.

The cannonball department of a military academy designed (for a large pharmaceutical company) an accurate thermometer for measuring temperature at the end of the digestive tract of experimental rabbits. The device was to undergo governmental testing. The designers asked the Rector of the Academy to speed up the case and personally hand over the models and papers to the Director of the Standards Bureau (too high). Two months later, it turned out that the thermometer never reached the testing department, and the experts had not even heard about it. After one more month, the papers and the test models

were found by the Director of the Standards Bureau, in his own file cabinet.

My sister was going on a business trip to one of the most democratic countries in Western Europe. Knowing that obtaining a visa takes a lot of time, one month before the trip (too early), she gave her passport right to the ambassador of the country (too high). She came after three weeks and found out that the ambassador was on holiday. Nobody knew about her papers. As it soon transpired, the passport was kept in the ambassador’s safe.

The Principle of Similarity of Bureaucrats:

Bureaucrats of every country are alike; they act according to the same laws.

That is why if you want to communicate with bureaucrats more effectively, you should use standard procedures and avoid originality.

Peter’s Principle of Accordance:

The bureaucrats of the lower level of the pyramid are the most competent and effective for the solution of routine tasks.

So, do not waste your time, make use of their service. All your appeals and ideas should be standardized. They should be presented in accordance with their experience and thinking mode.

Do not try to jump over the head of a small bureaucrat. Dealing with his seniors instead of him can surely “put some life” into the process, but it is often of no avail. A small bureaucrat does not like to be ignored, and such impudence is punished.

The top of a large and complex pyramid often suffers from paranoia. The disease is inevitable. It is induced by subordinates who usually act only in their own interests. At first their conscience and desire to take care of the beauty of the large pyramid serve as limiting factors. But these counter checks soon grow weak, and only one remains – Fear.

The Principle of a Pyramid Self-destruction:

The main destroyer of the pyramid is the bureaucrat himself who acts solely in his own interests.

The task of the top is to intimidate their subordinates, to make them act in the interests of the top and in the interests of the system which rarely coincide. In order to solve this evident dilemma, one has to lie and be a consummate user of double standards. One standard is for the bureaucrat, the other for his subordinates. The mind cannot but bifurcate. The game becomes complex and full of paradoxes. Leaders suppress the interests of their subordinates and pursue their own ends under the pressure of public opinion and their seniors.

It is a disgusting job to seek compromise between personal and system interests. The atmosphere of lies and hypocrisy will sooner or later permeate the whole pyramid, leaving no room for fresh ideas and real business.

People carefully mask these passions, but they cannot get rid of them. It is a fundamental characteristic of all centralized systems.

Every successful career person in spite of his “commitment” to a cause is a destroyer. His success can be reduced to the skill of bypassing or penetrating obstacles in his way. In fact, he is fond of these obstacles and makes use of them. Having reached the top, he takes pains to fortify them. It cannot be otherwise. Why should you change the rules of the game where you are the winner? And what can be a more effective means of fighting the opponents?

The feeling of beauty and gracefulness of the large three-cornered structure is known to many from their childhood. But in some people this childhood disease does not disappear with age.

Why do people working in large and spacious assembly shops return to sleep to their cramped little flats and barracks? How come they make the jet fighters of future with their own hands and go to work in an old over-packed bus? Why do most men in peaceful time produce and maintain weapons? Whose interests are these?

These “naive” questions nagged only some inhabitants of the *USSR*. The “heavenward” pyramid decisively dismissed them as dangerous.

The inborn love for Order is common for many people. It helps to cement pyramids. Uniform and glossy looks have a reason to be so popular with functionaries. Outward appearance has its attractions. Looking at their dapper dress, one feels awkward about questioning what they and their offices really do.

Every capable bureaucrat strives to clear his mind from such “dangerous” thoughts and take his due place in the established pyramid. It calls for a lot of training. They build their own small pyramids and acquire skills for manipulating people. It is their Jurassic period of adaptation and maturing, of growing tough scales and camouflage. It is during this period when they equip themselves with a set of techniques which can be compared to a ski pole.

The First Law of the Ski Pole:

The spike of the stick of a bureaucrat looks downwards and hits everyone contradicting his “delicate taste.”

The race is set by those on the very top. They give an example which is immediately copied and repeated with variations depending on the enthusiasm, sadism or the restraint of the “skiers.” Many are hit. And here it is a matter of luck. Some suffer more, some less.

The Law of “Order” Multiplication, or the Second Law of the Ski Pole:

Being hit from above, a diligent bureaucrat inflicts indiscriminate “upbringing” blows on his subordinates.

Some act on their own, others unite into well-knit teams of “skiers.” Corporate interests and shop solidarity present reasons to unite and defend common interests from intrusions from below.

The laws of the ski pole have exceptions. A team of “skiers” can put their poles up and stab the person above them. But it is only temporary. The joyous moment of collegiate victory is quickly over. The arms will grow tired, and the sticks will drop down. The formation of a new hierarchy will begin. The people wielding the poles will turn from pals into rivals and gradually begin competing with each other. They will at-

tack each other “for the sake of the new system.” A sly and resolute chap is sure to emerge. He will be the first to strike his foes quietly and cunningly. And the latter will still consider him their friend, trying to figure out what is going on. And our clever chap at the same time will quickly score his points. It is he who will make the new leader and mount the top of the hierarchy. The laws of the herd will always prevail!

The Secret of Charisma

A skilful orator is a master. Will power and artistry are the basic constituents of his art. They are obvious and known to everyone.

Will power is usually given at birth. Artistry can be learned by observing orators’ techniques and repeating them in front of the mirror. An individual style can be found by taking part in many school and university meetings in one’s early years. But the greatest secret was overheard by me on the beach at a prestigious Black Sea sanatorium. One summer many years ago, I worked there part time as a beach rescue.

A father shared the secrets of his art with his son. Here is the essence of what he said:

“The first technique of the orator is to seemingly ignore and disregard the reaction of the audience at the beginning of your speech. This first and very important stage of ‘mastering’ takes about ten minutes. During this time you must make the audience think and feel the way you do at this moment. There must be no reasons for doubts, no pauses, no shy smiles, no self mockery.

Never show your real goals! You must be able to hide them under a popular slogan or catchword. Only this device and your exalted face should be kept in view.

Then, you must take into account the reaction of the public. It’s worth while looking at the seniors. Their eyes will show you your strong and weak points. The lesser folk are more frank, and their reaction is genuine. They are dumber, but they are your main electorate which should be won over.

One day you will find that you can influence the audience into thinking the way you want them to think that you can 'turn their brains' in the direction you want to. This is the moment of mastering. It is important to preserve it and not to lose your initiative. It means you had better keep away from saying 'highbrow' things, because they might provoke unnecessary questions to which you do not have any answer. It is important for every single utterance to be clear to the people, and it is quite unnecessary for one part of your speech to be coherent with the other. Intonation, drive and emotional impression take the first place. You must make them love your voice and delight in hearing it.

Do not be a wise head. Banal truths will help you to induce the thought in the audience that it is no use contradicting you, that you are always right.

Love for long meetings is a special talent which comes to you only later. It comes as a revelation, as a prize for your persistence and spent time. And your sudden suggestion to vote should be immediately and unanimously answered. It's the easiest way for the audience.

If you cannot persuade, you should intimidate! So, gather up the goods on everyone. It will surely pay.

There will always be smarts who will find contradictions and the hidden sense of your words. Do not react! Most people do not understand their sneers and sarcastic remarks. Let them go hang! You are on this floor. So you are the master, and you are right!

You should remember those who sneered and voted against you. These are your personal enemies. Note their features. These are the features of your future enemies.

For every audience there is the best tone, catchwords and slogans, absolute candor and eagerness to tell about your good intentions. Always look persuasive and illuminate the pageant. With some artistry and a good deal of enthusiasm, you are full of charisma. Just strike the right note and do not lose the initiative. Talk yourself, and let them listen!"

The Principle of Synchronization

In those distant times when all normal clocks were mechanical, clockmakers used the following trick. They put up both clocks for sale and repaired clocks on a thin wall. The sound waves penetrated the wall. The clocks began to “hear” each other. A mechanical link between them was established. Together they were more exact. It was the principle of synchronization in action.

The old trick was good enough until a faulty powerful clock appeared which made all the clocks show the wrong time.

Synchronization is not restricted solely to clocks.

The Principle of Social Synchronization:

People subjected to a powerful synchronization signal tend to think and act uniformly.

This principle is known to everyone. We are all under its control to a greater or lesser extent. Once giving in to the charm of synchronism, we are prone to remain in this captivity for a long time, sometimes till the end of our lives.

This principle is necessary for military high ranks and politicians to strengthen their power. Line training and political classes are primitive but fail safe synchronization techniques.

The danger of the principle of synchronization is not obvious to everyone. The realization comes only with catastrophes and devastation.

There are some good points to this principle, and they are used by talented teachers and musicians. Synchronism helps people to understand and feel music, dancing and the sermons of the preacher.

People communicate by word exchange. Words are the reflection of their thoughts. But how exact is the reflection of what we really think and want to share with others? Maybe our language is more like the chirping of birds and the growling of beasts which carry ten per cent of actual information and ninety per cent of information about sex hormones and body size? Maybe our speech is a way to impose one's power

on the listener and suppress his own thoughts? Maybe it is a game where the winner is the one who talks the most and lets out the least?

People exchange not only words but also moods – sadness, delight, quiet happiness or burning hatred. Some people transfer their mood and feelings on others, and the others are either happy or annoyed about it. It happens regardless of our wish. Synchronization is a natural phenomenon. There is nothing to be done about it, and it exerts a formidable influence on our life and behavior. Sometimes people forget that each of them has the right of a natural rhythm and his own “melody” inside.

The principle of synchronization presents no danger to those who are indifferent to pyramids and marching in a line. They manage to preserve their own “tune,” but they are in for another sort of danger. They might become “superfluous” links in their native system. Synchronism followers hate them. Fascists and communists proved this many times. Millions of people died only because they were too tough to synchronize. They had their own ideas and “tunes” and were killed for that, because the synchronists hoped to destroy diversity which poses a threat to a totalitarian system.

Anyhow, everyone has to choose: either to give in to the “charm” of synchronism or to preserve his own “tune.”

To give in means to strengthen the system and possibly to make a contribution to a global mistake under the spell of the “guaranteed” carrot.

To keep one’s own “tune” is to build on the principle of decentralization in one’s own mind and to get a chance of finding one more way of survival.

To win a cruel war, people need harsh centralization and synchronism. To gain prosperity on the primitive market they the opposite, extreme decentralization and diversification of actions. That is why it is easy to deduce that to gain a definite purpose we need to attain an optimal way and level of synchronism. But in the times of severe crisis of government and economy your own “vegetable garden” and your own “tune” are better than senseless attempts to “sing in choir.”

Secrets and Paradoxes of Power

It is easy to be a rescue on a beach where each of your clients behaves soberly and sensibly or cannot drown in principle. If you talk to such people, you can uncover many “secret” principles of bureaucracy. Some are comical. Some are blood freezing.

“Want to know how I make sure that my collective farms don’t run out of hands?” a reputable head of the farm asks his reputable companion. “I keep a check on every shop. They all must have lots of cheap alcohol. My men are always a bit wet, and they always know they are guilty and I am right. But the most important thing is they breed feeble-minded children. None of them can enter a university. They can’t find any job in the city. They will be my workers, and from their childhood years they know very well who is the master of my land!”

To keep his people away from self-sufficiency is a favorite technique of every good master. His chief aim is power!

Two old friends have settled themselves beside my lookout – a deck chair and umbrella at the edge of the pier. They seem to have reached the end of their career and chess-playing skill. They are sure of themselves and often like to play a philosopher in public. They have had enough of each other as chess partners, but they still want new impressions from the game. One of them makes a gesture, inviting me to play with him. The other one made himself comfortable and began his monologue.

“Do you know where is hidden the success of every career? You shouldn’t be too clever! It’s quite enough to be nimble, modest and concerned with work. And no sense of humor! No laughter! There is nothing more insulting to people than laughter. Sarcasm and meaningful smiles are a luxury. Only those who have reached the very top can afford them, in their very private company, or their kids.

People strive for power on their own or in pairs. I’ve never seen a united group of three power lovers. These are only bands. They have no high aims. Just trifles. Colleagues and

building engineers who gather up to plunder state money.
Crooks!

You should never tell people about things they wouldn't like to hear! Even if it is evident to everyone. Your words are likely to reach them distorted. Your prank will be remembered, spiced up with poison, used with your name, and you will become guilty. That's the way friends turn into foes. Everything is okay, they see each other, shake hands, but the distance between them grows. People start fearing and hating you. So if you want to make a career, never say bad things about people! Only good ones!

I told him something nice about his boss, and he will be happy to give him the good news. He will also know that I never speak ill of people. A couple of years, and the humble fellow turns into a favorite!

Your abilities to understand people's motives and interests must be well hidden. If someone realizes you know something unflattering about him, he is sure to avoid you and to do you harm in secret. He will hate you. Sooner or later he will find a way to throw you over the bridge. You are a dangerous witness. It makes enemies even out of blood brothers and old friends. The boss will simply try to crush his subordinate, if the latter comes upon some discrediting evidence. There are lots of examples. A person is wronged, and he doesn't even know why. Trouble follows trouble, and he is ignorant of the reason. He will guess it later, when he realizes his mistake. Sometimes only years later.

You will never know how to command until you learn to obey. Normal independent people do not like rudeness. But there are also others who are actually born to be kicked. The more kicks they get, the less money you have to pay them. They do not want it. A paradox! But all our plants and collective farms work on this principle. And they do work (It was summer 1984).

Of course, it is outrageous. It is better when people themselves see what should be done. You have got to be able to lead them to this.

What do clever women do? They never badger. They tell men about their problems softly and cheerfully. And no man will refuse to help them.

It is the same with every normal boss. He will set a task, give the right direction and create the conditions. And the people will do everything themselves. Do not bother with small things, just check the result. And if you want to know how they are progressing, just go there and have a look yourself. If you like their jobs, praise them, but never scold them. Just keep silent. The people will understand everything themselves. Do not breed fear and alcoholism.

Ruling people is an ancient art. Poison, lies and violence are its usual tools, but they are already out of fashion. The world has changed. You can achieve more without this filth.

Well, there are some vivid personalities. For them the wish to command others can be more important than decency and common sense. They are not capable of judging the results of their rule.

Strange isn't it? Huge power is concentrated in the hands of one man. Go and create! But no. The great system is turned into a fool's toy. He does not know how to improve it, but he knows well how to rape it. And the more power he has, the more destruction and violence there is. A terrible paradox! No progress of science and art. It is naive to expect any change in quality from this system. In the center of attention there is just the maniac with his greed for power. He does not need a clever people. He needs nail people, horse people and whip people."

"And anarchy is better?" my chess partner chipped in. "You are right when you say that harness should be kind. But it must be firm! Otherwise how will you keep a rein on your people? By persuasion?"

"No, our people are not ready for democracy. If there is no strict law system, what remains for them? Just the whip and arbitrary rule!"

Law of Efficiency

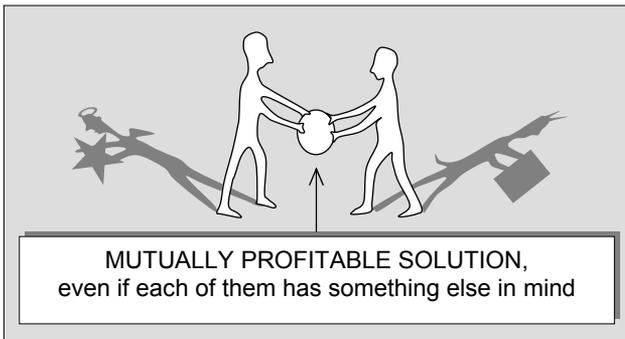
Many systems are based on the principle of hierarchy. A pyramid is a symbol of such systems.

People who grew up in strict hierarchies usually do not have any other way of self-development except for striving to reach the top. But those who are on top considerably hold these wishes in check. It is explained not by their own interests but by the “incompetence” of the inferiors. The superiors say so, but they are glad to use the ideas and talents of their inferiors to their own ends. They have no talents of their own.

Suppression of any uncontrolled initiative is a way of preserving power and self-protection for incompetent leaders. What is seen as a threat must be destroyed. Their motto is simple and cynical: “Destroy what others did and build your own!” They are not confused by the fact that they strengthen their power at the cost of efficiency loss in the whole system: “I don’t care, my interests are more important!”

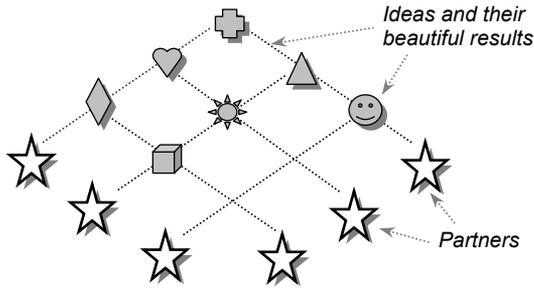
Is there another way?

If partners make advances to each other, they can meet halfway and find a solution suitable and profitable for both:

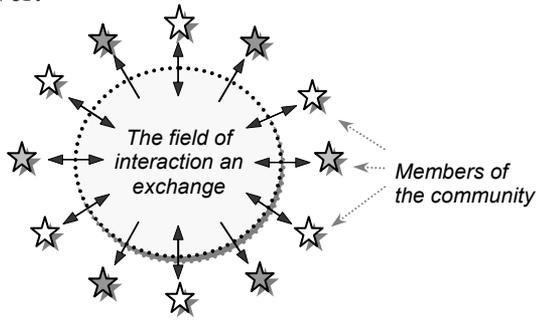


In comparison with a quarrel it looks like double success!

When several partners and their ideas interact, there can be even more useful results:



Free interaction of many people looks even more attractive. Like a flower:



Most people give and take. There are donors who give more, and there are sly chaps who only take. Nothing new, just like in any society!

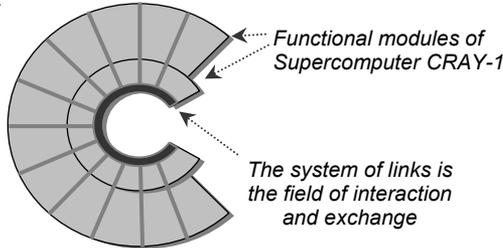
But it should be born in mind that in the end, the field of interaction and exchange is beneficial to everyone. It gives the opportunity to use the labor and talents of many people and provides them in exchange with vitamins, energy and information they need for life and development.

It is not relevant how we call this field: either "cultural environment" or "free market" or "legal democratic society." Of more importance is its actual existence and level of development, because the possibility of free exchange of ideas and products of labor increases efficiency and stimulates everyone's development!

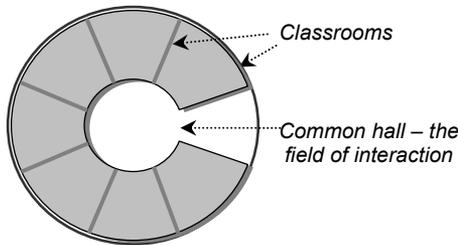
Designing his supercomputer Cray-1, the American, *Seymour Cray*, hardly had free market, bureaucrats and pyramids in mind. His task was not to build a system where one part is

subordinated to another, but to create a super efficient computing environment from the elements available in the late 1970s.

And he did it! And the structure of Cray-1 was astonishingly flower-like!



Working at his project at a village school, the German architect *Gunter Benesch* could hardly be thinking of supercomputers and flowers. He was more interested in people's living environment. His aim was to unite people and create better conditions for communication and friendship without contradicting the traditional school system where pupils are divided into isolated groups. He decided to eliminate this drawback and placed classrooms around a spacious hall. And the result also looked like a flower:



If you want to improve the interaction of system parts and at the same time minimize the construction you will inevitably come to a flowerlike structure. And the field of exchange and interaction is likely to be the center.

There are plenty of examples dating back to early history.

The wheel is a flower. The hub is the pivot and the field of interaction for the spokes.

The best reciprocating aircraft engines at the beginning of the twentieth century had the shape of a star (or a chamomile).

This construction was based on the wish to get the most power from the least quantity of metal.

The turbine is one of the most efficient machines known to people. And it is not by chance that water, steam and gas turbines have a flowerlike shape. The axis of the turbine is the stem of a flower. It is the place of concentration of mechanical energy and the field of interaction of the many blades which give and take energy.

The nuclear bomb and the reactor for thermonuclear synthesis are structures of the same type. They also need principles of concentration and interactions within the compact zone of reaction.

People attend pubs not only for a glass of beer. They need their friends' smiles and personal contact. That is also a kind of exchange and interaction. It is not for nothing that some outstanding inventors are fond of telling again and again that they have brought the wonderful invention from the bar!

Internet is often compared to a cobweb but, in fact, it is a big flowerbed the soil of which is permeated with a web of connections.

Strange as it may seem, a structure resembling a flower may be found in many structures. It is not a chance coincidence and not a simple geometrical form. It is a law that makes many effective systems and mechanism look alike.

The Principle of the Flower is the Law of Effectiveness

That is why meditating over your project try to apply to it the *Principle of the Flower*. Probably you'll make your own discovery! Maybe you've already made it and only now you've realized how much it resembles a flower.

Don't be surprised. Laws exist and may act independently and without our understanding their essence.

But how is it possible to turn a rigid, incapable of development bureaucratic pyramid into a flower?

There are two answers to this difficult question:

- *“To flatten” the top of the pyramid, to make it a field of exchange and interaction and not to preserve it as a reserve of parasites only capable to hamper.*
- *To ignore the top and assiduously cultivate the common field of exchange and interaction.*

The choice depends not only on taste but mostly on common sense and real possibilities.

Because there is still another answer – to strengthen the hierarchy hoping to find oneself on top and regularly receive a tasty bone for faithful service.

The Life of Systems Simple and Complicated

A plane, a car and your washing machine are technical systems. They are intended to fulfill your purposes according to the scheme:

You & your aim → **technical system as a means** → **result.**

Systems themselves are made up of a set of subsystems and elements. Therefore technical systems as well as social can be presented as a hierarchy of elements and principles.

Any system lives till its key elements, links or parts work, satisfy the upper system and do not threaten its interests. A plane is usually used until there is no danger that one of its subsystems will get out of order during the flight. Cars are used less reasonably up to completely wearing out of one of their important parts.

It is considered that a machine is constructed in the right way if all its parts wear out and break down simultaneously. In this case it is not necessary to throw out the subsystems which are in good order. But let the steering wheel and the brakes get out of order a bit later! As a matter of fact, it really happens this way, separate elements break down.

Perfection of the system also happens irregularly due to more or less radical improvements of separate mechanisms.

Technical systems serve people, and people try to make them more effective, unnoticeable and harmless. That is why from the point of view of Homo Sapiens, familiar with eco-

logical problems **an ideal technical system is one which is not present, but its functions are fulfilled**¹.

This paradoxical definition belongs to the Theory of Solving Inventive Problems and has profound sense. It points at the only reasonable direction of development which corresponds to the interests of society in general.

But many people prefer big and durable machines as a reliable guarantee of renewing the function they need. But the general tendency is different. Machines become more effective, but their size and weight decrease. Gradually they become more and more like their ideal, which in its turn, also changes. It is like a mirage stepping back until it sets against natural and social limits. Only now can we say in a whisper that it cannot be done better. It is the limit of course for the given conditions and ideas of the ideal.

Limits upset but stimulate the search of new possibilities and openings. Any discovery is a window in a wall of limitations, through which new “ideal systems” are visible, but not new limits. The dreams of scientists and engineers break against these limits, as well as those of politicians.

Social processes are not less dramatic than natural cataclysms. The development of any person and his businesses can be slow or stop under the pressure of social restrictions. Quite often it is the result of deliberate braking or controversial management of those who have power. And sometimes we do not know where to look for the reason. What is this, interests or incompetence?

More often it is a fragrant blend of both!

It is more pleasant for a scientist and an inventor to deal with natural impediments – natural limits, technical and physical contradictions. **Elimination of contradictions is in itself an INVENTION, and widening the visual borders of the possible is a discovery.**

Biological systems are the standard composition of muscles for motion, the system of digestion, for power supply. The

¹ Creativity as a science by *Genrich Altshuller*, Moscow, 1979.

nervous system with eyes and brains is for driving and management. Teeth and horns, are they for defense or for attack?

Biological systems differ from technical systems by their self-sufficiency. They have an aim of their own – to survive and leave posterity.

Technical systems depend on the man who creates them, serves and supplies with energy. More perfect systems are less dependable. Striving for an ideal makes people create systems working without them. More often we can hear, “A machine must make itself and serve itself. A student must teach himself.”

Nowadays we don’t want to argue with those who consider that the machine will never learn to think and multiply itself. After Casparov had lost a chess game to the computer, these arguments remained in the past forever.

The signs of approaching artificial intellect appeared long ago. The assemblage of microcircuits is made by microcircuits. Many of such machines have sight and are able to learn. When two thresholds – the ability of machines to think and the ability to multiply itself are overcome, we’ll find ourselves in a new material world and new civilization.

The First Law of Self-Sufficiency:

Systems develop in the direction of self-sufficiency.

Corollary 1. *Having obtained the ability to reproduce itself and think, the system finds its own goals and strives to become independent from the upper system and the surroundings where it has appeared.*

The Biblical legend of ousting Adam and Eva from Paradise proves it. The conflict of two thinking creatures with the **Upper System** appeared after this couple had found out its self-sufficiency – the ability to multiply without the participation of the Creator.

Let’s fasten our thankful eyes on the **Upper System**. Adam and Eva were not taken to pieces. They were given the Promising Land! Perhaps one day people will also have to part

with their own creations sending them to other planets, following the principle: **live yourself and let others live.**

There are enough convincing confirmations of this law and its first corollary in society which itself is also a system. Many specialists, having realized their interests and opportunities, find their own business and achieve splendid results.

Corollary 2: *Having found out the property of self-sufficiency of the subordinated systems, the upper system strives to keep them under control!*

There are a lot of such examples in society. Suffice it to mention some typical conflicting pairs:

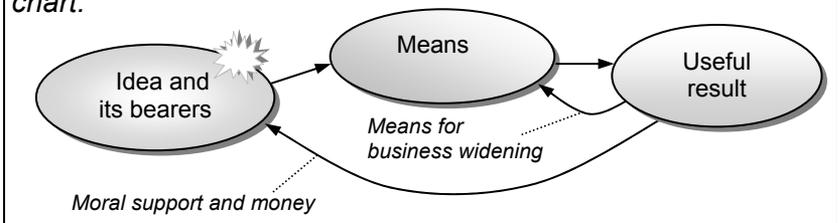
**CENTRE↔PROVINCE, BOSS↔SUBORDINATE,
PARENTS↔CHILDREN.**

New tasks bring together and involve into cooperation scientists and engineers of different specialties. The exchange of knowledge and technology leads to scientific and technological discoveries. The process of increasing connections between spheres of knowledge is similar to the growth of neuron links in the child's brain.

Technologies summarize, join and give birth to new technologies. Hierarchical levels in technique and social stratum break and mix. Computers become microcomputers and are used as elements of systems. And such an element as lubricant has become a system, "healing up" scratches on the elements rubbing against each other.

The Second Law of Self-Sufficiency or the Law of the Hierarchies Collapse:

The space of knowledge and rights are getting wider. Resources of substances and energy become more accessible. Vertical structures (hierarchies) are replaced by a horizontal chart:



Corollary 1: *A modest aim creates a modest result.*

Corollary 2: *A major aim requires major sacrifices and greater risk but can give incomparably greater results.*

The sizes and efficiency of the link **means** depend on the wealth of individual people and their energy. The more means active bearers of the idea initially have, the more democratic and developed is the market, the quicker the idea is developed, and a useful result is achieved.

Corollary 3. *The less people depend on hierarchy, the easier they achieve self-sufficiency and success.*

That’s why one should not regard the loss of “a profitable position” in a big pyramid as a tragedy. He can look at it differently. It is a chance to show talent, find independence and a more reliable position in society.

On the other hand, the problem of any self-sufficient system is not only to resist external pressure, but also to cope with internal problems. There are alien parasites or degrading elements inside the system.

It is sad, but a surgeon has to remove dying off tissues and a mechanic has to throw away worn out parts of machines. An immune system of a living organism finds alien tissue, cancer cells, and strives to destroy them. Under the visible envelope of a healthy organism a constant struggle is going on. Doctors get used to it and do not find it tragic.

The Law of Balance:

Balance is reached in the struggle of opposite tendencies
DESTRUCTION ↔ CREATION

Corollary: *Excess of activity of one of the conflicting sides is a disease.*

Certainly, infection and cancerous tumors are sources of a disease, but surplus function of the immune system – allergy or rejection of tissue after their transplantation are also dangerous processes. The art of the experienced doctor and engineer often reveals itself in the fact that their cautious interference does not do the system any harm. They only eliminate contradictions and thoroughly test their innovations on the threat of catastrophic consequences.

But what about progress? Where are revolutionary transformations and qualitative leaps?

It is the inventor's lot. He is an enemy of hierarchy and borders. He is their potential ruiner. That is why having undertaken this ungrateful work, do not get surprised that the system and its parts will see threat for them and you will find enemies.

The conflict of interests can exist not only among rivals or partners. It is necessary to keep the balance of interests and borders for maintaining stable relations between the parts of the whole system. Muscles and bones of our body should not suffer from excess weight or destructive activities of each other.

If people are put into a rigid pyramid, the advance of their ideas depends on the competence and good will of the upper strata of the hierarchy. Inventors often experience the bitterness of an inadequate response when they collide with incompetence or indifference of the upper system. They should not look for the reason in themselves. It is a natural property of most hierarchies. Officers are busy making their own nests and fulfilling directives from above. The innovative activities of any of them are perceived by the colleagues and leaders as a threat. The structure of a pyramid presupposes the appearance of new ideas and signals of management only at the top. Most of the ideas from lower layers of a strong hierarchy are doomed to ridicule and failure. They should die. Authors do not have means and rights for the realization of their ideas. That is why those who want to be inventors in a poor country must be rich!

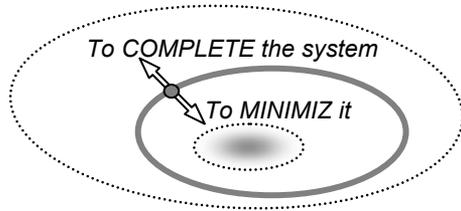
Big money is an invitation card to a high level of the hierarchy. That is why having become rich, they will lose interest to problems of "low level" and radical changes. Now they have other problems. The circle is closed!

There is a way out of "the vicious circle." It is the free market and the real right on intellectual property.

We were often told that only what is new and what grows can be effective. The use of old machines and materials does

not look prestigious. But nature and market laws are equally ruthless to the old and to the new. It is not important how many resources were used for making a new machine and by how many patents its structure and product were defended. In order to survive it must be just effective.

Technical innovations and the growth of production look quite decent, and the decrease of expenses on production and dismissal of employees are a sad view. In one case, there is a wish to build up the system, in the other, a desire to minimize it.



TO COMPLETE means to expand and open new possibilities. To make an attempt to get on a new quality level.

TO MINIMIZE means to get rid of unnecessary elements and connections and obtain maximum efficiency.

In any healthy system, this duet of inconsistent principles works. But only together they are capable to make the system effective and beautiful.

The duet of these contradictory principles acts in any healthy system. But only together can they make the system beautiful and effective.

One can look for luck and expect it all life long ignoring the possibilities nearby. But if the possibilities do exist, how are we to find and use them?

There are two strategic principles. One of them is a persistent search of means for the realization of planned aims. The second one is the search of the aim which one can reach thanks to the resources which are available.

Both principles do not exclude, but supplement each other! Only very courageous people are capable of using the first principle in a pure way. More often, the aim suits the possibilities available, and then small-sized missing details are added.

My friend *Alexander T.* is a young programmer. He had been dreaming about a supercomputer of his own but when he

wanted to buy it, he had money only for a 17-inch monitor. The purchase of the base block was postponed for an uncertain time.

I agree that the prices of monitors fall down more slowly than those of electronic filling of the base block, so he didn't waste his money. But you will agree that a simple and working system is better than one of its parts!

Each of us happened to choose between modest completeness and high-quality incompleteness in exchange for pure money or even ourselves. Feelings strive for quality, the mind, for completeness. Many people will agree that "the best" decision is the one lying in between the two extremes. The luckiest decision belongs to those who are able to foresee the development of such a system or those who are just lucky – those have success and money who chose business and the company of partners a year or twenty years ago.

A piece of land in a good place is an excellent reason for business, building a nice house, settling down with a wife and a bunch of happy kids. This desire is recorded in the subconsciousness of any normal person. But if you decide to build a luxurious palace and give it everything, you won't have enough strength for a bunch of happy kids. The main system contradiction – *QUALITY AGAINST COMPLETENESS* is now at work.

And on the contrary! The aspiration for completeness of the system limits the quality of its separate parts

The Law of Limited Resources:

With poor resources, the completeness of the system is achieved in exchange of the low quality of its elements.

The sadness of understanding this fact is partially compensated by the gladness of achieving completeness, which gives birth to new quality. That was the way the first plane took off and the first automobile began to move. And the most wonderful thing is that there was an odd fellow who bought that plane and that automobile!

Let's speak about beauty of technical systems.

I remember my research paper on radio receivers. We students of one group of the radiotechnic department were drawing our projects together in the drawing hall. *George Ch.* drew a box the size of a small suitcase and decorated it with a small loud speaker in the middle, the size of the bottom of a glass. I asked why such a small loud speaker needed such a big box? “For the powerful battery,” he answered trying not to interfere with the creative burst of his mind.

At that time I didn't argue, but now I know for sure that such cars like *Rolls-Royce* or *Hummer* can't lean on bicycle wheels!

Looking at a famous sportsman or an actor at his hour of triumph, we feel they are like systems, doing well. We not always understand why, but we see that it's beautiful. By intuition we know that the law of beauty is carried out at this moment.

We also notice ugly things. But why don't we like them? We can't always say. Perhaps the reason is that they contradict our ideal of **conformity** and **coordination**? We understand that the parts of a system must work in harmony. Gear cogs shouldn't break one another, and the automobiles shouldn't crash each other on crossroads. It's the conditions of correct work of any mechanism and any system. The fewer frictions and conflicts in a system, the more beautiful and more effective it is.

Let's pay attention to one more law.

The Sad Law of Life:

The creation of the new is accompanied by the ruining of the old.

In other words, to build something new one has to ruin something. The mining industry ruins the landscape by its open-cast mines and excavation. Burning coal and petroleum contaminate the atmosphere and water with sulfuric acid and nitrogen compounds. You'll also agree with the law of inevitable evil, when you fill your car with gas or when you give a wonderful juicy apple to a child with strong baby teeth.

Looking at advertising prospects of leaders of the motor-car industry with a description of their best production, we find signs of an increase not only of comfort and reliability.

Controllability rises!

Clever systems control of not everything but many things. They control the car's position on the road and rule its every wheel. Such systems are necessary not only for limiting ambitions and keeping safety. They help to manage a powerful engine, correct the driver's mistakes and drive as fast as possible from the point of view of the program hidden in the electric "brain" of the car.

When the smoke after "The Storm in the Desert" had cleared away, we found out about old aviation bombs supplied with the newest systems of prompting. "Silly" bombs became exact weapons because they were provided with "a nervous system" of their own. They were made obedient.

The Principle of Increase of Controllability:

The perfection of technical systems is accompanied by the increase of their controllability.

Corollary 1: The quality of a system can be improved at the expense of the improvement of a control system.

It seems quite obvious. But hardly could be obvious the turning of old bombs into the modern weapon. The possibility to return to life an old lathe is not always obvious even if it is provided with a box with a new control system or just suitable work.

Every system has its purpose and aim, which are reached in the best way, if the "body" of the system and its "mind" are coordinated.

A stone on the ground and a man standing nearby look inoffensive. But a man with a stone in his hand is a dangerous system. It is a soldier or a hunter. His effectiveness is maximum if the shape and the weight of the stone suits his ability and strength.

Corollary 2: The system effectiveness is maximal, if its executive part is coordinated with its control system.

It's not surprising that the quality of our work is higher if we see its results. But a bureaucrat regards the increase of controllability within decentralization of the control system as a paradox, as the center can lose direction if its signal turns out senseless for the subsystem. But if an oversystem supplies material resources, energy and valuable information of what and how should be done, its legal demands are usually fulfilled promptly and effectively. And the oversystem gets free from the routine of detailed control and management of all elements of a huge system.

Corollary 3: *The quality and controllability of systems increase thanks to decentralization of management and the feedback searching the result, not the process.*

A man is also made in the same way. For each organ there is its own section in the brain, its own neuron net. Consciousness controls much, but it usually cannot interfere with the detailed management of work of inner organs. The best occupation, which is only possible to invent for the man's consciousness, is shaping the purpose, finding the ways of its fulfillment and ... enjoying its result!

Meditating over the philosophical question of what to eat to lose weight, we sooner or later arrive at the conclusion that food is not only a source of energy and building material. Food is a source of information!

Unusual large burdocks and other herbs can be seen in the places where rare chemical elements get in. This phenomenon is often connected with the falling out of meteoric rains and radioactive isotopes.

Small amounts of new substances or energies of a "new kind" act like an effective fertilizer. The plants answer by an accelerated growth.

We also feel ourselves better if we eat fruit and fish from other parts of the world and sometimes bask in the sun far away from our place.

Dim light and soil with a poor set of substances also do not promote health and inspire development.

The same can be said about information. Rare information and unusual events give us acute impressions and ideas just the same as rare fruit gives us missing vitamins. In this sense rare information and rare substances are similar and are equally useful. Their addition gives rise to new quality.

The Law of a Quality Leap:

A new element, link or algorithm, built-in in an “old” system can radically improve its quality.

Otherwise what is the sense in using new airlines, medicines and software?

Indeed, animate nature is inclined to variety. Its movement and chaos of intermixing of substances, people and their more or less genius ideas give birth to new viable combinations. The new links improve the exchange of substances and precision of management. The new information gives birth to new structures and fills in “old” ones with new quality.

A lot of people understand it intuitively. Those who are more resolute, try to boost the process of appearance of new quality and even of new life through radical means, for example, electrical arc or explosive. That’s how they see the way to “change the system.” Naive, they do not understand that their activities do harm not to the system, but to people who aren’t usually connected with key links to the system. Radical actions of resolute individuals rather strengthen then the “rotten” system, boosting its immunity.

Caution to Innovators:

Do not try to model processes of the origin of life with the help of a mixer, electrical sparks and explosives. Please, use more delicate tools!

Wonderful fruits grow thanks to fertile soil. But they rise not by themselves; they grow from the **grains of quality!** The grains of quality are **points of growth** and structural transformation. These are grains of genius ideas. It’s the will and art of those who are ready to realize them. It’s the place that is worth investing one’s ideas and money.

It was noticed long ago. Money strives for money; intellect aspires to intellect and freedom. It's only the consequence of the “mysterious” law of concentration.

The Law of Quality Concentration:

The growth and concentration of quality takes place in favorable surroundings around the GRAINS of QUALITY.

It's a token that the owners of money and talents are attracted by points of growth and stable favorable environment where there are conditions for accumulation and multiplication of riches and knowledge.

It was noticed long ago that the new is not born on an empty place and the old is not necessarily an enemy for the new idea. Between the old and new there exist not only conflicts. Between them there is a productive connection.

The Law of Succession:

New systems are created from old elements. The new elements are built in old systems.

I was a student twenty years ago. My friends and I were surprised by the backwardness of the element basis of radar-tracking systems which we had to study at the time of the cold war. Now it does not seem as a paradox. The creation of complex systems takes more time than the creation of separate elements. Another thing seems surprising now. Why were there so few silicon chips among out-of-date electron tubes?

Incompetence or conservatism of the manufacturers?
Someone's interests? Incompetence of the military officers?
Frozenness with fear in expectation of a nuclear war?

There is no simple answer!

The active optimists more often achieve success than the gloomy skeptics. The optimists spend the energy for finding resorts of overcoming the hindrances, instead of justifying passivity.

The Law of Optimism:

There are more ideas capable to solve a problem, than problems.

The recipe of the skeptics and conservatives states: the best expedient to get rid of a deficiency of an idea is to get rid of the idea.

It is possible to refuse an idea together with its deficiencies, and it is possible to find a second idea which will remove the deficiency of the first. To refuse a problem or to solve a problem is a matter of taste, determination and diligence. Not all people have the courage and power to investigate the hindrances. They simply do not know that an unexpectedly simple solution can be a wonderful reward.

The Steam Engine Is 2000 Years Old

The archaeologists are rather skeptical about the modern inventions. They find the sources for the modern ideas and projects in the past and know for sure that the new comes from the forgotten old.

The life on the Mediterranean shore has been in full swing for the last 60 centuries. Two thousand years ago there were no fewer ships in its caressing waters than people in *Times Square* celebrating the New Year 2000. That's why the bottom of the sea is covered with the flotsam of the ancient ships, amphorae, antique anchors, coins and unique navigation devices.

The shores are dotted not only with the fragments of earthenware crockery. Lucky men find there ancient hidden treasures which contain not only golden coins and adornments but also some things which people wouldn't mind inventing once again. That's why the historians correctly think that our life is as interesting as the life of the authors of *Kama Sutra*.

However, there were some difficulties. People had to build the Egyptian pyramids and the Great Chinese wall. But do many things we built yesterday have a greater sense and a greater value today?

In the vicinity of Baghdad in an excavated tomb, the archaeologists found among the adornments a clay jug with a copper pipe and an iron nail inside. That subject was immedi-

ately identified as a galvanic cell. This means that the current source was invented 2000 years ago.

Animal lovers have the right to dispute this fact. The cat was the discoverer of electricity! In order to get the static electricity people used to rub a piece of amber against the cat fur in the first millennium B.C..

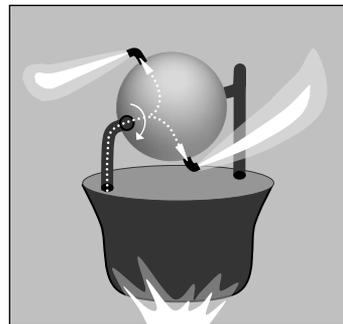
A bit later the frogs began to investigate electricity. *Luigi Galvani*, sitting on the balcony of his house, used to look in wide-eyed astonishment at the cramps of the frogs’ legs attached to the iron hand-rail. He touched the legs with a silver fork. That’s why the modern electric battery was named after him – “a galvanic cell.”

The mysterious drawings of the animals of a tremendous size which cover the *Nasca* plateau were discovered from the plane. It’s impossible to see these drawings from the ground and for a long time it has been a riddle how they were made. The archaeologists did a great job and found some indirect proofs that a man on an air balloon had directed the work. It was a difficult task for the workers to hear his voice and understand his signs, that’s why the drawings have some inaccuracy.

Geron the Alexandrian invented the steam machine in the first century A.D. The sphere, attached to the cover of the steam copper, revolved on its axis very fast. The two steam streams made the sphere rotate. The steam got inside the sphere through the pipe on which the sphere leant with one side.

At the same time, the Greeks used to drag their ships on trolleys over the *Corinth* isthmus. It was a hard job, but it cut the way and made it less dangerous for those who traveled to Athens from west and back.

The road through the isthmus was 10 km. long and was paved with lime plates with the deepening for wheels. It was in use for 1500 years!



Did *Geron the Alexandrian* know about it? This road had been built long before his birth and stopped functioning centuries after his death. The steam machine was really in great demand in that place!

The quality of the numerous inventions of *Geron* and the clarity of his thoughts still astonish the historians². The main parts of the steam machine – the steam copper, the piston mechanism and the lock valve – were at his disposal. He had to make the only step! Why didn't he make it?

As a matter of fact, there are two questions:

1. *Could Geron make a considerably powerful steam machine?*

2. *Could this machine be so effective to compete with draught cattle and slaves who coped successfully with the numerous grand projects of that time?*

Geron had invented the piston pump, but there is no evidence that he carried out his project. At that time there was no acceptable technology to create a perfectly adjusted pair **cylinder – piston**. People have learnt to make this key aggregate of the steam engine and the engine of internal combustion considerably not long ago. And it could hardly be invented before the advent of the artillery cannon. It was really possible to use for the shooting the cylindrical holes and shells, which were made with the lesser degree of accuracy. So, there's no wonder that the steam engine appeared after the invention of the artillery cannons and effective piston pumps. And only there appropriate technologies were developed. Only there were there enough coal and a working railway. Only there could the weak steam machine compete with human power to push the trolleys with coal and ore. And only there had the inventors the possibility and the right to demonstrate their "odd things."

² *ANCIENT INVENTIONS* by Peter James and Nick Thorpe. – New York: Ballantine Books, 1994.

Thus:

The 12 – 16 centuries – the advent and spreading of artillery.

The 16 – 17 centuries – the advent and a widespread use of piston pumps to pump the water out of mines and to put out a city fire.

The 17 – 18 centuries – the advent and a widespread development of steam machines made on the basis of the piston mechanism.

The accurate construction of artillery cannons and shells increased the firing range. The accurate adjustment of cylinder and piston made the pump's work more effective. And one day, a talented mechanic had a brain-wave! The pump pushes the water but it can be **contrary!** The water, or to be quite exact, the steam can make the pump work!

That's why there will be no wonder if we find the evidence of the fact that the first steam engine, as well as the internal combustion engine, is simply an altered piston pump!

- *The new systems come from the “old” elements!*
- *Accuracy considerably increases the quality of the system.*
- *Technical innovations appear when they are in need, but they develop only when there are appropriate conditions.*
- *New systems appear as attractive as capricious toys and then turn into effective and inconspicuous “working horses.”*
- *Knowledge is accumulated for centuries together with the objects of material culture.*
- *It is impossible to reach perfection with one leap only!*

The banal truth! It is strange that this truth can explain the development of civilization and answer the “easy” question, why people in some countries can make cars and planes, but people in other countries cannot. Even if they want to very much.

The inventors of weapons, luxurious adornments and religious attributes used the most progressive inventive thought to demonstrate their “wonders.” Is the situation not the same today? Probably, a little, but in the time of *Geron's* activity, his

inventions were used only in temples and palaces. Only there he could find the connoisseurs of his talent and the money to repay his efforts.

On the other hand, *Geron* was too far from the problems of merchants, navigators and their slaves. Besides, he could hardly want to help them.

A person who can resolve a difficult problem, doesn't know about it, and if he knows, he doesn't want to resolve it. These things used to happen and will happen more than once. Is it worth wondering?

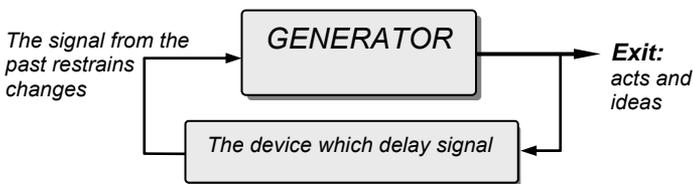
The Principle of Stability

In places, where the means of information are well developed and the family bonds are not very strong, the value of old men is in proportion to the value of their property. Otherwise, what's the principal difference between two old men, if one of them sleeps in a cardboard box and the other in a spacious bedroom of his own house?

But in places where there is no culture in written form or any other means of information storage, the old men's point of view is highly evaluated. They are not only the source of information about the past, they can be used as prophets.

This is the state of things in the human world. But what about the machines? Do they really need information about their past?

Radio engineers know how to stabilize electric oscillations with the help of a signal from outside. This could be a detained signal of the generator itself. This signal provides the generator with the information about how it used to work in the past and makes it more stable and predicted.



The force of the effect of stabilization is in direct proportion to the time of the detention and the power of the signal of the reverse connection.

But what is good for fine instruments is on the other hand bad for the development and changes. Very often the “wise” and iron hand of a parent or of “the father of the nation,” which nips the “foolishness” in the bud, is an obstacle to the attempts of free creative work.

As soon as we are seventeen, we understand that it’s high time to leave the parents’ house. It’s necessary to keep within limits. Parents’ main task is to protect the children, but the moment comes, and the nappies are getting too tight. The majority of children leave the parents’ house. Someone goes to the university, to the army or becomes a hired worker. The survival in the natural environment is more dangerous but more prospective than the long fight against the parents for the right to think independently. It’s hard for the old men to formulate their wisdom solidly and clearly. They are able to impose their way of thinking, but they can’t produce new ideas and new information units. So, it’s better to stay away from the old men. No dependence is the best variant of dependence.

This is the way the young think and they are 95% right.

What about the other 5%? The lucky men, who get from the old men the right signal at the right moment. We all appreciate a friendly and a not-imposed piece of advice from our inner voice. A piece of advice from our own “pocket” old man who can keep silent and doesn’t pay attention to our “foolishness” and who opens his mouth only when we really need it. And if father or your elder brother gives you a good piece of advice, you are grateful to him and love him for that.

It’s really great to find in the grandpa’s old trunk a philosophic reasoning, some love letters or an old pirate map, which explains how to find the hidden treasure. Isn’t it tempting? That’s why we should appreciate our old men.

Parents act wisely if they allow their children to do innocent foolishness. Children act wisely if they find some wisdom in the “delirium” of their old parents.

We know for sure that not the “chewed” information with some ideological “dressing” means much, but the exactly reproduced facts. The old men may have an influence over us by enumerating some facts only if they deserve our trust by the exact reproduction of information concerning these facts.

The Principle of Stability:

Only a clear signal received from the past without any distortion may be the source of stability of a system.

That’s why it’s so important to preserve all the information about the past without any withdrawals and corrections.

But here is the other side of the “information abuse” of the old men. Many of them are full of fear, bad experience, and they willingly share their warnings. Their negative experience rejects all the new. Only the wisest of them are ready to support resoluteness and understand that critics and threats can paralyze a new idea for a long period of time.

There are still some places on our planet where a free dissemination of information is interpreted as something absolutely evil. People think there that religious or ideological tenets and isolation are the best remedy against the “infection of harmful ideas.”

For a long time people thought that our Earth was a huge pancake. Some time ago, all people thought that way, even the outstanding Greek scientist *Ptolemy*. According to his calendar it was only some decades A.D., but he was already finishing the creation of the geocentric system of the world. The Earth was in the center, surrounded by the sky spheres with planets and stars attached to them!

The system was bulky but capable of working. That’s why it had lived for fifteen centuries. There wasn’t any appropriate occasion and a worthy opponent who could show the system’s drawbacks. Hesitations appeared only after long voyages.

Nickolai Copernic was one of the first scientists who understood that the system was not okay. In 1543 he decided to remove the confusion. A simple thought was in the basis of his famous work “About the rotation of the sky spheres.” The sun

doesn't rotate around the Earth, but the Earth, as well as the other planets, rotate about the Sun.

The new idea not only essentially altered the model of the universe, but also radically simplified the astronomical calculations and made them more exact.

But the new view and the new system of counting caused irritation and hostility. The idea began to penetrate the scientists' minds. That's why in 1616 the Copernican work was banned by the inquisition.

Galileo Galilei, the inventor of the telescope, was the first who watched with wonder the mountains and valleys on the Moon's surface. The moon appeared to be not a flat disk and not a sickle, but a volumetric sphere. That meant that the Earth looked the same on the outside!

Galilei became an ardent supporter of the heliocentric system. For that he was put under a severe pressure, and in 1633, he was forced to renounce the Copernican teaching.

The new model of the universe, which was ninety years old by that time, was officially buried for the second time and for a long time. The ban was removed only in 1828 when its absurdity became obvious even for children.

So, it took 1500 years (from *Ptolemy* to *Copernic*) to create the heliocentric model of the world and almost 300 years to recognize it finally. That's why there's no wonder that even today we collide with prejudices, inertia and thick delusions, for which some people are ready to fight tooth and nail. The theories, which they piously believe in, are becoming an almost insuperable obstacle for the adequate interpretation of the new facts. That's why the absence of such theories is a blessing rather than a valuable cultural property. What a paradox!

The culprit of the phenomenon of persistently following the outdated conceptions is the interests of ideologists and representatives of power, rather than their narrow-mindedness. To publish the facts, which contradict the official ideology or the theory, and to admit that your opponent is right means to lose part of your influence. The simple fact that striving for the truth always or nearly always contradicts the interests of

truth always or nearly always contradicts the interests of power becomes quite evident.

The representatives of power say that they are interested in seeking the truth and educating their citizens. But they don't mean it. Power is consolidated with the help of misinformation and artificial incompetence.

The only thing you need to do to protect the system from destruction is simply to isolate it from useless information and dangerous ideas. But if the protective cover doesn't bear and the "infection" gets inside, nothing will help the system, but the immune system of sound and natural ideas. If there are no sound and attractive ideas – there will be no salvation!

Concealment of the truth and falsehood acts like drugs, they may weaken or delay the conflict. But destruction is indispensable; the drug by itself is not a constructive medicine.

If it is so, then is it worth repeating that reliable information of the state of things in the past is an effective motivation for resolute actions?

Is it worth reminding that information and fresh ideas coming from the outside are vitamins necessary for recovery, change and development of a viable system?

The Secret of Envy

Strange as it may seem but envy is a discovery.

New information about your friends, neighbors and acquaintances gives rise to the revelations of one's own possibilities and a desire to achieve the same and surpass it.

The phenomenon was noted long ago, but historians do not hurry to admit that it is envy that causes the progress of human society!

At first Japan, then a flock of small and one Great Asian Dragon surprised the world with their quick economic progress. The people of those countries are famous for their diligence and a special art in bargaining for each fraction of a percent. The warm climate and a dense population give them the possibility to watch one another. This leads to a close in-

terrelation, cooperation and an opportunity to create qualitative and surprisingly cheap goods.

The western countries despite their comparatively wide space are penetrated with a close net of roads and other means of communication. Thanks to it, people have the possibility for close interaction, comparing themselves with other peoples, thus having a stimulus for perfection.

Russia is a special case. It faces the same problems as the *USSR* did: vast space, bad connection and bad interaction of the majority of people, deficiency of legal culture; dominance of bureaucrats and criminal groups have paralyzed the huge country.

The communist paranoia created a mountain of weapons and tremendous plants for their production. These “goods” are partially standing idle and partially being stolen. This is why the Kalashnikov automatic rifle instead of being an object of Russian pride has become a symbol of civil war and gangsterism.

The ideological wire fastening the *USSR* is in some places torn, but it still permeates Russia and not only Russia. The syndrome of communist and alcohol hangover has paralyzed half the adult population.

Many of us will still have to realize our own interests and possibilities to act within the framework norms of civilized society. We’ll have to build branching nets of roads, adjust the interaction of the people, and learn to use envy as stimulus for labor and not a cause for spite, idleness and primitive communism. Other people and countries have managed to overcome all that. Russia will do the same!

The law of uneven development of social system was discovered by the greatest exanimate Lenin who modestly called it “the possibility of a socialist revolution in one separate country.” Unfortunately, Lenin did not know that the law of uneven development also applies to individuals and their property. Many will be surprised to learn it. But they will have to get used to this law and the awful paradox connected with

it. It appears that Lenin acted contrary to the law he himself discovered!

For the majority of the people there is only one way out of poverty – that is to turn envy into a stimulus for creation and not dangerous trials of revolution alteration and annihilation.

To overtake and surpass America – that is a good old game. America itself has been playing the game for over 300 years. The mean rule here is free competition. The information about other people makes one do his work better and better. That information about other people makes one compare himself with others and chooses a desire to surpass them. That is a good reason to strive for success and not to create obstacles for the success of others.

People are inclined to do things they can do best. A talented smith will most likely remain a smith during all his life. The place of the mayor will be occupied by somebody else. Probably the one who couldn't manage to become a druggist or a shoemaker, or the one who envied the smith.

Does it mean that an unsuccessful smith, druggist, or physician inevitably becomes a leader? There is no definite answer! But it is quite clear there are people who keenly need in compensating for their defectiveness and feeling failure. The weak try to find their “independent position” in the lower layers of the social hierarchy. The most desperate ones are inclined to infringe the Law and even become terrorists. The strong become leaders.

The first principle of Supercompensatin:

Defectiveness and envy tend to be transmuted into powerful stimulus a base for achieving a “high goal!”

The Benefit of Global Threat

An Asteroid 500 meter long passed the Earth on May 19th, 1996 at the distance of 450,000 kilometers. The Comet *Galley* and the Comet *Hail-Bopp* passed very close to the Earth causing neither fear nor trouble to politicians.

But 65 million years ago the Earth did experience trouble connected with the fall of an Asteroid the diameter of which equaled 10 kilometers. The stroke made a crater with the diameter of 180 kilometers. Tremendous masses of soil thrown into the atmosphere made a solid curtain of dust preventing the penetration of Sun rays. The temperature of the Earth surface fell to a great extent and for a long time. The Dinosaurs died out.

It has become a custom to soothe children with the oath: “Such a threat does not exist. Its possibility is next to zero.” But there are scientists who do not consider it a trifle and think it necessary at least to begin seriously watching the space where our planets are moving and not to learn news about comets and asteroids from astronomer-laymen. Indeed, we would be greatly troubled if we learned that our bus moved without a driver.

But going by car is not the most dangerous affair in our lives, but a car with a full set of cushions for safety may be 30% more expensive. For the sake of safety, people are ready to pay thousands of dollars, and that does not seem strange. What is strange is the fact that politicians pay billions of dollars for their safety and comfort and fully ignore the safety of the Earth.

The expenditure for arms drive is tremendous. The spreading of nuclear weapons is looked upon as an inevitable evil, and the threat that they may be used is growing. Nothing is left to hope for but the instinct of self-preservation of the politicians and the modest ingenuity of terrorists.

The leaders of neighboring countries very often look suspiciously at one another but serenely look at the starlit sky. The only unifying idea that they can offer their citizens is the threat issuing from the neighboring country, from America or the West as a whole. Indeed, there is something in common between them and the dinosaurs!

But their affected paranoia will lose all sense as soon as a global threat to mankind is revealed. And it is not necessary to

invent it. It exists. And principally it does not matter where its roots are, in the depths of an industrialized society or in space.

If we recognize the existence of an “overall outside threat,” there will appear a necessity to spend a lot of money to watch outer space and man’s environment. There will appear a necessity to remember those who are near and dear to us as well as our urgent problems. This will be ground to make friends with our neighbors. For otherwise who will help you if a meteorite falls on the roof of your house?

The science of food, of the entrails of the earth, and telescopes will quickly develop. Such problems as cosmos flights and the technology of turning unicellular water plants into meat will again become urgent. We shall need cosmic tugboats to change the trajectory of solar bodies and technology to build underground cities. The youth will become thoughtful and purposeful. Conditions of a new technological rise as well as a balance of the soul will become real. People will stop being fussy. Trifles will not disturb them. That will be replaced by confidence and purposefulness. We know what we live for!

And now I really do not know what is better: the view of a green lane in front of your house or the threshold of a burrow house in a pine forest.

Long live the general global threat!

It has a chance to unite and save mankind!

The Principle of Peace and Consolidation:

All people must have the common enemy outside the Earth.

The opposition of the *USSR* and the *USA* as well as the nuclear weapons were the cause of the development of aviation, cosmonauts and electronics. In the late forties, there appeared a necessity to carry nuclear weapons over long distances and hence the appearance of jet bombers. And then, passenger jet-propelled airliners. The rockets for nuclear charges appeared to be useful for launching people into space.

The threat of war at that time was the only stimulus for science, and war preparation made grounds for a technological rise.

But here there is something very strange. For the *USA* appeared to be of great use whereas for the *USSR* it turned out to be a matter of waste and exhaustion.

What is the reason? How did it happen that one system could make use of the result of the technological revolution whereas the other went bankrupt not being able to take advantage of the new knowledge and technology? Why did one country accumulate the new knowledge and make it profitable, and in the other country everything new was kept under strict secret and actually perished under the pressure of incompetence and passiveness?

As is well known, the same physical laws are at work in any part of the Universe and surely at all continents of our planet. Due to these laws, in some places, the roofs of the houses are leaking. In others they preserve the warmth and comfort.

Social laws act in exactly the same way. In some places, quality (wealth and knowledge) accumulates. In others, they are wasted. Somewhere people have the right and possibilities to preserve their health and property. In other places they have none. There are places where the power of law is cultivated, and places where the rules of the “game” are changing during the game. It is in the latter places where the passion of destruction comes onto the surface. There, there are no conditions nor stimuli to accumulate quality. Grains of quality come into being immediately perishing and giving way to the temptations of spending and competing in the ability to consume!

There are no reasonable directions concerning the value of information in the theory of Marxism-Leninism. It does not show any respect to the interest and technological culture of each person. The neglect of the rank and file and their simple but complete systems results in destruction. For many ideologists and politicians, the mere fact that the realization of “small” ideas is a guarantee of liberty and wealth of the whole society remains a secret.

The real value of ideas and knowledge is not in their potential possibilities but in quick, useful, mass usage. This prin-

ciple is true not only for hungry and poor countries. It is made use of by many rich countries and smart businessmen.

In the *USA*, a scientific elaboration has always been by the government in case it is popular with the customers. Useful knowledge was not hidden among one's "own" people. It was spread among one's "own" people. It was used to create new products for people. The country accumulated knowledge and became richer and richer.

A positive feedback was in use:

Knowledge → a useful product → money → new knowledge
→ a new useful product...

It was not weakness or treachery that destroyed the *USSR*. The information about other countries destroyed it. People compared and meditated. Mass conscience changed the old ideals. The king appeared to be naked, and the common trough for feeding the subjects was old and broken.

People discovered new ideas and new objectives. That discovery was the main reason for the downfall of the *USSR*.

What was really surprising was the speed of that destruction.

Today, just like a hundred years ago, young and energetic people need simple orientations. A real possibility to found their own business and turn their ideas and talent into products and services useful for people. Here is the foundation of a real and worthy life for every healthy person and the best way of survival of the whole society.

The Pyramid of Laughter

In our world, there are many people who are proud of their skin, height, nationality, wealth. People of the North do not understand the fussiness of Southern people, and Southern people are inclined to suspect Northern people in haughtiness. The poor are surprised by the problems of the rich, and the problems of the poor make the rich laugh.

Thus, all those who are just a little "higher" regarding the least important feature are always ready to make fun of those who are "lower." It has been going on for centuries without

any great efforts as if quite natural people are assuming formation in the shape of a pyramid of laughter. They enthusiastically enforce it by means of all kinds of signs and rituals. It is not for nothing that the procedure of awarding prizes to the three best sportsmen looks like a small model of the pyramid of laughter. And there is a grain of cunning laughter in the happiness of the winners at the "defeated" and everybody else!

To decorate the pyramid, everything is good, beginning with bright features and shining medals up to tremendous tombstones, multicolored grease paint and grandiose fireworks.

What do you think these dinner jackets, brilliants, limousines and absurd columns decorating the front of villas are good for? All these are attributes of the pyramid of laughter, its basis, its firm skeleton. Just take all these away and all people will look exactly alike. And what is most horrible, they will be equal.

Don't be afraid! This state of things will last exactly one fraction of a second. There can be no stagnation in such an affair. The erection of a new pyramid will begin at once. For some are higher and stronger, some are more cunning and resourceful. They have all the right to laugh at their rivals and present themselves as leaders and worthy candidates to occupy the top of the pyramid and snatch the best piece of meat.

Among the orthodox there will always be some who are more faithful, hence more "worthy" to occupy the upper stories of the pyramid. They will easily find means and ways to replenish the missing attributes to make a tremendous rush upwards. Some will decorate their hair with the feathers of the peacock they have just eaten. Some will put a red band on the arm, and some will buy a new limousine.

Mr. A will laugh at Mr. B and Mr. C, and they, in their turn, will find reasons to make fun of their neighbors and "junior friends" because they are "such fools" or "so much dependent," or "too poor." In short, they are different.

Thus, the pyramid is ineradicable. Everyone will find a pretext for a haughty smile. By all means, there will be one

who will try to make a formation of all the others in a pyramid near and clear to his heart. Such a firm and rigid one that he alone will be able to laugh, all the others will be past laughter.

Strange as it may seem, such a pyramid is most likely to be the object of ridicule, especially at the time of final maturing. The *USSR* at the epoch of Brezhnev was such a pyramid. The whole world was (cautiously looking at the nuclear weapons) laughing at the strangeness of the “communist” system.

It was not only its inner structure or the pathological ineffectiveness. It was also the foreign policy and the purchase of grain from “enemy #1,” at which the lion’s share of the nuclear weapons was aimed.

You haven’t revealed the outline of the pyramid of laughter? That means, you are five years old. You have grown up in the paradise where there are no snakes and much food free of charge. You have never dealt with bureaucrats, never talked with foreigners and street salesmen. You have never been abroad and to flea markets either. Nor have you been at international exhibitions or clearance sales. All those who have ears and eyes are fully convinced of the existence of the pyramid of laughter. Most people have already “harnessed” themselves to it and are even making profit out of it, because it is so funny and profitable!

Those who unskillfully trade at the world or flea market willy-nilly found themselves at the foot of the pyramid of laughter. They demonstrate their products making a laughing stock of themselves, fawningly smiling and ready to sell things thrice as cheap as others who can sell them a few times more expensive.

All these delights concern not only raw material or “unfinished” products. Such conclusions are also true about information. The knowledge and work of poor scientists are much cheaper than services of rich consultants. “I know how” of those who are below is worth a hundred times less than the “know how” of those who are at the top.

Is this a paradox? No, definitely not, it looks more like an elementary principle of the pyramid of laughter!

The pyramid of laughter has another paradoxical feature. The creator, however skillful or inventive he may be, is doomed to be "lower" than the most ordinary employer, wholesaler or banker. In any case, he has to obey them. In the pyramid of laughter, his position is a step or two lower. It does not look so sad if there is a chance to make use of another wholesaler or banker. If there is such a possibility, then there are reasons to rejoice at the liberalism of the free market.

The world becomes more and more transparent. We easily learn of events taking place at the other side of the planet, buy goods made there and even have a chance (mostly theoretical) to travel around the world. And then it will never occur to anybody to make things that are better and cheaper there. The strong and the weak sides of everyone are clearly seen. Everyone gets his "place" in the global economic pyramid of laughter. Those who are "foolish" and "lazy" are at the foot; the "sly all-knows" are at the top!

In the pyramid of laughter, there is a glass cell for everyone. The transparent floor gives him the possibility to smilingly look at what is going on beneath, and at the slightly transparent roof to make out the haughty smiles of those who are above.

On the one hand, all that stimulates competition and a desire to be cleverer and more effective. On the other hand, it makes one stick to his place and follow the slogan: "Do only things you can sell and nothing else." Otherwise you risk to go a step down.

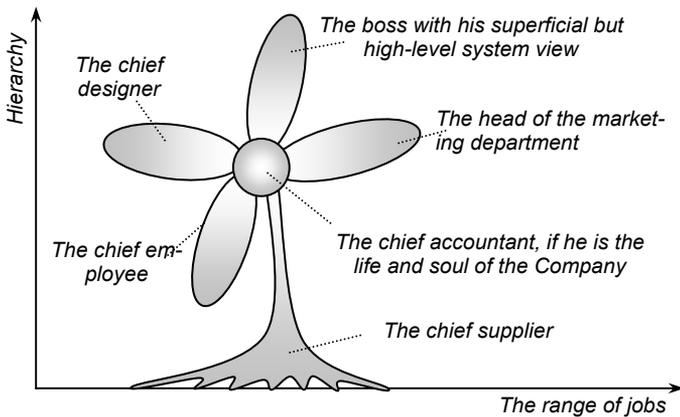
But what is one to do if he is not satisfied with his cell? What can be done to loosen the "fetters" and move upward without much noise and conflicts? And what is most important, how to avoid the necessity to "advance?" Such questions cause trouble to many people. For them, the existence of a new scale of values and other ways of making money without being in touch with bureaucratic and criminal pyramids may appear a great discovery.

2. Skills to Remain Alive

The Flower of Competence

Civilized people know that it is impossible to be a Jack-of-all-trades, so they divide all that is to be done into smaller jobs. They want to exchange personal competence for cooperative self-sufficiency that is why they unite into more or less strong-knit teams and settle the questions of dividing the competence.

Here is an approximate picture of this division:



Looking at the root of the flower, we see that the Chief Supplier feeds all the “flower” with juices – materials and elements.

The Chief Employee makes the main components and assembles the product. He uses the drafts and “wild” ideas of the Chief Designer, but often acts upon his own discretion.

The head of the marketing department is not really interested in the manufacturing process. He is absorbed in discussions with dealers and is ready even to study his customers’ needs, but only prospective customers.

The boss soars over the system and fixedly contemplates the horizon. His task is to strengthen the company, to know exactly which way to go, what should be taken on board and what should be left behind.

The Chief Accountant is someone all of them have to deal with one way or another. And if he is honest and pleasant in all respects, he has the honor to be the center of the competence flower.

The company is united by common work, and all the employees are aware of the fact that they need each other. In this case, they have no problems. The flower of competence is their common asset. And this thought makes them feel sure of themselves. This is the way cooperative self-sufficiency works.

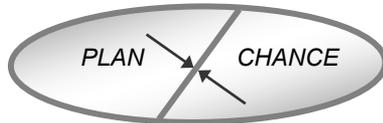
Chance or Plan?

Some of us are hard nuts to crack. They try to act only according to plan. And people tend to consider this life mode exemplary! But there are also others who prefer to act depending on circumstances, hoping for a lucky chance and a winning number.

Anyway, all of us have to do things both planned and unplanned and divide our time and efforts. It seems plans gets the most part of success, and chance the least. It is not quite true – or completely wrong. A lot depends on one’s point of view. Planning is not restricted only to all-wise experts who have system knowledge, predictive power and desire to look into the essence of what is happening. That is why very few plans are the products of genuine foresight. Some plans with their ardent followers are more devastating than an earthquake.

New things are difficult to foresee, and new circumstances call for changes in the plan.

We have to decide whether to pursue the same course or to stray away from it because of pressure or temptation. An eternal dilemma!



In our everyday life we are used to it and do not pay much attention to the philosophical essence of this **contradiction**.

We are more interested in the result of the fight between the strict plan and the capricious chance.

Our speculations are simple. If new circumstances can destroy plans, it means either that our aims and desire to reach them are far from perfect or that the circumstances are too influential. And those who believe in the all-embracing power of the plan are slow to admit that they themselves and their plan are to a great extent the work of chance, and acting according to circumstances is often more rational than following an outdated plan.

On the other hand, the ability to act according to plan is a sign of competence. That is why a careful performer of a developed technique seems to be an expert. No wonder. A technique is a miniature plan of actions and a ready means for reaching a local aim.

The aim is like a steel reinforcement rod. If it is firmly built into your mind, your plan is invincible. Some chains may be broken, but they will be replaced by new ones. The aim will create them.

Planned “land cultivation” provides not only well-earned reward and respect of others. It can give unexpected troves and pleasant surprises. So, I do not intend to show you exactly on which side of the plan/chance border success is born. Many people tend to call their luck planned, not knowing that determination and persistence are a good substitute for competence and a nice dope for a lucky chance!

People with clear conscience, who are able to empathize and look into the subtleties of any process they observe, are prone to losing themselves in this fineness. That is why they are often subject to the influence of Chance.

“Is it worth flying so low?” is others’ point of view. These others prefer a higher system level. “The wave does not cover those who are above it,” they say and often win.

To act according to plan is to soar over the circumstances. To look at the system from above, to embrace it as a whole, to foresee its development and to make it succeed disregarding minor points.

Stable life conditions do not call for readiness for unexpected troubles and immediate reaction to them. That is why in this case, planned actions are more preferable, being devoid of stimulating influence of chance and its many surprises.

So, plan and chance coexist, compete and conflict, and, strange as it may seem, complement each other. They both create a lifelike picture of the world.

This simple idea is slowly finding its way into people’s minds, and the talks about what is better, planned economy or market economy, are long in the past. Free market corrects mistakes in plans, and wild market environment is restrained due to wise planning!

A Fantastic Grapple

Attention! The performance has begun! There are three shots-gladiators in the arena. The aim of each of them is to survive in the fight. Each has a rifle and two cartridges. But their skill of shooting is different. The first is a wonderful marksman. The second is good shot. The third is bad.

They were kept in neighboring cages. They were training in the same shooting range. They know one another quite well, but now they are enemies. How will they act on the arena?

The first aims at the second, and the second aims at the first. The third will strenuously wait for the outcome of the first two shots, but in any case, he will aim at the first. He is more dangerous!

Thus, two against one or the majority against “the best.”

The Principle of Leveling:

Outstanding individuals are under pressure of the majority.

There are many facts confirming this statement. There is a funny Japanese saying: “Nails which are thrust out are flattened with a hammer!” Medieval European history provides us with plenty of examples of burning up scientists/heretics and clever, independent women who were so easy to suspect in witchcraft.

But here is another tendency. Most of us have now and then seen how stronger teenagers mock at their weaker mates or at those who look different. Such scenes can be observed at schools and in a hen house when all or the majority are against one. This is not an uncommon thing in a civilized society, especially in critical situations when it is necessary to sacrifice part of the system to save the whole.

When matters concern the development and improvement of technical systems, goods or services that process is quite natural. But when it concerns people it looks sad.

The Principle of Biting off One's Own "Tail" or the Aspiration for Perfection:

Social groups are striving to get rid of their weaker members. Highly organized systems are doing their best to increase their effectiveness and get rid of unnecessary elements and links in their structure.

In due time the system will settle the matter with the weak "tail," and the day will come to divide the positions in the hierarchy. And then each individual will think only of himself, his desire to get rid of the most dangerous rivals will look "natural."

The Principle of Monopoly (the reverse side of the Principle of Leveling): "The Best" are striving to get rid of the most dangerous rival.

To get rid of means to excel, to isolate or...to annihilate. Of course, friendships, nobility, religious feelings in some way smoothes up and weaken the desire for monopoly or complete leveling. But these tendencies are alive in a civilized society where people are capable to sort out their feelings and public norms do not allow them to do vile things. And yet, it is sometimes funny or very sad to see how an individual is biting off his own "tail" striving for perfection and at the same time another individual is biting at his neck seeing in him a dangerous rival.

All those unpleasant things are a result of the "mysterious" laws of social systems. Many a time have we experienced or observed such laws in action. That is the pay for our life in

society. And those who have already noticed these "delights" become ardent supporters of the principle of decentralization, freedom of the individual and the free market.

The ideals of freedom stimulate self-sufficiency. But self-sufficiency of an individual or a whole nation is achieved only if a certain level of effectiveness is achieved. That is, a minimum of knowledge, rights and ownership that allows us to act the way we choose.

Happy is the people whose leaders are supporting their citizens to overstep that threshold! But such support, if it does happen, is not boundless. In this way or that way, the hierarchy is trying to limit the self-sufficiency of its subjects. That is how it sees the way of its survival. But if the top of the pyramid is only concerned with its own well-being and safety and does not care for free development of people, the system is doomed to degradation.

Paradoxes of Evolution and Secrets of Life

Anatomists have discovered that men's foreheads are receding and lower than those of women. Men's chests are more hairy and they have all the right to be proud of their strength and ingenuity.

Women are creatures each cell of whom is different from that of men's. Women have their own manners, their own subculture, physiology and psychology. They are tender and full of care for living beings especially young, and are ready to snatch out for them the best pieces from our plates.

Taking into consideration women's strange and unbelievable tenacity of life, we men can suppose that women have either more advanced on the evolution ladder thanks to our selection work or they are simply beings from another planet.

But they are lucky; they found themselves in the arms of men: creatures humane and patient who realize the fundamental difference and condescendingly regard women's desire to fix their own subculture and civilization.

I would have hardly paid attention to those facts had there not been two funny episodes in my life. My daughter carefully examining my hairy chest and touching it with her tender finger suddenly asked: “Daddy, will you grow up a bear?” She was two at that time, and I was astonished by her view at the world as an evolutionary process.

Ten years later instead of answering my innocent and simple question my daughter said: “Dad, you'll just the same not understand it, you are a man!”

Darwin's evolutionary theory places the man at the end of the chain beside not very pleasantly looking creatures and affirms our close relationship with them. Most of my acquaintances casting a glance at the mirror categorically deny that. Some of them ironically remark that for transplantation, people deserve organs of pigs rather than monkeys. Such circumstances radically undermine my belief in the evolutionary theory. Besides that, history and my own experience in no way proves that the cleverest, strongest and independent people are most capable of survival. Just the opposite. Human civilizations and the populations of animals rapidly developed and perished without leaving any trace indicating their ability for perfection and survival.

On the other hand, is it worth while looking for signs of evolution in graves? Is it possible to arrange skeletons found in different parts of the world according to height, size of the cranium and speak of the progress of their owners? Is it possible looking at them to guess the laws of life? Objectively they carry more information concerning the cause of their death. Therefore, biologists and physicians prefer to deal with rats alive and not to disentomb decayed remains.

Thus, contemplating the variety of life we have the right to draw the following conclusion.

The Main Principle of Life:

Everything capable to live survives! Only those capable to live, live and shall live!

Corollaries:

- *Everything that could not live died.*

- *If you want to lead an interesting life, ask yourself: what for do I live?*
- *If you want to live in safety, create favorable conditions for all those surrounding you.*

And yet, why do the strongest not always manage to build a house of their own, to have a happy family. Why can't the cleverest become the richest? Why did highly developed civilizations degrade and perish? What did they lack for survival? Is it possible to find those reasons and make our civilization everlasting and our own success inevitable?

People always lacked objective and system knowledge about the world. It is the system conception of the world that decisively influences the behavior of society and each individual.

Having realized the ecological problem, people strive to shorten the usage of matter and energy. Having realized the danger of social and military conflicts, people reduce their desire for “live space” and are ready to seek a compromise making use of power as a means of argument in disputes and not as a means of destruction. In such a case, people seldom fight.

The knowledge of the principle laws of nature and society gives people the possibility to foresee the results and consequences of their actions, avoid many fateful mistakes and more or less reasonably choose the way of the development of their enterprises and state. Now, the question is whether to work only for oneself or to sacrifice oneself for the benefit of others?

There is no simple answer to this question, but there are natural orientations – samples of success. Looking at them, very few are ready to sacrifice themselves for the sake of the flourishing of society as a whole. That is why one's own interests become an icon. There is only one Mother Tereza and very many samples of personal success.

On the other hand, there are conventional restrictions – norms and laws, at last, one's own ideals. Due to them, the structure of society is preserved.

But that is in the nature of people. Only those who persistently (openly or secretly) support their own interests survive and flourish!

We don't have to explain our own actions until we are within the boundaries of law. But can we at any moment explain to ourselves what we are doing and why? This question frightens. Many people refuse to get and accumulate a system conception of the world and prefer to follow traditions and signals sent from above. But the accumulation takes place without their will. Already in our childhood, each of us gets a layer of such knowledge in the shape of school and parental dogma about what is good and what is bad. Then one's own experience is added and the experience of people of far away countries. Knowledge is accumulated, we change.

Among the powers that be, there are not many prophets. The honest and the cleverest seldom find themselves at the top of power. That is why in many societies and whole countries there is always a possibility to do a foolish thing leading to a catastrophe.

At first, very few realize the possibility of a catastrophe. They behave in various ways. Some are ready to sacrifice themselves to prevent the disaster. Others simply flee. The former and the latter seldom manage to attain the desired. Therefore, in the Declaration on Human Rights there must be a clause allowing people not to participate in rotten pyramids and the right to leave the deck of a ship before its departure on its last voyage. Let them call you a rat. But as is well known, it is better to be a clever rat alive than a foolish dead rat.

The conception of one's life strategy gives everyone the possibility to choose a worthy aim, to look for and accumulate knowledge, work out one's own means and tactics of survival and make his success lawful, not just a chance. It is quite possible to understand the grief of the old carrying the weight of lost opportunities and mistakes. If only they had known then, long, long ago what they know now, they would have acted quite differently.

No wonder, knowledge and a system conception of the world accumulate too slowly. If we get them in proper time they are capable to radically change man's behavior. Therefore, a system conception of the world for personal success is more important than a concrete technological process and profession. But what is most wonderful is that this rare phenomenon favorably influences society. It creates leaders and gives birth to discoveries! The rank-and-file's lack of system knowledge stabilizes a closed society. Stability is preserved only due to the suppression of system knowledge and the source of system information. People simply do not know that their life, the order in the county and their enterprise can be quite different. The lack of information makes them firm and easily guided chains of the pyramid. The lack of information has the power of cement. A paradox!

The monolith of such a system sooner or later turns into sand. It is information that does it. It happens when people find out the incompetence of the top and the low effectiveness of the system in which they are built. At that significant moment, they stop being an easily manageable herd.

A system conception and a set of physiological tricks are a good armory for a successful career and even for heeling the rotting pyramid. But is it worth while to exchange these riches for a place in a great unhealthy system with all its inconveniences, a state of dependency and the risk to be thrown out to please somebody's interests?

An Amazing Theory of Information

Many people think that this theory does not include human appreciation of information and is useless in everyday life. We shall now present two formulas from the information theory in a form that is easy to grasp and therefore can be of use to us.

The quantity of information **I**, which the observer receives looking at an event or object with his own eyes equals:

$$\mathbf{I} = \mathbf{I}_0 + \log \mathbf{S}_1,$$

where I_0 is the information about an event or object available to the observer, S_1 is the accuracy with which the observer can see the object or judge the event.

Lie L , which the observer obtains together with the information about the event from TV or radio broadcasts, rumors or witnesses:

$$L = L_0 + \log S_2,$$

where L_0 is a perversion of truth, either purposeful or unintended, added to the initial information. S_2 is the accuracy with which the observer perceives the message.

For a wise and unbiased observer S_1 and S_2 are almost equal. For many others S_2 is much greater than S_1 , because they are not used to seeing the world with their own eyes. They find it easier to swallow what has been digested for them.

So, these two formulas give us:

The Principle of Approaching the Truth:

The more we try to see events with our own eyes, the more reliable information we receive.

The Principles of Lie Multiplication:

- *A retold (conveyed or copied) message gathers distortions.*
- *The more details we try to get from a report about an event, the more lies we can receive.*
- *If we become more sensitive and imaginative while analyzing secondhand information, we might make our own contribution to the lies.*

People tend to present events in the view which is beneficial for them. We often face it, and this fact leads us to the understanding of two simple rules of informational security:

1. *Avoid the avalanche of second-hand information.*
2. *Give more trust to your own eyes, less to TV and still less to rumors.*

Paranoia in terms of the information theory is a disease caused by an abrupt increase in perception sensitivity. If a person is always on the look-out for some hanky-panky, he starts to carefully analyze every rumor and every event, trying to

spot enemies' tricks. His memory is quickly filled with informational noise which breeds terrible "insights." This burden forms a false image of the environment and makes the person insane.

Psychoanalysts can help their paranoid patients if they demonstrate the formula of lie to them and describe the principle of lies multiplication.

Dwelling on the informational theory of paranoia, we nearly forgot about one more important phenomenon connected with the perception of information. It is the threshold effect. Its essence is that fallacy and clear understanding are not as opposed to each other as it might seem. Sometimes you only have to find one small detail which allows to see the sense in a picture you could not grasp before. We usually call this detail "the magic key" or "the last step" which helped us to go over the threshold of understanding and replace an elusive image with a bright picture. But this detail is just a small component of the system which happened to play the final role. This role could be performed by any other main components.

It should be noted that this "magic key" was effective only because there was a "critical mass" of authentic facts which could form a clear and finished picture. This picture "comes to life" and becomes a source of new information.

And now we face a new task: to make sure that this source is based on the correct model of the situation and not on the clouded mind of a paranoiac.

The Value of Information

Information possesses wonderful characteristics! Crumbs of information give birth to ideas and discoveries which change our view of the world, destroy old systems and create new ones. One and the same idea in one place can be worth a fortune and thrown away like useless lumber in another. Some people use thousands of words to describe an event or object, others need just one sentence to explain the essence. A few

words can be worth a million, and huge libraries sometimes stand for cipher. One bright idea can fill your soul and attain absolute value, whereas a flood of words from the mouth of another ideologist causes only apathy or annoyance.

It is much better if there are plenty of ideas and they exist in a humane environment allowing choice, exchange and competition. In an environment where people can put them into practice and use authentic information. Such environments cause wonderful qualitative changes. The ideas multiply! And people can get rid of misconceptions and transform information into wonderful fruits of their labor.

We get ninety-nine percent of information free. It is a kind of a prize for the ability to see and hear what is happening around us. Sometimes ideas are “up in the air.” Sometimes they are given by friends. Sometimes we are offered to buy them, and we are ready to pay for the information we lack. This information can be compared to the key from a door blocking our way.

If we have no purpose and we do not know what we want, we will never absorb this “vitamin” which is really vital for our life and success.

Reliable information is a universal tool and a universal commodity. It is an important part in any competition, either on the market or in war.

As soon as you learn about the plan of your enemy, your own plan undergoes “miraculous” changes and turns into “a terrible secret weapon.”

If your plan becomes known to the enemy, you have either to change it or to hasten its realization, counting on surprise effect.

When you get information about some improvement made by your rival, you simply must check its efficiency. Although, if you have ideas of your own, you have to choose between a safe routine of recipes or a creative nightmare of the realization of your own project.

People learn religious and cultural laws at their mothers’ knees. Family traditions and the unique experience of parents

is an inheritance which is passed implicitly, more or less confidentially from father to son, from mother to daughter.

Special trade secrets are a rare wealth. They are jealously guarded. The welfare and safety of a family or company depend on them.

Usually we keep to the laws of our community, and it makes us its full members. We have some knowledge which provides us with work and respect of others. The more unique and rare our experience, knowledge or management skills are, the more chances of obtaining money and power we have. It attracts many people and encourages them to develop their unique abilities, accumulate and guard the most valuable knowledge and technology they possess. All this expertise and experience together constitute the culture of a given society.

Those who want to trade information can make use of a few more or less well-known principles:

- *You cannot sell what is known to everyone.*
- *You cannot sell lies. Information does not have to be comprehensive, but it must be genuine. You should never fill in the blanks with your guesses. Leave this pleasurable activity to the one who pays for it!*
- *The price of information is in proportion to its expected novelty and the wealth of those who want to buy it.*
- *Poignant interest and demand are achieved due not to the average quality of a product, but to its unique traits. It can be a vivid or scandalous episode for a movie, a relevant topic or a famous author for a book, a novel function for a computer program.*
- *The information product should be substantial enough and easy to protect from unauthorized access. If it is an easy-to-grasp idea, no one will pay for it.*
- *The better an informational product corresponds to a given market, the greater is the demand for it (a needed product at a fit time and place).*

- *The authors of an informational product advertise their intentions, not real achievements.*
- *People are ready to pay for a promise of a unique characteristic. To try it you have to buy it. Disappointment is not a satisfactory ground for suing the authors and sellers of an informational product.*

Cinema and books are systems too. But informational systems possess a paradoxical property: They are viable even when evidently unfinished. That is why an informational product can be sold unfinished. A famous writer or film director are easily forgiven. If so, it is no use rewriting a new novel, shooting missing episodes and wasting your efforts on good editing. The main characteristics – the name and some catchy episodes – are already there. Why waste your time?

Many people try to accumulate valuable information and they look for things they can sell or gain profit from. This is what they do:

- *Suggest a topic for discussion and encourage others to speak their minds.*
- *Listen to others' ideas and keep theirs to themselves.*
- *Reveal intimate details about themselves, expecting to gain more trust.*
- *Tell about their problems, waiting for advice.*
- *Display their enthusiasm in solving their own problems, hoping to infect others and get their help.*

An unequal exchange of ideas creates a sad impression. But it happens quite often. Donors see it as a price for the joy of human communication and self-expression. For users, it is the only way to get a new idea.

Why only some people do not behave like this? These are just techniques used by many, more or less consciously.

There is only one snag. It cannot last for long. Active users of such techniques have to keep looking for new donor friends. They fly from one flower to another in search of new fresh food.

This is the way people are made. They openly dislike the ones whose ideas they have used. This feeling is akin to guilt. They do not need witnesses who pose a threat to their reputation. They do not want to be dependent on them, and they try to get rid of these witnesses. It is more than a ground for friendship to turn into hatred. It is a reason for lies and crimes.

If there is useful information which can show us the way in a labyrinth of obstacles, there is also its antipode – “harmful” information which can cause reproach or blackmail.

The best dependence is no dependence at all. It means no information leak, no unnecessary trust. Openness is a good sign of clean intentions, but it is also the window for someone to throw “a dead cat” into.

Information becomes money’s-worth only if it can be immediately used as a guideline for some actions or as a signal of command.

Valuable information is governed by “magical attraction.” It tends to slip quietly to the top of the hierarchy, not to places where it is the most needed. The body of the pyramid gets only some spatter, informational fog and rumors seasoned with more or less rough distortions. Well-measured leaks and planned irrigation of the body of the pyramid is affected from the top and is generally followed by signals of command.

The top can have various aims: to divert attention, to camouflage, to justify or to deceive, to “show out a fraud” or to throw mud at someone (war justifies all means). But their main purpose is the only one – to gain and strengthen their power.

The ones on top are well aware of the potency of informational flows and try to keep them under control. If carrot-and-stick policy gives limited power, information can give absolute ascendancy through influencing people’s minds.

A signal of command from above is often decorated like a cake with useful facts. Such “lubrication” increases the efficiency of management and at the same time disperses doubts.

The cause for “magical attraction” of information to the top of the hierarchy are the interests of people from the lower

layers. Of those who find new facts purposefully or come across them by chance. They tie up their success with personal delivery of valuable information to the top. This is characteristic not for spies only. It is the passion of those who long for social advancement by any means. They gather all facts they can and drag them further to the top, hoping to bargain them for a higher position in the hierarchy or money. It is a reliable means to get into your authority's graces and win some points from your rivals.

The Law of Informational Flow

Valuable information tends to flow upwards, to the top of the hierarchy. Information is attracted to power and money.

Curiously enough, technological detail and problems of lower layers' efficiency lie the farthest from the interests of the top of the hierarchy. They are usually more concerned with what can be used for immediate strengthening of their power. Their eye is generally kept only on large flows of money and weapons. New information about nature and economic "miracles" are just a way of entertainment for them. Not the best one. And the person who comes up with a new idea should also present it in a clear and concise way and prove its value. Donkey work! Eighty percent of such ideas are turned down flat. Twenty percent are kept upon the shelf or used, though without their authors.

It is well known that "advanced" and "concerned" with an imperative aim, people find valuable information with great ease. The principle of correspondence is at work. The idea is clear and interesting for those who are ready to use it at once!

Journalists are the best informed of all. Usually they act openly. They do not have to hide and work in secrecy. Their activity is legal, and their determination and efficiency are often considerably higher than commonplace spies. That is why intelligence services try to use reporters. No wonder. The principle of functions combination is at work in all highly organized systems. It is their characteristic.

Information is the spirit, essence and "blood" of all complex systems. It is the most unpredictable and paradoxical

commodity known to man. It can turn into effective actions and money with surprising speed.

You want an example?

In 1926, *Aristotle Onuses* was a hungry twenty-year-old youngster who had escaped from the outrage of Turkish soldiers in his native city of *Smyrna* to *Buenos Aires*. His family was bankrupt; his hopes to become a student of a prestigious university vanished. He is an emigrant, fit only for back-breaking work. During the day his equals toil under the fierce sun for fourteen hours, and at night, they dance a new fashionable dance. Tango!

Aristotle chooses an opposite way. He finds a night job with a telephone company. At night he studies languages, listening to telephone conversations. And during the day, he is in a yacht club, among those who might be interested in what he heard during the night!

It is then when he gets his first real money. Thanks to this money he starts a tobacco trade. By this time he already knew exactly what to sell, where to get the goods, how to transport them and who the buyers should be. He already had a structure of an efficient system in his head. And it must have appeared under some influence of the overheard phone conversations and talks in the club.

A short time of working as a telephone operator and acquaintances at the yacht club were a successful start. It was a foundation which in the end gave him much more money and power than lectures of refined professors gave to thousands of graduates of prestigious universities. He had valuable information which could be used instantly. And he used it!

Paradoxical People

Vasily N. was a supporter of a healthy way of living. He slept with an open window. He was an instructor in tourism and a pleasant, modest man. I was sorry to find out about his death from a serious liver disease.

We used to go on a short outing around picturesque forests of Belarus. Once we went out to a river. It was a beautiful view: a blue transparent stream, flowing “in the right way”, from left to right, among clear sandy banks, decorated with wide-crowned pines.

Having admired the river and looked thoughtfully at the map, our instructor continued his way. In ten minutes, we went out to the river again. But a strange thing, the river flew into a different direction! We looked at the powerful stream surprisingly. How could it change the direction?

“Everything is clear!” *Vasiliy* said. “We went out to the river from the other side!”

We laughed merrily, looking at a serious instructor's face, to go round the river water-meadow for ten minutes?

The paradox didn't last long. We looked at the map and cleared up. We were near the place of the connection of two river-sisters but saw them separately.

Valentine B. bought a firm, but beginning to rust, *Moskvich 412*, and was happy about it at first. I told him that *Moskvich* isn't very economical. If he manages to start its engine in winter, in town it will use fourteen liters per 100 km. The car doesn't distinguish itself in speed, and it is not clear where the petrol goes.

Valentine answered sullenly: “I bought the car not for driving it.” (He wasn't a collector and didn't have another car.)

Later he confessed that the defective engine used twenty-five liters and to prove how thoroughly his car was prepared for painting he said that three kilos of puttying had been used for his car with the weigh of 900 kilos.

I drove a little *Opel-Corsa* for three years. It didn't look luxurious, and I wasn't proud of it. At a furious minute of sincerity, my collaborator, Alexander, called my car a perambulator. I said that my car-perambulator perfectly carried out its main function for the money I had spent on it. It was ideal for short trips. It was so little as if it didn't exist at all. But it distinguished itself by its fast speed. And more than modest exterior is the best means against driving away.

Alexander keeps his large and comparatively new *Ford-Scorpio* on the parking lot situated a forty-minute-bus-ride from his apartment building and uses it twice a month. He doesn't understand my two secrets:

- *It's not necessary to use a two-ton major car for short trips around the city.*
- *An old and small car which is situated in front of your apartment building can be comfortable and safe.*

Secrets? Big words! It is known to all Parisians and inhabitants of other European cities. Many well-to-do gentlemen drive little ugly “perambulators” every day and expensive cars to receptions and on holidays. They know well that they can lack for even five sm. during the parking. And how to get out of a tightly-fitted row of parking cars? It causes pushing, breaking lights and scraping the sides of your car and others'. You feel sorry for a new car and have to drive an old one.

Let's follow the Parisian's example! Moreover, most of us don't have another way of driving.

Andrei R. bought a *VW Beetle* made in Germany in 1964. He bought it without an engine. Now he has three old engines and is proud of the fact that he replaces them within one day. He accumulates spare components and soon he will make one more Beetle. But isn't it better to have one little old *VW Golf-I* than two very old *VW Beetles*?

Vadim's parents bought a house with a big garden in the country. He says: “I'd like to buy a tractor but it costs too much. But if I have so much money, why do I need a tractor?”

When the government of a big Latin-American country decided to help peasants to get tractors they set a task to find such a tractor that could be bought after selling a couple of buffalo. Innovation should fit the system for which it is intended and do well without the risk of unpleasant consequences. Then the right of the innovation is obvious!

Vasily L. resolutely entered the laboratory and began making the device of radio signaling. In the basement of his apartment building, the lock had been broken and two jars of jam were stolen.

I asked *Vasily* what would happen when the signaling worked out. I wondered if he would run to the basement and saw a man with a scrap-iron? Then what? Fighting? Is it worth being injured because of jam and radio-signaling?

Let's assume you have reached the aim. What has changed? What have you reached? Can't you get the same in a different way? How do other people solve this problem? What is bigger, the result or the expenses?

It's sad but sometimes a prize occurs less than the expenses spent on its winning. This is the fate of many good but unrealized projects.

The Principle of Expediency:

Innovation has the right to live in case it solves more problems than it makes.

Let's retain optimism! We'll learn how to solve a problem in several ways. We'll have an opportunity to look at them from different points of view and to choose the best one. The one which will give more than will take.

We'll be courageous enough to reject wrong and having no prospects tasks.

Troubles and deadline sometimes appear in our way. We can learn good lessons from them. They give rise to a stimulus and become the base of success.

There are a lot of examples. In 1956, Ford Company supplied its cars with a complete set of security devices. A soft bracket of the dashboard was in public eye and a commercial affirmed that an egg having fallen on it from the second floor wouldn't break.

A young but resolute sales manager from Philadelphia district *Lee Yakokka* took the word. He decided to prove the fact in public. On the stage in front of the amazed audience, the security brackets were installed. *Yakokka* climbed up the step-ladder holding a box with eggs. The first throw missed. The second egg hit an assistant. The third and fourth eggs got in the soft brackets and got broken. The fifth egg partly saved the situation. It didn't break! The audience standing was applauding to an amusing show.

Later on it turned out that the Philadelphia district was the last one in sales volume. Unhappy, *Lee* worried a lot and swore never to bring eggs to a meeting of sellers and demonstrate unchecked tricks.

Soon after this episode with eggs, he had a first really successful idea. “56 for 56”! A customer pays 20% off a car value, gets a new Ford (1956) and then for 3 years he pays 56 dollars monthly. In three months Philadelphia district became the first in sales volume! *Robert McNamara*, the vice-president of Ford Company (later the Secretary of Defense of the USA), was delighted. But *Lee* himself seemed not to guess that the base of success was in those five eggs, which he had thrown on the stage. The feeling of disappointment turned into the desire to improve the situation. A strong stimulus to find the way out of the difficult situation appeared. At that very moment he had an idea which brought him a considerable success and fame.

Dead lines are training means. They teach how to overcome difficulties and make a motive. That's why every cloud has a silver lining. Paradox! Not only clowns use it.

The Formula of Success

Very often young people look with curiosity at the portraits of the Great hung on the walls of their schools and foreign banknotes. They are eager to learn who those people were in their time. They also want to know about their schoolmate's parents. When they find it out, they realize that a society is a world with many various hierarchical structures. Beginning with very small pillars and mounts up to grandiose pyramids.

Being young and fresh and hungry, they choose an appropriate structure and begin to clamber to its top hardly being aware of the final objective.

Luckily there's a possibility to realize one's talent without covering the whole long and poignant track from the foot to the top of the pyramid. Getting an education at an elitarian university, through parents' ties and connections, their own

friends give them a chance to find themselves in a warm and well-fed company far away from the bottom, closer to the sun and ripening fruit among juicy greenery full of health and vitamins. Well, everything is OK. One is climbing the ladder of his chosen business to the top of handicraft. And all of a sudden he is faced with a batch of restrictions. That can be the result of incompetence or the interests of those who are at the top. But it can also be one's own weakness.

One is in a blind alley!

Life is longer as it seems when one is 16 or 30 and there are still many chances in store. Everyone must at least once in his life decide whether to leave everything as it is or to take a deep breath and dive into the unknown hoping to find a better business and a better fate. But then he will need the ability to orientate, perseverance and devilish luck.

The image of a half drowned cave of deadlocks is too gloomy. How more pleasing is the image of a tree in full sunshine, with a variety of branches. Some are full of luxuriant greenery, some of ripening fruit.

If one is sitting on a drying branch he dreams of jumping over onto a branch with juicy and ripe fruit. But there are already other guys there, and they have their own plans concerning the ripening harvest.

The smart lad with a keen eye has to look for another young branch with good perspectives for growth and fruiting. To jump or not to jump? Some other smart lads are already jumping over there, and the branch can easily lose attractiveness and even get dried.

So the best way out is to grow an idea of one's own, one's own branch, and protect it!

Around us, there are a number of striking examples of the development of individuals and whole countries.

Of course, successful people eagerly tell us legends about their diligence and are unlikely to hide the secrets of their wealth and their power of influence. The secret is not only in the source of money they got to begin their business but also in the motive and the objective they pursue.

Sometimes it is wise to ask oneself: What do I myself want? A piece of the pie as a reward for my service or a pie of my own as a result of my labor?

In spite of the reference of legendary intelligence of the people of the former “Empire of Evil” most of them, people as a matter of fact, have no idea of how to start a business of their own and build a firm house for their family. Realizing that nobody is going to present them with anything that they will have to make use of their own talent and labor, they are in a state of a bad hangover. Politicians, at best, can do something to give them ground for their work, but they will do nothing else for them. And many of them not only young people, have to choose a way of further life – either to create a business of their own or build into the hierarchy that has a doubtful smell and reputation.

By the way, the choice is rather small. Either you yourself choose your objective and try to achieve it, or you will be chosen as a means of realizing somebody else's objective. Either you will act at your own judgment and, probably, suffer due to your own success or the short rest in the shadow of your “careful” boss.

We can place all our deeds, intentions and ideas in four baskets:

1. *Actions which at the beginning can be evaluated only by God.*
2. *Actions which are the source of your career and business.*
3. *Actions connected with people nearest and dearest to you.*
4. *Actions not worth doing at all.*

The way of distribution is a matter of taste. But it is the nature of a human being to omit point 1, jump over to point 2, then 3, then 4.

At point 2 we earn money, then spend it at point 3 and 4 and then carefully repair our old boot or watch foolish TV programs clearly understanding that these actions belong to point 4.

We strive to be in conformity with the surroundings where we live and often bury our own ideas and popular ideas of others. We exchange our own interests for the enjoyment of the favor of our nearest and dearest and colleagues. We lose more than we achieve. Therefore, it's not surprising that people possessing power and wealth perseveringly and openly stand up for their own interests and objectives. But where can we find a worthy objective and money, strength and time for its realization?

It is not in hard work where the main secret is hidden. It is the idea of avoiding non-effective and foolish work.

The idea requires a good place, a cozy nest. Just wait a little, and then it will come. It is necessary to protect the place from garbage and fatigue. Hold it open for fresh ideas and talented people. By choosing the most important and rejecting the secondary, we raise our consciousness a step higher. The search for a harmonizing pair: the idea and means of its realization has always had a successful and happy end. Anyone can do it.

That is the formula of success!

What is implied by a cultured man today?

The one who can read and write!

This answer has always been false and out of date. A cultured man is one who understands people, who understands technical, biological, and social systems he lives in. It is an independent individual, capable of creating a useful product and defending his right. Anything else? Sure, he knows exactly what he is doing now and what he is going to do tomorrow.

The Strategy of Struggle

Every day at all events we have to defend our opinion, principles and interests. It happens at work among colleagues, during negotiations, at a shop and even in a family of our own. This is the struggle for survival in its easiest and even pleasant form. But sometimes we have to think and get ready for a se-

rious struggle, when we clash with an aggressive and cruel rival – with an enemy. And now the formula of successful struggle is really necessary for us:

Resoluteness x information x suddenness x strength

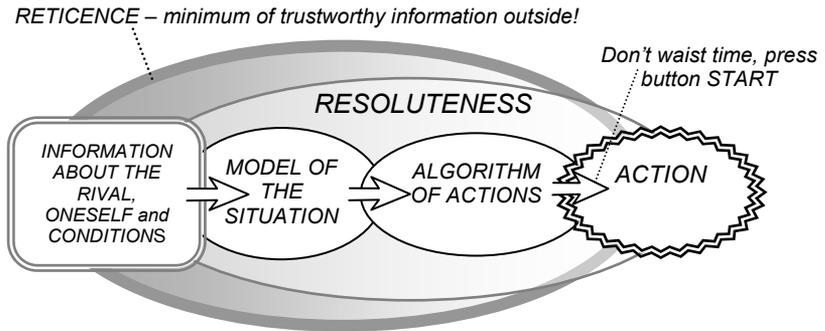
RESOLUTENESS is a key point. In order to start acting and to act effectively, one should believe in the possibility to achieve the goal and desire it. He should foresee its result, not the difficulties of its achievement!

How much information do we need to start acting?

Apparently, the expectation of full clarity – 100 % of the whole information about current events – is equal to loss. It’s hard even for a detective to get the whole information about the recent time, let alone historians. In a role-play, one can be late without having half of the “necessary information.”

RESOLUTENESS (DETERMINATION) is an alloy of understanding the situation and a desire to act. Don’t try to get a complete collection of details. It’s enough to find key points and facts. It’s possible to make more conclusions from the information one has than he thinks. For this it is necessary to have a model of the situation. The map of “military operations” with a scheme of the system structure with its tasty morsels and accessible levers of influence. It’s worth setting on it the “chips” of characters, taking into account their connections, ambitions, strong and weak points, and then their behavior gets understandable and predictable.

This is a **system analysis**. It will clarify the situation; give much new information and a precise idea about your hard or conflict situation. It doesn’t matter in what way and how thoroughly it will be done. If you do this, you’ll get the understanding of what should be done next. Having the map of the situation, you’ll see what your rival can do and what you particularly can do. It’s easier to determine the risk level of each variant of actions before making important decisions. You can find out precisely what information you lack, how to get it or how to do without it.



Clarity is achieved, begin acting!

The most dangerous rival is a paranoiac, inclined to energetic actions. He regards his own imagination as a “natural source” of information and a cause for decisive warning actions. That’s why his actions are unpredictable and limited only with accessible methods.

To resist such a rival, you’ll have to turn into his functional analogue. It means to inflame your imagination and expose oneself to a serious risk of becoming a paranoiac.

SUDDENNESS. Every teenager knows that the victory in fighting face to face is determined by the first precise and sudden blow. It strikes even a strong rival. The state of the rival’s shock is a strong additional advantage. And the matter concerns not only a fight or war. Suddenness gives an advantage in any game. The rival doesn’t have time for effective reaction. This includes the advantage of such a method as **AMBUSH**.

Suddenness is not only rapidity but also reticence which is provided by such methods as **MASKING**, **MISINFORMATION**, **DISTRACTION OF ATTENTION** and **ISOLATION**.

MASKING of most beasts is just a treasure of many varied methods. One prefers to change the color of the skin, another one, the shape of his body. One hides under the layer of sand, another, in thick grass. One pretends to pass himself off as a respectable citizen just for committing a crime. Masking is a universal method

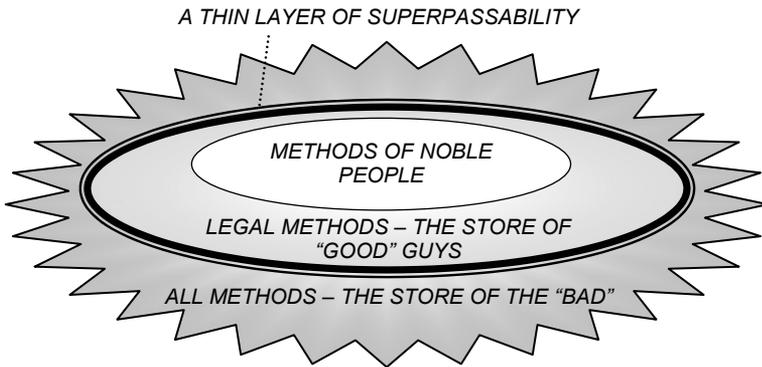
Beasts and criminals often use it. It’s the most popular method in the world of nature and people’s society.

People use the ways of struggle not only at war. They are effective in medicine and agriculture. Insect-pest males, attracted by an artificial smell of their female friends, die in fragrant traps, yielding to *MISINFORMATION*. It's hard for domestic flies to resist the *SUDDENNESS* of a usual fly-beater.

The ways of hunting can be regarded as ways of struggle. Such ways as a *LURE*, a *BAIT*, and *PROVOCATION* are well worked out by fishermen, hunters, police and secret services. They help to fight against pestilent insects, rodents, political rivals and other undesirable elements. “Good” and “bad” guys use these methods.

The green heron throws an insect into the water and waits for an unhappy fish to bite the bait.

It's considered that evil is inventive and good is helpless. It happens so especially when the situation develops according to the rules of bad guys. There are more methods in their store than in their victims' one:



There are limits for the good. There aren't any for the bad. All methods are at their disposal. The absence of limits is their significant advantage which they with pleasure name as the ingenuity.

A lot of people take in Christian commandments with their mother's milk. The more they take in, the more limits they get. Later they manage to win more space in the sphere of legal methods. But most of them will never reach the line of “superconductivity.” In critical situations, it's usually hard for them to resist treachery and they become victims.

Those who know the location of the borders best of all are the people who guard them – policemen and judges. But those, who cross the line, also learn something as their lawyers take their side and become their guides. That's why the rest should know all the legal methods they have at hand.

But here's the main point. In critical situations, defending their families and themselves, they also can use all methods. Determination and inventiveness become more important than thoughts about “admissible limits of defense.” And for those who violate the rules let a reciprocal answer with a slight deviation of “good manners” be a surprise.

It's hard to realize *SUDDENNESS* without *DETERMINATION* and victory without enough *STRENGTH*. If there isn't enough strength, the decisive and sudden mosquito bite doesn't solve the problem. This makes the interdependence of principles of struggle which make a system by themselves. If all its components are capable of working the system, it is ready for the fight and is able to survive. If there is not at least one of the key points, the system is likely to fail.

Make your system complete before the beginning of the decisive fight!

Nobody catches “bad” guys because of their genetic signs and psychology characteristics. The main criterion of the ability to commit a crime is the crime itself. One has to wait patiently until another one breaks the law and does it evidently. That's why they are among us, and we have to defend ourselves and decide who is who among our friends and acquaintances. Because bad guys are usually not such monsters as they are shown in horror films. They are often quite open and show their abilities long before the crime. Those who are inclined to manipulations willingly make it possible to try their bait to all those who desire it.

Let's be more careful and scrupulous.

The Principles of Safety:

To give way to temptation means to lose your independence. Before trying the bait, check if there is neither a trap nor a hook inside.

The Pessimist's Resume:

Sudden tempting is bait!

Stay away from everything that can be a lure or bait.

The Art to be Right

When the documents of some criminal cases were stolen from the court building in the town of *Rybinsk*, no one doubted that those were tricks of the gang of racketeers who were on remand waiting for the trial.

The effect is obvious. No case, no charge! And the criminal gang appropriated the witnesses' evidence and their addresses.

The method isn't new but carried out simply and elegantly. If it's impossible to drag the chaps out from jail, it's possible to do away with the system of proof and "render harmless" the witnesses. Even if the case is restored, the charge proof and the sentence will lenient.

The wives of workers of Zaporozhie atomic power station prosecuted a claim to court to get alimony. Their husbands weren't against it. They hadn't received their wages for several months. By Ukrainian Law a woman has the right to get alimony for supporting the family without divorcing, and an employer must pay the money according to the court verdict.

The delay of paying wages caused by financial difficulties is considered to be a norm, and people found a way to get part of their money without clashing out with the employer.

A sophisticated lawyer remembers hundreds of trials from his experience and can tell you about the most remarkable ones. But there will be fewer reasons and principles of people's behavior in conflict situations. They differ only in details.

Revealing reasons and analogy makes lawyers' jobs easier. Many new cases get into a familiar outline or a standard scheme. All this helps to forecast the trial and devise tactics of defense and attack.

Routine! Is there any room for creative work there?

A good lawyer is an inventor. Defending, he tries to remove contradictions between the law and his client's actions. He follows two main principles:

1. *To smooth and represent his client's actions in order they look natural, necessary and admissible by the Law.*

2. *“To pull on” the Law on his client's action. To interpret the Law in favor of his client.*

A skillful but “dishonest” lawyer is a wily person: his task is to destroy the most dangerous proof and invent a “natural” chain of events which will explain and make the client's action “regular and necessary.” The speech of such a lawyer is a synthesis of a decent version of events. And those people who are listening to him must admit this lie as the truth, as the act of identification.

And now, tremble the victims! It's not enough that you've got from the criminal, but you can be also insulted by his lawyer. He'll say that you have contrived everything or just provoked his client into committing the crime.

Once I was deeply impressed by the speech of a high policy rank on TV. He blamed the girls who by their behavior provoked innocent guys into raping.

The trial has begun. The suit has been prosecuted, and two lawyers get into rivalry. The defense against the prosecution. The result of this argument essentially influences the jury's verdict. The contradictions between the Law and the actions of the defendant are measured with the methods chosen by either the judge or the jury. But the choice depends on the results of the argument.

Principles of the judicial system:

- *A likely version can be stronger than the truth.*
- *The borders limited by the Law can be springy for those who have enough strength and smartness to interpret them in their interest.*
- *The judicial system doesn't find justice, it finds compromise.*

The fact that the truth is on your side doesn't mean that you are the winner. It's a good reason for your rival to “make” his

version of the incident and neutralize the proof. His risk to lose is higher. That's why he'll prepare for the fighting better. He'll try to use all means, and you'll have to overcome the shock caused by his lie. That's why if you want to assert your rights, you'll have not only to declare it but fight for it persistently. First you'll have to understand that there is no abstract justice. There are only more or less honest “game” rules. This is a “permitted zone” itself. There are a lot of open and secret loop-holes in it, rules and tricks, which we willy-nilly have to learn.

Life in society is a game. The success in it depends on how precisely we'll learn these rules and how to use them in our interest.

People, burdened with an excess of fervor, are prone to disobey established laws and generally accepted standards. Other people can see this and surprisingly ask themselves a question whether they can do the same.

The First Principle of Preservation:

A law is preserved even if it is broken.

Corollary: You can tolerate when a law is broken by other people, but don't break it yourself.

In general there are always fewer crime exposures than crimes. Criminals are always a hundred steps in front. And they commit much more crimes than it's possible to detect. It's their main advantage. They will always use it, hoping to commit an “ideal” crime.

But they have a chance to change for the better if they know that reaction to their actions will be immediate and effective.

The Second Principle of Preservation:

A law acts in case it is protected.

Like in techniques here, there are two ways to hold a system element from unwanted actions. Strict exterior limitations or quick and strong negative feedback. Both mechanisms must be a real threat from the outside. Otherwise they have few chances to become inner characteristics of “the bad.” There

are no reliable ways of keeping them within the framework of the rules.

Punishing Lord's right hand can't serve all sinners. That's why people should limit themselves in their thoughts and actions. But these limitations rarely coincide with the Law and often vanish in dusk consciousness. This hides the reason of many conflicts. And the vague border between legal and illegal has always been nourishing surroundings for corruption and criminal.

It's hard to drive through a big city without breaking traffic regulations, at least at trifles. Breaking the rules ourselves, we have to forgive others' mistakes. Someone goes further, and then one more principle begins to act.

The Principle of Collective Guarantee:

People tolerate lawlessness if they break the Law themselves.

There is a way out of the state of lawlessness.

The Third Principle of Preservation:

The law rules in case everyone protects it.

People with a criminal way of thinking often revel in their freedom. Their freedom is like a lavatory with no bottom. There is no limitation in flying down.

Some people can think that obeying rules doesn't give any advantages. Because it's a burden of additional limitations. But it contains a paradox of such limitations. They give moral superiority and solid support for protection of proper legal rights. In normal society such strategy is more effective than action against the Law.

A Dog on a Chain and without it

Thirty years ago my granny's yard was beautified by a dog, *Trezor* by name. He liked children and could smile, but he was constantly kept chained up. It spoiled a bit his character. He was strict to the neighbor's chickens. But he expressed his strictness only when the neighbor's chickens were in granny's

sight. An other times, *Trezor* was absolutely calm and only watched them not peck from his plate.

In front of “the boss,” he became active as thanks to it he got kindness and tasty food.

No sooner had *Trezor* slipped out of the collar than he strangely turned into a merry and a bit worried guy who had to run away on business. He left the yard for a long time losing interest in his service. At that moment he considered himself absolutely free and had a feeling of dignity and self-satisfaction. Like a soldier on holiday.

No wonder. The nature is unified!

A lot of people know the fact that there are strong “personalities” among dogs. The fact that there are strong and not very strong to personalities among people is known even to dogs.

My friend *Vladimir* once told me:

I was walking along a brisk street. The day was celebratory, the traffic was closed and people pleasantly strolled there where not long ago cars were moving. In the middle of the road a middle-sized mongrel was lying and getting warm in the spring sun. I crossed the street and carefully passed round the dog trying not to bother it. In a moment, I felt a sharp pain. The dog bit me at my shin. Why? What for? I can't understand!

Vladimir has worked for 30 years at a big state enterprise which at the epoch of the mature *USSR* was prospering thanks to military contracts and the monopoly on the production of watches with dusk-grey figures instead of hands. He knew a lot of people there. Many big bosses had been his friends since they were students. But it's a strange thing he had only one promotion. He was advanced from an engineer to a senior engineer.

The secret of his stability is probably in his character. He had never shown his ambitions. He had never had them. He combined unique flexibility and inclination to compromises with a strong sense of humor and irony to his authorities. He

hadn't learnt to hide these dubious merits for a long time of his work.

High authorities appreciated his intellect and trusted him to make perspective plans of the enterprise but stubbornly kept him at the previous post. His boss considered him a dangerous rival. From time to time in a state of paranoid storm he painfully and with impunity “bit” *Vladimir*. The dog also used that opportunity.

The Principle of Vulnerability (The Verge of Murphy's Law):
If you admit theoretical the possibility of being bitten, you will surely be bitten.

Psychologists discovered this phenomenon long ago. Its name is the complex of a victim. Diffidence and indecisiveness are considered an invitation to bite or strike a blow.

Don't give this opportunity. Even in thoughts. Having been bitten decisively, strike back on the jaw. You are defending yourself and it's legal. Do it even if you are not sure of yourself. You can lose the fight, but you won't be bitten any more. Dogs are easily trained!

Don't be afraid of the consequences of your blow. The blow struck immediately is an important advantage. You deliver yourself from cordial feelings.

From a potential plaintiff you will magically turn into a more “respectful” category – a defendant. There is nothing easier than to explain the reasons of your decisive behavior. It's much harder to convince the court from the position of an insulted plaintiff.

But the most remarkable thing in this story is that the incident won't reach the trial at all. Your rival, who you have turned into a plaintiff, will be aware of his weakness and will certainly step back. And your decisive behavior will be apprehended like the proof of your rightness and decisiveness to stand up for the truth and your interest.

Safety of the Pyramid

The process of the destruction of the systems is as natural as their advent and development. But if this system is your business, property and life, the safety of the system becomes your personal problem. If you have interests, you have the reason to fight for them. This is the main and the everyday problem for those who have power and money.

The natural process of maturing of the components of a pyramid and their striving for independence objectively leads to the decentralization. And it's important not to lose this delicate moment. It's necessary to detect the sources of danger and to decide which of the two incompatible strategies to choose. **To impede or to help.**

The holdback can be easily justified by the interests of the system. But the suppression of the initiative is a dangerous twist. That's why the best way to prevent a conflict is to propose your own ideas, which are capable of carrying away the people and consolidating the pyramid. If there are very few ideas of your own, you'll have to accumulate and use the ideas of other people.

But what to choose as the accumulator of ideas? A fertile field or a cemetery? This is a matter of taste, honesty and fantasy. But anyway, it will be better if the ideas don't disappear in vain. The greater ideas can be easier detected against the background of the smaller ones. It's enough to put them together. It is this way that people evaluate the ideas and get the impulse for their own discoveries. It's humanely and useful.

And to suppress the sources of the ideas is stupid and dangerous. Nobody likes to watch how his idea is being killed. But it's human's nature. It's difficult for the people to understand the depth and the effectiveness of every idea, and understanding causes jealousy and irritation. People learn fast how to find ways to put aside the new ideas and kill the most dangerous and unsuitable of them. It's typical for wild nature as well. The larvae of the gnat secrete a special substance into the water, which impedes the growth of the younger larvae. Thus

they fight for the right to use the food resources of the puddle. The pressure of the “old” over the ”young” under existing conditions of food shortage is not only the gnats’ destiny. This is the property of every hierarchy.

To lose the useful ideas is unforgivable foolishness and an obvious sign of incompetence and haughtiness. If you can’t understand the idea – simply put it aside. When the time comes and the soil matures – you’ll recollect the idea. Understanding comes after necessity!

We may not recognize the independence of children, but how shall we treat those who have really achieved self-sufficiency? There must be a compromise, the readiness to respect the interests of those who have really become grownups. No side will benefit from a conflict. Many people know about this and prevent themselves from a great number of unpleasant things. It is not our problem of how beautifully to register the divorce. We should find a way to preserve our own pyramid.

The best recipe is leadership, the ability to generate ideas and the readiness to carry out the most difficult tasks!

The basis for your idea and the system itself is your property. Everyone should understand this. Many people don’t like this, but they will get used to it if there is no impulse for new conflicts.

Common interests are the basis for any partnership. People should see how they benefit from the development of the system in terms of money and power.

It’s very difficult to run a huge enterprise alone. A **team** is in great demand. The people who do what they say, and say what they think. Your task is to tell them about their prospects. But there shouldn’t be many such friends-colleagues because the great number of them may cause conflicts of interests and quarrels.

In the pair partner-partner or boss-worker, there are always two constant sources of contradictions:

- *Different interests and goals.*
- *Different ideas on how to reach the common goal.*

Establishing relationships with people, we strive for overcoming the first fundamental contradiction. Then the second. Finally we set things going and it seems that all is OK. But the situation changes every day and the threat of escalation of the tensions will constantly exist.

If you can smile, listen to other people and sometimes say “yes” – the problems won’t take you by surprise.

Everyday control over the structure and the situation is not a ritual. It’s a severe necessity. The pyramid with its workers is an inertial system. And the more efforts you have contributed to building it, the more inertial this system is. Nobody will alter the adjusted pace of his life without a severe necessity if he realizes the absence of any prospects and the criminality of his actions. Every professional strives to carry out his duties effectively. As a rule, professionals are reliable people. They love their work, and they are absorbed in it. They are nearly incapable of betrayal and senseless conflicts. The only thing they need is care.

When everything goes according to the plan, inertia is useful, but if something in your system goes wrong, you’ll have to contribute much time and efforts to improving the situation. That’s why it is dangerous to sleep while driving.

To retain control over the ship and to follow the right course is the main task of any captain. There are always enough problems inside and outside the ship. Huge problems demand changing the course. Small problems demand attention and solution, but are they worth changing the course? A reactive and fussy captain is not a real captain. With each thoughtless jerk of the steering wheel, he decreases the reserve of obedience and loses control over the system. Is it worth obeying the orders if any new order comes every minute and cancels the previous one? Nobody will take the captain seriously if he is not able to hold the wheel.

Don’t trip yourself up. Try to avoid situations when a crime may be committed. There should be no “collective” access to the safes, storehouses and secret information. There should be no clean sheets of paper with your signature and

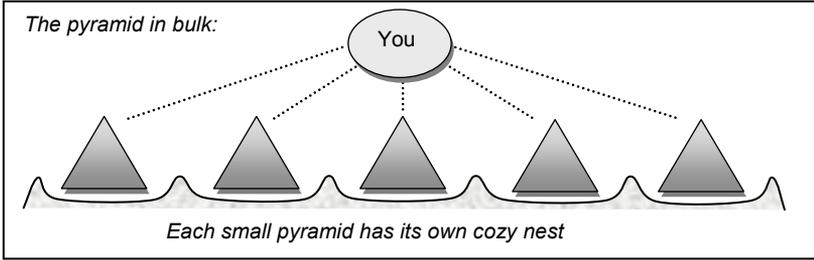
seal. No notes, documents and revelations which can compromise you. If you constantly give people the opportunity to deceive or rob you, sooner or later they will certainly deceive you or rob you, or trip you up. It's nearly a law! Even friends may let you down. A double loss!

Do not accumulate inner problems. You shouldn't keep in your structure "the ill-fated and the deprived." This is a real threat. Quarrels and stresses are a loss of time and effectiveness. Accumulation of anger and hatred around you are dangerous properties of powerful personalities. You shouldn't create an area of hostility and envy around you just for the sake of self-affirmation and proving your competence. All the conflicts should be settled. Otherwise, these people will do you a lot of harm. Their passiveness and torpidity is harm as well. This is a disease and you should fight it. There are a lot of remedies at your disposal. From a sincere talk to dismissal, including of course the conventional experience of giving premiums and the penalties. And you are not the only person to do it. Let your assistant do it, or the regular lawyer, who is pluralistically a psychologist. He will be the mediator and the damper of anger and complaints addressed to you. It is possible and sometimes even necessary to postpone the solutions for these problems. Time is one of the best remedies, but you shouldn't accumulate such problems.

The policy of threats and bribery is very old. Psychologists say that waiting for a reward works better than the threat of punishment. All of the bank robbers confirm this fact. That's why you are to cut the expenses on the column "threat" and add the column "bribery." This is an old method, but everyone is pleased to get some extra money for a good idea or simply accurate work.

The large hierarchies are intended for large businesses or for war. They are predisposed to diseases, described by Parkinson and Peter. That's why starting our own business, we won't build the classical pyramid. We won't put all the eggs into the one big basket. We'd better split our big business into several separate businesses, which are in separate cozy nests.

Beautifully packed small sweets and a big decorated cake have the same festive appearance. Besides, it is simpler to throw one of the bad eggs away, than to treat the whole huge pyramid with a “gang” of rivals struggling with each other.



The principle of safety:

It is safer to store the crystal vase in separate pieces.

Someone may say: “This is profanation of centralization. This method is called divide and rule.”

We won’t argue. We know that every leader needs his own area of work, his own area of responsibility. Locked under the arch of the pyramid, they are quarrelling and have no time to do their job. That’s why every captain needs his own ship. You ought to agree with it, because you are the captain of the whole fleet.

But the old and the good method “**on the contrary**” should be always at call.

Every system has its **optimal dimensions** within which the system reaches the top of its effectiveness under existing conditions. That’s why we ought to admit that the crystal vase should remain a crystal vase, if it’s really a beautiful vase. 1000 basins with water will never substitute for a swimming pool.

Discussing the peculiarities of the **contract** with your business partner you shouldn’t demonstrate your greed or the excessive scrupulosity. Of course, you should discuss with your new partner 95% of the possible outcomes of your first transaction. The other 5% is your risk and a method of checking. If your partner turns the 5% of the obscure conditions to

his own advantage, forget about him and never have business with him.

You should be tolerant towards your **competitors**. You may be in sympathy with them in the future and even become friends. They won't tell you their secrets, but you may guess some of them. The competitors are as useful as a mirror.

The Delicate Art of Negotiations

Negotiations are neither a war nor a hunt for the beast called Luck. It's rather systematic cultivating of the soil with the only concrete and pragmatic goal – to achieve advantageous conditions while concluding of a treaty. But the benefit should be mutual!

Of course, everyone wants to get a larger slice of the pie, called “common success.” To buy cheaper and to sell at a higher price. That's why minimum demands of the seller, maximum possibilities of the buyer and the degree of their interest in this transaction do not lie on the surface. Each side tries to detect this information earlier than the other side. This is rivalry with its more or less fair rules and methods.

If you want to undertake this job, you should remember from the very beginning that in a civilized society you have more chances to reach your goal with the help of mutual understanding and coordination with the business partner. And of course without the demonstration of hostility and offence, which brings any business to a deadlock.

Negotiations are a responsible and an exciting thing. Disagreement provokes an argument, and as you know; an argument can carry you away, and you'll forget the goal of the negotiations. So, is it worth arguing, especially with those who can't make responsible decisions?

Every negotiation has 4 sides:

- *You*
- *Your partner*
- *The rules of the “negotiation battlefield”*
- *The generally accepted norms and human values*

In the heat of the argument your partner may forget about the existence of the third and the fourth sides. Your task is to show him delicately that they are on your side. Thus you can not only correct the mistake of your partner, but also win a point and take the initiative!

Energetic people are sure that the success of negotiations depends on the ability to speak much and convincingly, impose your opinion on the partner, put him into an awkward position and finally "defeat" him, forcing him to agree. Such tactics are successful, but only for those who simply want to "snatch their slice of the pie." After a period of time, they will find out that they have lost forever those partners, whom they "persuaded."

What's the mistake of such tactics?

The mistake is the lack of humane contact under equal conditions. People do not like when they are deprived of the right to choose. Their desire to buy evaporates under the tenacious eye of the seller.

That's why it is worth putting yourself in the place of the buyer and consider the problem from the other angle. You will see not only your advantages, but also your drawbacks.

"Beauty is a great power." That's why sincerity and a clear laconic speech, slightly dressed with an inoffensive humor, makes the communication pleasant, favors trust and in the end, success of the negotiations.

A dialogue free and equal in rights creates a friendly atmosphere. And as you know, friendship has a binding power. If your negotiation partner is a pleasant interlocutor and besides he has devoted much of his time and attention to you, it means that you nearly have to agree with him at least in some questions and buy some of his products. Is it not true?

But you should separate friendship and business. That's why when making efforts to attain trust, it is worth preserving "a drop of paranoia" so as not to step on the magic rake (with a delayed hit) which your partner "has accidentally forgotten to take out of your way." It is desirable to detect and to eliminate such surprises before you accept some serious obliga-

tions. But you needn't fall into anger if there are a lot of such traps. Intense emotions make you blind and in the end turn against you. That's why it is better to refrain from striking a bargain so as not to get involved in a difficult rivalry and quarrelling. But if you have gone too far into the negotiation process, you'll have to accept your partner as he is and patiently defend your interests without any emotional outbursts. By doing this you don't have to be an insensible mummy. Sometimes it is worth showing your partner the emotional evaluation of his actions. But it is useful only in case he is a man of conscience. Otherwise he will manipulate your feelings as if he plays a musical instrument.

Partnership presupposes equality; that's why if you feel the elbow of your partner with your rib, you will get the right to act adequately. It restrains aggression and favors mutual respect.

The desire to avoid acute conflicts induces the two sides to make some short but confident steps. Such unhurried pace creates a reliable foundation, gives the possibility to study the partner's interests, to get used to his behavior and to avoid some rough mistakes. But if the conversation turns to be a prolonged one, you risk forgetting or losing sight of the things you have agreed upon. So, mistakes and misunderstandings while considering the concluding document become nearly inevitable. That's why from time to time you have to sum up the information. It's not only a formality or accuracy. It's the fact of agreement. Still not in written form, but every thought, specified and summed up, will finally be formulated as a concrete obligation – as a clause of the agreement. This simple method considerably simplifies the work on the text of the agreement. Besides, both sides satisfy themselves that they are capable of listening to each other, understanding each other and taking serious decisions. As a result of this, the whole procedure of concordance is getting simpler, and the ground for misunderstanding and further discord disappears.

The routine of the dull negotiations with the discussion of small things can abruptly be interrupted by some perfect and

very advantageous proposals. And under the new circumstances, it is just like fishing. If you immediately rush forward – you’ll scare the fish away. If you are late with a strict answer – you’ll miss your luck.

All normal people treat the abrupt changes and unexpected proposals with suspicion. The thing which doesn’t blend with the conception system of one of the partners can easily frustrate the transaction. Unplanned inventiveness always looks suspicious, and it’s not worth demonstrating it. That’s why you should seek the solution of the common problem together, and approach these radical solutions together as well.

One of the partners doesn’t need persistently pushing up things. This is the means of exerting pressure. People need facts in order to compare and accept their own deliberate decisions without outside pressure.

To listen to your partner carefully means to understand what he lacks for making decisions. If you manage to listen to him, you are sure get the opportunity to tell him about your achievements and provide your partner with the information, which he needs. Almost for sure, it is the thing he wants to know, and you won’t spend your time and efforts in vain!

If you have been respectful with your partner and sincerely wanted to be useful, you are likely to reach this desired moment of agreement and understanding. But before the moment of saying “good-buy,” be sure to ask the main question, if he really wants to buy **this**. And if you have been a respectful and pleasant interlocutor – you’ll almost for sure hear “**yes!**”

But it could be the other way. You have already spent a huge sum of money and much time for advertising, but instead of the “avalanche of demand” only one client comes to you, who intends to buy an insignificant thing and doesn’t look trust worthy. Is it worth dealing with him?

The appearance and behavior may speak a lot. Nine chances against one that you’ll exactly define, who deal with you. But is it worth losing the chance to win the prize by showing him the door with disdain and coldness?

Not only people who make decisions can conduct negotiations, but also people who have come with the aim of reconnaissance and hold secondary positions in the hierarchy of their firms. Such people have only a deliberative vote, but they prefer not to speak about it. So as not to lose your time for useless disputes, try to find out immediately this circumstance. Excessive delicacy is not appropriate here. You'll save not only your time, but also the time of your partner, who is not "burdened" with power. The saved time will be useful for him to comprehend his role and the prospects of his career.

Firmness during the negotiations is in the end a more effective quality than mildness and a desire to reach a compromise by any possible means. Retreating after the very first onset, you lose not only your face and money, but take additional work and problems on yourself. You may easily agree with the small obligations and additional insignificant services. But what should you do with the clauses, the value of which is not determined yet? Before leaving your signature there, try to find out the value and the essence of the new clauses of the agreement. You'll need consultations, new data and calculations. This is a good reason to postpone the decision. The threat of dragging out the negotiations can stimulate their fastest conclusion under your conditions and in your favor.

You'd better show "unlimited" flexibility while establishing understanding and demonstrating respect. It's really difficult for unfamiliar people with a different world outlook and culture to understand each other. You have to listen to them patiently and explain your point of view in detail. You have to do it if you don't want to take the desired for reality and prepare the ground for further disappointment and unpleasant surprises.

The decision to change the transaction value should be dictated by the situation on the market, but not by the pressure of the business partner. Such a stand always commands your partner's respect, and excessive tractability arouses suspicion and provokes the temptation of a stronger pressure. And if your product doesn't have any evident analogues and substi-

tutes, the price concessions won't influence the state of the market. That's why it is really worth remaining firm, but without any bravado and offensive slogans. Because the situation on the market may change, and you'll have to bring the price down.

You should remember that the market is full of different surprises and paradoxes. It has been noticed that the demand for prestigious goods and software products is not connected with the readiness to bring the price down. Just vice versa, the demand becomes noticeably greater after these products have gone up in price!

It's still a riddle, what makes a consumer buy this at a higher new price. The fear that the product will further go up in price? A strange virtue of people to take a high price for the sign of quality? A wish to assure themselves that they can afford this?

We don't have any simple and strict answers to these questions. The exhaustive answers could be hidden in the subconscious' of the consumers, or could be so primitive that we refuse to believe them!

A Chance to Survive

To find the way to salvation in case of a crash is a creative task. The preparation for its solution is an intimate affair. People are not inclined to speak aloud about their chances to get into an plane crash, and they try to think about something pleasant. But sometimes you have more chances to get into the company of unlucky persons than to win in a lottery. That's why everyone has the right to see to his safety even before buying an airplane ticket.

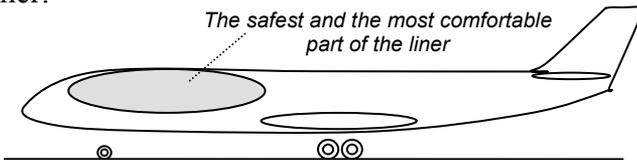
You can considerably raise your chances of a successful flight if you make a happy choice of the airline and the seat in the plane. The large airlines can easily organize maintenance and a thorough control over the technical state of their planes. They try not to employ old and unpopular liners. Exotic and “antique” planes are the property of smaller companies. They

have to earn money by charter trips which are, as is well known, even more dangerous.

If it is so, then buying a ticket to the flight of a large airline you decrease the possibility of complications. But if the unpleasant thing happens, your relatives will certainly receive enough attention and a considerable compensation.

The purchase of a ticket is a significant moment. You'll be able to heighten your chances to survive in case of a crash if you get the seat which is close to the cockpit. The first third of the plane's body is the safest and the most comfortable part. It is moved away from the huge fuel tanks, adjusted to the wings. In case of an emergency landing the strike against the land or trees will destroy the fragile cover of the tanks, and hundreds tons of fuel can within a second turn into a giant torch, which usually covers the central and the tail parts of a liner.

The comfort in a plane during the transoceanic flight is not a useless thing. It depends on the level of noise and vibration rather than on the size of a plane and the quality of food. That's why it's better to stay away from the plane's engines. This is the second reason to choose the seat in the fore part of the liner:



Getting on board the plane, mentally play the following game. Try to find at least two ways to get out of the plane in case of a crash. Try to notice where the emergency exit is located, and listen attentively to the stewardess, who speaks about the oxygen masks. The salon of the plane at an altitude of 11 km. is like an inflated football. Inside there is much more pressure than outside. If the hermetic cover of the salon is destroyed, the pressure will immediately fall. Without oxygen, it is possible to lose consciousness abruptly or even die. That's why before rushing to help your child or a pretty

woman who occupies the next seat, put your own mask on and only then help the others. Your easy-tempered and accurate actions will be an example for those who are at a loss. They will watch your actions and do the same. Personal example is the best way to help.

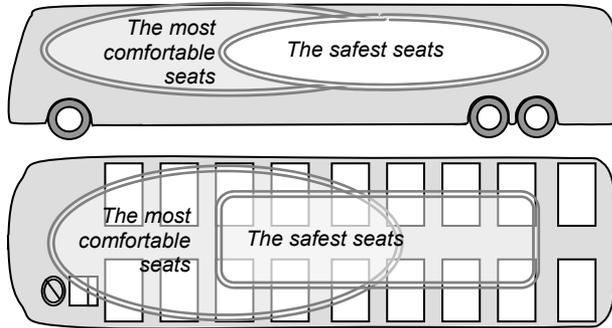
Solid ground under your feet is a pleasant feeling. Every sailor and pilot confirms this fact after a long voyage or flight. A seat in a comfortable car or a bus also makes you happy. We get into the bus and envy a little those lucky man who sit before the huge frontal window. They will see more. But one should pay for everything. The frontal seats could turn out to be a "sweet" trap. In case of frontal collision with a truck, the driver and the passengers of the first two rows will take the most violent hit. They practically have no chances to survive. That's why don't take to heart, if you don't get the seat before the window or you have to go upstairs to the second floor, or even go to the very "stern." You have more chances to suffer from the headache during a shaking, than from the trauma in case of a crash.

A double-decker is an impressive construction. The huge size and weight ensure trust and the hope of comfort. But it's a mistake. This monster is not suitable for a long-distance travel. The constructors tried to make it safe and steady, that's why they sacrificed amortization to it. The shaking of the back part of the salon even on a considerably good road seems to be unbearable for many people. And a great capacity of these buses causes additional problems which you have to face even while boarding. So you'd better watch and enjoy these technical masterpieces outside them.

The best variant is a small and one-storied bus, which salon is positioned rather high. Comfort and safety here are in better correlation.

The areas of safety and comfort in a bus do not totally coincide with each other. There are not so many safe places. They are located rather far from the windows and the frontal part of the salon. In case of a sliding strike against a post or a

truck, those people will suffer who occupy the seats close to the windows.



The seats, which are close to the gangway, seem not to be comfortable. The seat's back and the bosom of your neighbor restrict the field of view. But on the other hand, you won't have to ask anyone to let you pass to the exit. Besides, a part of the gangway's space becomes the property of your elbow.

We Choose, We Are Chosen

You have chosen this advertisement in the newspaper. You want to get this job and you are going to have an interview with the employer. Yes! He will look at you more or less sympathetic. You have come to be evaluated – so you'll have to bear it. You should take a sober view of things. If there is only one vacancy, but 10 people have come for the interview, then theoretically your chance of success is one to ten.

But you know something that the other applicants can't and don't know. That's why now your chance of success is more than 1 to 10. And now you'll have to employ the following methods and principles from your arsenal.

Co-ordination. You should understand immediately what you are asked about and answer the question without a long pause or haste. That's why you should pay attention to the main point of the question rather than to the appearance of the interviewers, the number of them and their arrogance. Let all these peculiarities touch somebody else. Friendliness and cor-

rectness is simply your style, and the interview is not a war. The person who asks you a question must become your ally after you answer this question. His subconscious should take your side. If the question is a “biting” one, you should attract the sympathy of the other interviewers by your less “biting” answer. You should demonstrate that you are a future partner, but not a “paste” with boundless tolerance!

Resolution. Don’t be afraid of the number of the interviewers. The greater their number is the simpler and more formal their questions will be, and the more power your diplomas, recommendations, questionnaires and the results of the preliminary tests will have. There will always be a man who will look all your papers through and fairly evaluate them. After all, someone is to look all your papers through and throw light on some of your advantages even if you have forgotten about them. That’s why try not to devote much time to explaining something that is evident. They have already noticed the emblem and the color of your diploma – now they want to understand what your personal value is.

Principle of compensation. All people have drawbacks. The absence of them is the worst one. Don’t be afraid to demonstrate your slight weaknesses and physical defects. The interviewers are experienced people – so you are not likely to hide anything from them. You can stammer a little bit, have an appearance defect, be rather overweight or short, but you shouldn’t be stubborn, clumsy, stupid or slow-moving. They won’t forgive you these things. You should simply demonstrate your two main advantages: ability to adaptation and determination to act.

The right self-evaluation. None of your drawbacks is an obstacle until it exceeds the acceptable norm. This norm is not a secret. You should keep your eyes wide open and differentiate pleasant people from unpleasant. People responsive and pleasant in dialogue are a norm. The interviewer will hardly overtake you after the interview and explain why you haven’t

been chosen. It's not his duty. It's the duty of your school teachers and friends. Their response to your actions is the mirror, which sometimes is worth looking in. Make use of it. Try to recollect which manners, mood and style of behavior they liked more. Try to behave that way.

It's difficult to govern the reaction of other people. The majority of people, including me, can't do it and won't learn how to do it. It's a talent, charisma or hypnosis. It's not our field of knowledge – we'd better omit it. However we shall note that the interior concentration and resoluteness is still appreciated very highly.

Preparation is a powerful weapon. Like it or not, your maneuvers will always be peculiar and original and nobody will confidently say whether they are the result of a banal training or a splendid impromptu. That's why preparation for the interview is half of the success. You'll have to stand before the mirror and perform. It's difficult, but now it's high time to face the truth.

Just like every advertisement **you should demonstrate your exceptional qualities!** If you believe you don't have any, show how punctually you observe the accepted norms of human relationship, how perfectly and with pleasure you understand the peculiarities of your future job. Show your good reaction, tolerance, sense of humor and, what is most significant – a sense of tact – the exact conformity with the accepted norms.

Predictability. Let the interviewer read the answer on your face before you open your mouth. Give him the opportunity to foresee the answer and the occasion to assure himself that he understands you more than you understand yourself. He'll enjoy this because he wants and must be perspicuous.

Originality. You have recently finished school and now the interviewers ask you to tell them about your school, meanwhile studying the marks in your school-leaving certificate. There are excellent marks there, and you say that you love your school. It's a mistake. They may think that you are a

rare bore who used to be appreciated by the old teachers. That’s why speak boldly about how boring it was at school and how eagerly you are seeking a new interesting occupation.

If your school-leaving certificate doesn’t shine with excellent marks, it’s evident that you didn’t feel comfortable in your school. And now it is high time to shock the interviewers by your enthusiastic evaluation of the school. Sometimes the headmaster or the teachers didn’t understand you but you got on well with the classmates. Maybe you are a little bit wayward, but considerably resolute. You are a good friend and a firm link of the team. After all, the interviewer doesn’t seek a boss for his company; he is looking for the members of the crew or simply workhorses.

Activity. If you are allowed to ask questions about your future work – do it. Because you really want to know, who you’ll work with and what equipment you’ll use. By doing this you can slightly emphasize your competence and your claims on the salary and the quality of the working place. It’s not worth asking about the model of the chief’s car and the air-conditioners, but you may ask about the age of your future colleagues. Your comfort will depend on this rather than from cool air.

If you decided to turn the interview into a discussion of the contract with the employer and began to enumerate your requirements for the working place and salary, you chose the most honest way to defend your interests before the employer. The interviewer will evaluate your ability to become a trade union leader or legal adviser. But almost certainly these vacancies have already been occupied, and you’ll have to seek another advertisement and demonstrate your business grasp in other place.

The number of the stages of selection is in direct proportion to the number of applicants and the temptation to get the job. And like an experienced sportsman, you’ll have to distribute your power wisely. At the first stage, you’ll need the album with diplomas and a number of strict answers to the

formal questions. The original ideas and exceptional qualities are the valuable “charges.” You’d better save them for the decisive moment when the attention to you is at maximum. During the first stages, they are effective as well, but they can not always be noticed and evaluated.

The contest, as well as the sport affairs, requires experience and luck. That’s why be courageous enough to go through the whole procedure. You have come, spent your time and efforts – you must get to know how it occurs, how people feel and behave and who will be the winner.

Remain calm. Imagine that you are an extraterrestrial, journalist or researcher, who has come to watch the contest. You are simply interested in the process. In case of failure you’ll need this experience for the other competitions, contests and exams. You’ll have to take part in such competitions, when you choose or being chosen, all life long. You should admit this fact and refrain from the unnecessary soul pains. That is simply life! Many people understand this. It is not in vain that they have a thorough haircut and wear a white shirt with a tie. This subconsciously makes other people take you for a serious person and even pay you the price, which you demand.

Employ your secret ally. Some of the interviewers, consciously or subconsciously, will definitely single you out and remember you. Even if only one of them does it, he’ll become your ally. You’ll hardly be sure who it is, because a person who looks at you with sympathy and cheers you up with gestures can in reality be your “mortal enemy.” But you should know that there is a person who is in sympathy with you and secretly helps you. Help him and prove that you are the person they are looking for!

Treat it as usual work. Patiently, persistently, inventively. The questions, even the most unpleasant and dull, should interest you. Do not show boredom or aversion. A stupid question is an excellent occasion for a wise performance.

A general and not concrete question gives the possibility to interpret and answer it your way. But you should do it without a long pause. If there are a lot of interviewers, this long pause won't be interpreted in your favor, but they will interpret the immediate and wrong answer in your favor, because the question is a poor one. That's why new questions will be shorter and simpler.

All people know that to answer a question with a question is a bad form. You'd better repeat the question in your own words as you understand it, but as a "headline" of your answer. This way it is easier to eliminate misunderstanding and accept the language of communication, which makes you feel comfortable. Because the interviewers are interested not only in finding some of your secret defects and drawbacks, but also in revealing your talent and best qualities.

You should have no contradictions in your appearance and speech. The collar of your leather jacket, made of natural fur, doesn't show your sincere love for animals. And a statement, that you are a member of the "Green peace," doesn't go with the huge engine of your old car, which consumes too much fuel. There must be no such contradictions because they destroy people's trust in you.

An interview is more or less a long corridor with traps and test forms. They put you inside these forms and watch attentively if you meet the requirements. They escort you along the corridor and friendly push you with a bamboo stick. It's their right. You can only count on the accepted norms and Law. Don't allow them to cross these boundaries. You'd better at once deny such "cooperation," than become firmly convinced of your suspicions and suffer from their roughness in the future.

So, the unpleasant questions won't hurt you. They simply show you, who you deal with. But if they cross the permissible boundary, quit without any hesitation. Your task is to find a good job, but not to become a scapegoat.

Their irony will detect your irony and your ability to defend yourself as well! You'll show friendliness for friendliness, but without surplus!

Love has its limits. Keep your distance and personal stability. Excessive flexibility and reactivity are suspicious things. Your own music should play inside you, and your personal style must be seen outside. It's not so difficult. Simply obey your personal taste and do not offend other people.

If you pretend for a concrete vacancy in the formed hierarchy, you don't have to demonstrate your personal special interests. Analytical abilities, inventiveness and self-sufficiency are highly explosive things for every hierarchy. The hierarchy needs an ideal machine rather than an ideal man to obey orders and to carry out the work. It hasn't found such a machine, or the machine has been too expensive – that's why it announces the competition.

You offer your service – so you'll have to find the golden middle: something between the posture of the ideal machine and your own natural state. You don't have to overexert yourself and deceive the employer. You both need to make the right choice. After all, the posture of the ideal machine doesn't suit everyone, even if he desperately needs money.

How to Choose a Car

There are a lot of them – new and second-hand ones. And it's a difficult task – to find the best of them, taking into account the price criterion of and quality.

There are some lucky men, who know for sure what car they are going to drive in the 21st century. But there are also some people, who can hardly imagine their ideal. They simply don't want to make a mistake. They need to get the maximum of safety and mobility for the money, which they are ready to spend.

We want to add to your taste and luck some simple pieces of advice.

The modern cars are reliable, but sooner or later we have to repair them. That’s why if you have found a kilometer away from your house the service center of a large car manufacturer or simply an experienced mechanic, who shares your taste – you needn’t rack your brains over it. You are doomed to buy the car which they can repair. Because you don’t want to send your car a hundred miles away or entrust it to every person who has a universal spanner.

Being rationalists, we never the less value the design very much. It considerably influences our choice. But as soon as we get inside and drive a little bit, our impression radically changes. Driving the car, we expect of it easiness, obedience, a good field of view and comfort. This aspect becomes the main one, as in family life.

Although all the cars from different parts of the civilized world are very much alike in the machine parts, maintenance expenditures may greatly differ. That’s way if you are not a masterly mechanic, you’d better refuse at once those models, which in their “youth,” were expensive and prestigious. The maintenance expenditures on these cars within a year may become comparable with their cost.

It seems to be strange, but the fuel consumption practically doesn’t depend on the size and weight of a car. It basically depends on the volume (V) of the engine!

If you have got a car with the engine of 2 liters, be sure you’ll need 2 liters of gasoline for every 20 kilometers of the way. Of course, there are good and bad engines, but the fuel consumption for 100 kilometers in the city for the majority of modern petrol engines is quite exactly defined by the index $5V$ (five volumes of the engine). You’ll definitely make sure of it if you look through a detailed car catalogue.

But $5V$ can be used not only as the index of economy. It is also a good criterion for perfection. Not all the manufacturers can boast that their cars with petrol engines consume less than $5V$. I looked through the catalogue with detailed data on 600 models on the European market, and I found 24 such vehicles.

Besides, the majority of them are prestigious and expensive cars with the engine V of more than 2 liters.

It's noteworthy that the smallest cars with the engine V of less than 1.3 liters, which are designed to economize, are considerably "voracious" in reality. Their vaunted economy is not more than a legend. Of course, you can win 1 or 2 liters, but you'll definitely lose 50% of comfort and safety.

You'll feel calmness and confidence only if your car doesn't greatly differ from the majority of the vehicles in terms of size, weight and speed. You'll hardly need for this more than 80 horse-power for 1 ton of your car, but make sure your car weighs no less than 1 ton. It's a good sign of its relative safety and comfort.

Of course, under other equal conditions, you should try to choose a motor with a better turning moment, which will allow a confident and faster starting without excessive roar and effort. Such a motor doesn't demand frequent switching of gear. Don't be surprised if it appears to be a diesel.

If we compare a petrol and a diesel engine on the basis of the economy criterion, we'll find out that diesels are considerably less "voracious." I was also greatly amazed, when I found out that driving cars with a petrol engine was twice as expensive as driving cars with a diesel engine.

Skeptics in our country don't trust much the diesel engines. In winter, the substance in the fuel tank may turn into the thick jelly due to the surplus of paraffin; and the "experienced people" will tell you a number of horrifying stories about how the fuel may freeze practically while driving.

But the diesel has a positive side! While on a long-distance travel in cold winter you can sleep in warmth with the engine on. This "comfort" will cost you only 2 liters per hour. You can sleep calmly! The reverse stream of the warm fuel won't let the fuel tank freeze. Besides, a chance fire in the car with a diesel engine is very low.

The starting of the engine in winter when the temperature is 25°C below 0 can turn into a difficult, creative task. The fuel may "freeze" in the diesel engine. In a car, powered by

the petrol engine the carburetor may “freeze.” What’s worse is a matter of taste. But my personal experience prompts: In freezing weather it is easier to start the diesel engine. Besides, the frozen diesel engine doesn’t show the nervousness and uncertainty which the frozen petrol engine frequently demonstrates. And if you are a supporter of the rule “switch on and go” – you’ll evaluate the diesel. It works confidently without jerks and the risk of inundating the sparking plugs with the surplus of fuel.

A car with a petrol engine has been at a standstill for a month. The attempt to start the engine, especially in cold weather, can be a failure. And it is not only the old accumulator to blame. Such a motor usually lacks a set of the “fresh” sparking plugs with clean electrodes. And you’ll have to substitute or at least clean 3 out of 4.

Some cranks think that a tank is the safest car. And its weight is in direct proportion with its safety. In peacetime, of course.

They are right. In case of head-to-head collision of a big car with the mass M and a small car with the mass m , the passengers of the smaller car will suffer the blow, which is M/m times stronger than the blow, which the passengers of the bigger car will suffer.

Apart from the feeling of danger, you’ll find at once one more significant drawback in the salon of a small car while driving on a rough road – noise and shaking. It is not so noticeable in the city while driving at a small speed, but outside the city, at the speed of 100 kilometers per hour this will become a serious problem. That’s why if you’ve decided to buy a small car, let it be heavier. The constructors know their job. They try to turn the heaviness of the steel to the safety of the body.

Strange as it may seem, but the manufacturers diffidently understate the mass of their cars by 50-80 kg. Because they could boast of the “surplus” of the mass as a sign of relative safety in case of head-to-head collision!

But the heaviness has its reverse side – inertia. Before your car is thrown off, the blow can crush the door and do serious harm to your health. That’s why (a significant historical moment!) you should estimate the weight of the door of the chosen car. A heavy door is a solid door! And if the car is no more than 5 years old, the doors of the car probably have a safety beams against a side blow.

Which drive gear is better, on the front wheels or rear wheels?

People, who drive in winter through the snow, have noticed more than once how difficult it is to drive cars with a rear wheel drive. While accelerating at the turn of the road the back of the car is easily skidding. The front wheels have the pressure of the engine’s weight over them, but the rear wheels remain without any axle load. That’s why confronting not a very high obstacle, they stop the car. The rear wheels are slipping hopelessly.

It’s easier to operate cars with a front wheel drive. On the ice they “answer” the steering wheel better.

A sedan or a hatchback? The third or the fifth door of a hatchback is at the same time the cover of the boot. You close it – and the eardrums of the passengers of the salon suffer a strong blow.

If you are not going to transport long boards and satellite antennas in your car, you’ll be quite satisfied with a banal but comfortable sedan. But if you value more the inner space and need the reserve of fresh air to drive through the gassed area, a universal car will suit you better.

A sport car, pressed to the surface of the road, looks really great in summer on the highway. But it has a pitiful outlook in a city in bad weather. The closer to the ground the driver’s seat is, the more difficult it is to orient. And if the windows are close to the ground, they will take more mud. That’s why choose a car, the driver’s seat and roof of which is located considerably high. And you’ll gladly find out how easy it is to get inside and out and what a splendid distant view you have through the clean windows.

So, you are determined to buy it!

Start from the body. Choose a considerably heavy and high one, so as to guarantee reliable safety and a comfortable way to get inside. After that, choose the engine, which you can maintain (and feed) with your pocket money, but not very small, so as not to be behind the drivers who use the same road. Probably it will be a universal car with the front wheel drive and an engine with the volume of about 2.0 liters. And it won't be a rare model. Because you don't want to be the only person in your city who orders spare parts for repairing. Especially if this car is your first car.

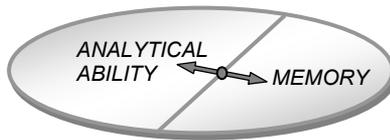
The real power and the turning moment of two engines of the same type may noticeably differ. And it is not only a question of age, adjustment and wear and tear. Such “strange things” may also be the property of absolutely new motors. Some people are lucky to get the good machine parts, other people are not. That's why indulge in a drive of 3 or 4 models which are for sale. It's enough to make a move several times just to check how the engine drags at a slow rotation. It's a good sign of its “health” and a good test to check the transmission. The unusual noise and morbid “tremble” are obvious signs of malfunctions, which everybody can notice. Because it is possible to compare with the work of the engine of the previous car.

3. *To Invent is to Foresee!*

Sometimes the Memory Eats Up the Processor, Sometimes, the Other Way Round

Specialists divided the brain according to its function, but they haven't managed to find special separate sections one to be responsible for memory, the other, for quickness of wits. Unlike the computer, our “computing processor” and the memory are the same resource. They are integrated in a device placed in the same capacity.

Different people possess different boundaries between memory and analytical ability. The teachers sometimes remark this peculiarity of the students. The lack of analytical ability is often compensated by a phenomenal memory, and vice versa, the lack of information and memory is compensated by the ability to analyze and invent.



A photographic memory is very rare and is more peculiar to girls. They can with a fantastic exactness reproduce a text and many formulae from textbooks but not always grasp their meaning. I remember an episode when two simple questions (I didn't mean any harm or malicious intent) made an excellent student burst into tears. She couldn't find an answer in her memory. It wasn't in the textbook and her record book contains only excellent marks. I didn't dare to mar the general picture of her marks.

I have rather often encountered merry, witty boys who sometimes had vague knowledge of what was written in their textbooks but could easily solve new problems. I like such boys and girls much better; I myself was one of them.

Is it possible to improve both wonderful properties of our brain at the same time?

We more often complain of the drawbacks of our memory but hardly ever of our mind. It is because to estimate one's memory is much easier. And it is still easier to check it and train it. We know it and hope to improve our intellect on account of our memory. But we very seldom manage to do it. Talented "lawnmowers" put to shame brilliant graduating students.

Analytical ability is usually considered as a God's grant or a reward for age. And one's rivals or pupils' excess of quickness of wits is quite often regarded as an obvious and dangerous threat or weeds.

Keeness of wit is a special gift. It develops in an enigmatic way, hardly depending on efforts, more often connected with fate. And if the contents of memory are accumulated relatively slowly and regularly, "enlightenment" and the understanding of principles occur relatively quickly and even abruptly. Such leaps are the source of experience and abilities to analyze. But this abruptness is natural. The brain must be pumped with valuable facts in the same way as the working body of the laser is pumped with energy. If the threshold of understanding is achieved, then a new quality appears a flash of ideas. In the incomplete mosaic picture, one distinguishes the shape of the system. The cause for its birth may be a starting impulse, a pleasant surprise or unexpected trouble. But what is most important is the necessity of "food" from reliable facts! Only they give us the opportunity to create in our imagination an adequate picture of the world, the quality of which is easy to check. Suffice it to ascertain the existence of facts that we have managed to predict.

Some people consider analytical ability to be innate. We are not going to argue; only we want to note that there is something one can learn. Such coeducation consists of collecting compact images of the system surrounding us. A well-selected collection of such images and experience based on them are the foundation of our analytical abilities.

A sense of humor is only the ability to see the contradictions and paradoxes. This can be also acquired if one develops

the ability to see the system as a whole alongside its problems and contradictions.

In order to understand nature and people we need principles connecting facts. And for a successful life and work we also need methods. If we are armed with principles and methods, it is easier to manage any work or problem of everyday life. It is our principles and favorite methods that make people cultured. It is a pity that they accumulate so slowly, probably because of the estrangement of people, reticence, animosity, death, foolishness and senseless greed.

Where can we find an answer to the question that has so unexpectedly appeared before us? In our memory of ready-made recipes or somewhere else?

The Principle of Compensating the Shortage of Memory gives the answer: *If you've forgotten how to lace up the running shoes, you'll have to invent a method.*

If someone doesn't understand the principle of the work of a meat chopper, he'll have to study the instruction and make use of:

The Principle of Compensating a Clear View of the World:
If you are a fool, be obedient!

Short men like large women and big cars. This is the way they improve their "breed." Here:

The Biological Principle of Compensating is at work:
If you are small, like everything big!

A Clear View on the World

There is a joke in a funny American film, "What is the last to come to a bug's brain if its head hits a windscreen?"

I used to give this riddle to my second-year students of the physical department at electricity classes, when they could answer no other questions of mine. Their arch smiles were the

sign of the correct line of thought. But no one of those who guessed the answer had the guts to say it aloud.

I had to go back to electricity, and so I asked them a second question. What does a dense electron cloud look like?

If a student gave the correct answer, he or she was given the credit for the whole year's course.

So, what does a dense electron cloud look like?

Right you are. It looks like a chrome-plated automobile bumper. The electron cloud repeats the shape of a metallic object it belongs to. It saturates it as a sponge and shines on the outside. This is what Benjamin Franklin wrote about 250 years ago. The one whose portrait we can see on 100-dollar notes.

The principles of the clear view of the world:

- *Find the main elements of a system.*
- *Draw a model of the system in your imagination.*
- *Give it energy and freedom, let the picture come to life.*

Note:

If the picture does not look alive, your model lacks some vital elements and links.

If the picture is anemic and cloudy, there is too much of something; take it away.

To think is to model, to draw systems in your mind and watch their behavior. Those who do it fast can count on success in sports and business games. Those who are slower can consider a less exciting task, to predict the future.

The modeling mechanism is really simple if you manage to find the main function and understand how the basic elements of the system interact.

Supposing you have decided that the main function of the car is to move independently, and nothing else. Then plenty of “redundant” parts can be easily got rid of, and it will not affect the main function of the car. The exhaust pipe, the lights, the doors and many other things. A front-drive model can lose its rear pair of wheels and all the tail. And this “stump” is able to move. It will even answer the steering wheel!

Shall we leave the driver's seat and the dashboard? No, let us throw them away! They have little effect on our main function. But in case the car is driven by a man, the driver's seat, the dashboard and some controls will have to be installed again.

Shall we put back the brakes? I am afraid so. They interfere with the moving but help with the driving.

This is the way we identify the main links of the system under analysis, find the limits to its working capacity and controllability.

If we take out one of the main parts, the system cannot either work or be controlled. The importance of each element is assessed according to the ability of the system to function without it. The things which remain after this "peeling procedure" are called **the minimal technical system**.

Sports and racing cars are a good example of minimal technical systems. Their construction is constantly and thoroughly analyzed, any redundant links and grams of weight are sought out.

Do you happen to know why the sports *Porsche 911* has a back seat? It is not for passengers, it is for blanking off the roar of the powerful engine which is situated in the rear! Do not tell it anybody! It is the most terrible secret of the manufacturing company.

Principles of the judicial system:

- *A likely version can be stronger than the truth.*
- *The borders limited by the Law can be springy for those who have enough strength and smartness to interpret them in their interest.*
- *The judicial system doesn't find justice, it finds compromise.*

Emergency Inventions

It was raining hard. *Michael* and I drove up to his house. He turned off the engine and took out the ignition key. But, a strange thing! The windshield wiper blades continued moving. We gaped at them in amazement.

Shall we go out into the rain, open the bonnet and switch off the accumulator? Try to grapple the needed safety fuse under the dashboard?

But we are radio system experts after all! Can't we find a simpler solution to the problem? What does this system for turning off the blades lack?

A signal about the low position of the blades! So, we have to help the mechanism of the wiper to press the detector which must surely be hidden under its levers.

Michael gets out of the car and forces the blades into the lowest position. The wiper switches off! We smile. We do know something about systems!

The originator of the Theory of the Solution of Inventive Problems, *Genrich Altshuller*, said that his idea of teaching the technique of solving inventive problems appeared in 1946. Inspired by the potential of the idea, he dreamt of the day when it would be recognized. He candidly hoped that the government would support him, and he sent a few dozen letters to Stalin and his ministers. The letters reached the addressees. *Altshuller* was arrested. The interrogator demanded his confession of a wicked crime, and first of all the poor author was forbidden to sleep. Every several minutes, the jailer looked into the cell to check whether he was sleeping or not. High time to check his own idea. To invent a way to have some sleep in spite of the jailer. He had to solve a dilemma – to sleep and not to sleep at the same time. To sleep for himself and to stay awake for the jailer. His cellmate and he drew eyes on two pieces of paper using burnt matches and glued them with saliva onto their eyelids, eyes closed. That way they succeeded in fooling the jailer and sleeping seated!

If the choice of your means is unlimited, one and the same rather simple inventive task can be solved in many ways. If you have few means or very strict external regulations, the number of these ways quickly dwindles to one or to zero. Zero ways of inventions is this an extreme case. It means that you are locked and cornered and somebody tries to destroy your will.

Such things happen only rarely. As long as a person is alive, he is able to invent. People find themselves in difficult situations. They have to invent even when they do not have all the necessary things at hand. We have to wangle somehow!

It happened on a warm spring day in 1996. I had 25 minutes before an important meeting. The way may take me 15. I turn the key, the control lamps are lighted, but the starter is silent!

How can you start an engine without a starter?

You can gain momentum going down a hill or a group of volunteers! But I had neither the time nor the wish for that. I had enough strength and anger to kick the engine into working! But how could I transfer this energy to the crankshaft?

Through one of the leading wheels!

I put it in the third speed and quickly raise the car with a jack. I try to rotate the wheel with my hands. It is inconvenient and physically next to impossible!

Is there another, more efficient way to give my energy to the engine? How do they start a boat engine or a saw?

I will do the same!

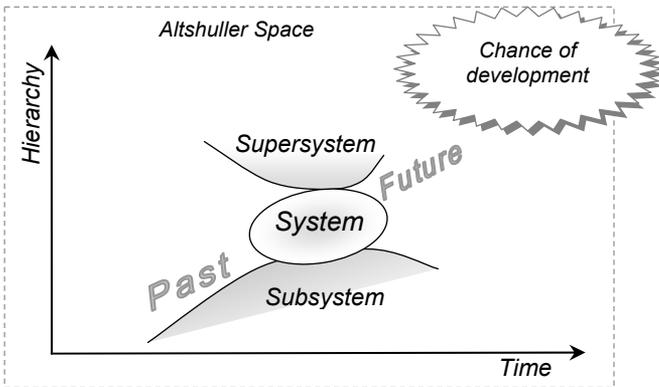
I wind the towrope around the protector. A tug. The engine starts!

A group of students near the entrance of the physical department applauded. I was proud. It took me 5 minutes to make an invention and test it. But God spare you the trouble of having to use only your own inventions all your life!

Every day and every single moment we deal with many simple and complex systems. From watches and computers to our own body. We live among systems. We use them and have to look after them to control them and predict their behavior.

They must be our subordinates, and not vice versa. The same goes for critical situations! In order to attain this, we have to learn how to understand and see in our mind’s eye the models of these systems. Otherwise the world around us will turn into a scary labyrinth full of traps and dark dead-ends!

Talented thinking, according to *Altshuller*³, is understanding of the fact that technical systems exist not on their own, but are built into the space *hierarchy-time*. People should be able to travel in this space in their minds.



Knowing the history and the present of a technical system, a talented inventor can predict its development.

The Principle of prediction in action:

Learn the structure of a system and its relations with the environment at present and in the past, and you will see its future!

To Invent by Rule

Genrich Altshuller, the father of the Algorithm for Solving Inventor’s Problems (ASIP), spent more than forty years trying to transform the process of invention into an “exact science!” *Altshuller* was convinced that it is possible to invent only following strict rules and formulas. He sincerely believed that by the beginning of the 21st century, inventing would become a routine process, “creativity without creativity.”

³ Creativity as a science by *Genrich Altshuller*, Moscow, 1979

Altshuller was right affirming that creativity tends to turn partly into science, partly into craft. But apparently he did not take into account the very fact that the process of research with its unpredictable results would always exist. People, and especially children, will always face the unknown and how can one be sure that the proper answer to the question “*what am I to do if...*” will be at hand? All kinds of difficulties, unpredicted circumstances, and mere curiosity have always made the inventor look for appropriate strategies and reliable means of achieving the aim. Most likely that was the state of things in the past and will always be in the future.

There is no other term for **it** but creativity with its traditional “sins,” inexactness and unpredictability. For any synthesis is faced with the problem of choice and the necessity to guess. And we do it guided by our experience, prejudices and casual finds.

It goes without saying that the results of the inventor’s creative enthusiasm depend on the methods and instruments he employs. But the principles of creativity themselves do not change. The inventor’s intellect is only a favorable medium where the laws of creativity exhibit themselves.

Besides the lawful and planned basis, the process of creativity includes a set of chance elements which are closely connected with the personality of the inventor and his social medium. To curb these elements and to put them under full control of the inventor is the dream of the incorrigible optimist. The possibility to predict the development of the system guided by the laws of evolution is much more perspective. Inventions and discoveries will inevitably be the fruits of such predictions. The writers of science fiction have proved it many a time.

However, it is a matter of taste whether to use the laws and principles of systems in pure state or to follow the ASIP rules. It should be only noted that in comparison with other ways and means of organizing and stimulating the creative process ASIP does not pretend to be a universal psychological dope. The mission of ASIP is different: it intends to stimulate the

creation of discoveries making use of the laws of systems and not just by psychological tricks.

ASIP has already existed for tens of years and its more or less successful prescriptions continue to make us happy showing how to find the roots of problems and cheap ways of their solution.

Of course, the talented inventor can find a brilliant solution without ASIP. The mechanism of systematic thinking is innate to any human being. But if ASIP gives a chance to improve it why not make use of it?

We single out 7 ASIP links:

1. The creation of the problem model, its shortest definition, indications of possible contradictions and its final aim.
2. The analysis of the problem model: to define the available resources, constructive devices, necessary substances, fields, energy, space and time.
3. The definition of a final ideal result (FIR) and physical contradictions hindering the achievement of the final aim. FIR is formulated as an activity of a yet unknown agent — an X-element which eliminates the contradictions. The X-element is by itself a modified element of the system which has no harmful properties and does not make the system more complicated. The X-element eliminates the contradictions without additional cost and creating new problems.

The X-element is a “golden fish” which solves the problems by magic. Our modest task is to catch it amid the maze of restrictions.

The piquancy of the situation lies in the fact that the price of the “golden fish” and its use should in the ideal be equal to zero. Therefore, attention! Not only a certain magic substance or field may play the role of the X-element. Sometimes it is performed by a smart trick or even by... an empty place, by the very absence of conditions which created the problem.

Certainly, the vacant position will be in any case occupied by someone or something. That role may be entrusted to the obliging intermediary which will undertake additional functions and at the same time remove the conflict. Such a solution

is frequently recognized as the best because it requires the least expenditures and promises an obvious saving.

Altshuller's First Paradox:

The ideal solution is hidden inside the system.

4. The search of the solution by means of choosing various combinations of the existing reserves of substances, fields, space and time as well as the inventor's ingenuity and methods, and the familiar physical effects. Most of the problems are solved at this stage. For simple problems there are simple ways, for complicated — paradoxical.

5. If the problem doesn't solve, it is necessary to change its sense and remove part of its tentative restrictions. Some of them are a corollary of psychological inertia. They seem unshakeable until we come to details, and a thorough examination will always get remuneration by the solution. However, it is not advisable to hurry with its solution. Now it is assigned for another role.

Altshuller's Second Paradox:

In order to understand a problem, it is necessary to solve it first.

Already in our childhood we came across this paradox. It was interesting and pleasant for us to do things we coped with. We played such games where we felt we could win. At school we discussed with our friends such difficult questions to which we found an answer. After that we were ready to think of more complicated problems and solve them. Has anything changed since then?

A major and composite problem is easier to tackle by means of a series of smaller problems — probes which will help to find the highlights of separate effects and laws, at the same time the inventor gets convinced of the efficiency of his device.

More often than not the problems put forth by the inventor are rather vague and may easily change. Such a change may radically alter the way of solution and means of achieving positive results.

Of course, while looking for a solution, it is advisable to make use of anything at hand. But if the means of the system are not sufficient, it is necessary to draw extra resources. And then the solution of the problem turns from a technical one to that of an organizational and transfers to a higher systematic level.

If the task is put anew, we return to point 4.

If we have found the solution we move further.

6. Verification of the quality of the achieved solution.

Comparison of the obtained results with the requirements of the problem and the FIR. We must be firmly convinced that the detected contradictions are actually eliminated.

If there are still insolvable problems we return to item 1.

If there are no problems we set to item 7.

7. The creation of a project. Here we may face other insuperable difficulties. If it happens we will have to return to item 1 and try another branch.

Altshuller’s Precept:

It is better to go round in a circle than stick in an impasse!

The Space of Purpose

In May, 1993, I had to go to an exhibition called “Conversion Technologies” where some devices from my lab were displayed. I took my six-year-old daughter with me.

There were plenty of funny exhibits. The display of an optical company featured a piece of thick optical fiber cable with polished ends. Touching one end, the girl was surprised to see her finger on the other end of the cable. It turned out possible to transfer a part of your body over a distance without any effort!

To wear off this strong impression, the child had to be shown something very simple and understandable. I called her attention to a **body armor** and told her what this thing is for. We were even allowed to feel it with our hands.

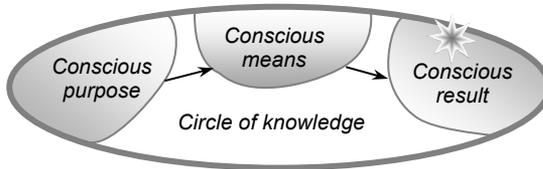
A week passed. She came up to me and said, “Daddy, I invented a bomb. You’ve got to take a match box and put some match heads inside, and put a body armor on top.” She gave me a match box with lined cells, just like the body armor we had seen. A thread was sticking out of the box – it was the fuse. Inside there was the explosive – three match heads. It was a “working model!”

Her first invention made me happy, not alarmed. The child had obtained new knowledge and used it in her creative work. The body armor had turned into a bomb in her imagination.

Is it not the same way it works with us? Ideas appear with new information and the expansion of the circle of our knowledge. The scheme is very simple:

new information → idea → invention

If we have a purpose, we try to find some means to realize it and expand our circle of knowledge. The expansion of the circle of knowledge makes the purpose more precise, enlarges our arsenal of techniques and allows us to see a possible result:



To make the purpose more precise is to find in the cloud of potential opportunities at least one small grain which can bear result – a precious product which can be of real use. The misty suspension is seen by every one, but very few can see the seminal grains. And even fewer can grow something useful for others from these grains and use it themselves!

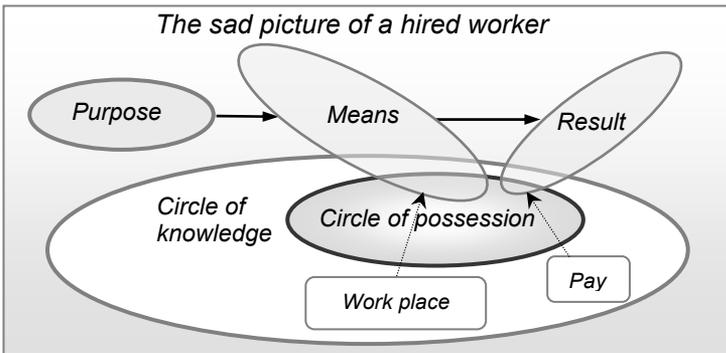
If you are a good observer, you must have noticed the strange fact that the result and the purpose in the scheme do not coincide. It is a paradox, but only in a simple case when the purpose is so modest as to be fully covered by its material realization. Only some grains from the cloud of the purpose get into the zone of the expected result. Everything else will appear quite unexpected.

Of course, the purpose, means and result can be forcefully united in one point. We will get something like a hibernating mole. It has everything. Strong arms, a warm coat and a layer of fat which guarantees its life. While it is asleep, the means and the result are hidden under its small black hide. It is an idyll of complete self-sufficiency or an evolutionary blind alley?

There is no simple answer. Our point of view may differ from that of the mole.

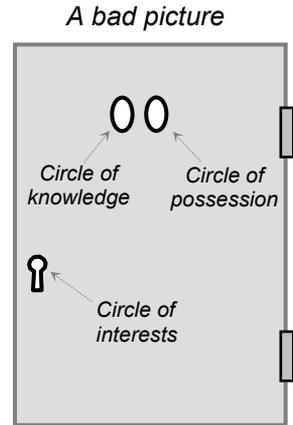
Even with all our advantages and success we also have to be ready for disappointments. Expanding our circle of knowledge, we may become disappointed in our aim. A new purpose may ensue large sacrifices and turn out to be infeasible. That is why every one has to look for an answer to the difficult question: what is better, modest self-sufficiency or hungry purposefulness?

If the secrecy of your work (or your own indifference) do not allow you to know what you do, you are not the **boss**. You are a **tool** of your boss. You are a chain in the pyramid, a humble official or a hired hand. The circle of your knowledge and the circle of possession combine in the following scheme:



The picture is sad because the purpose is not yours, and you get very little from the result. The only thing that is left for you is to feel happy about your competence, because your work, place and your possessions are entirely inside the circle of your competence.

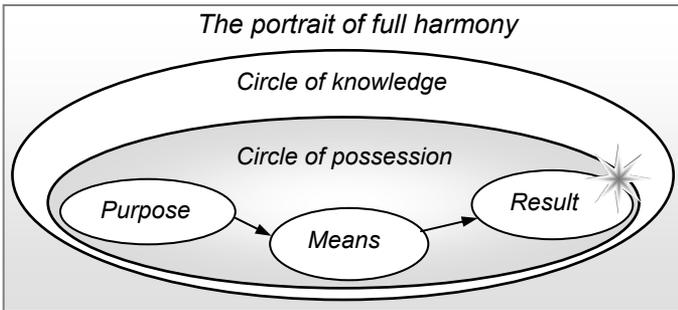
It is worse for those whose “heads” of knowledge go off in comparison with their possession. It is very bad when the circle of knowledge and the circle of possession do not overlap and constitute two small circles, and the purpose is reduced to a small keyhole of interests, just like in this picture:



And it is even worse when the area of the circle of knowledge is close to a dot, and the circle of possession takes up the area of a whole country.

If you do not suffer from memory lapses and do not tend to have sudden insights, the circle of your knowledge changes slowly. The circle of possession of people in creative jobs and businessmen playing high is prone to quick changes, creative and business successes, failures and bankruptcy.

There are also rare instances of pure harmony, when the circle of knowledge fully covers the circle of possession wherein happily dwells a purpose, a means and a wonderful result:



The shining result fills your soul with happiness, and the money you have earned expand your circle of possession.

The circle of knowledge seems to grow on its own. Performing our work, we study our environment, get to know the problems of people and technical systems and find ingenious

ways of their solution. This experience is a bonus pay for our labor. But I have to disappoint you. We possess many complicated systems: our own body, a PC, a car, but we do not know in detail what their structure is. That is why we go to the doctor if we are ill. We have our car repaired by a mechanic. And we have no opportunity to fully control the results of our own labor. We are a part of the social system where we do what we can, sell it and buy the products and services of other people. We are dependent. We can leave only the purpose in our circle of possession. It does belong to us, but only as long as no one else knows it.

The means will enter the circle of possession only partially. Usually we cannot control such means as the market where our product is sold. And we have absolutely no control over any long-term effects of our activity.

The level of knowledge looks approximately the same. We know only the purpose, and we are largely ignorant as to the means used and the results. Only the sale profit and consumers' words tell us whether our actions are correct and the product is successful. There is no other signal of efficiency of our actions which can be more veritable, except maybe the finger of God.

Methods and Principles in one Box

If you call every thought an act of creation and every action an inventive method, then your body is filled with inspiration and two wings immediately grow on your shoulders. You are ready, you are an inventor!

$$A+B+C+ \dots = M$$

Could it become a ground for invention? Of course it could!

The method of *SUMMING UP OF FORCES* is quite evident. But does everyone know how to weigh the Eiffel Tower (about 9000 tons) on a scale with the weighing limit of 3000 tons?

Most school children know that weight is the sum of vertical forces, effecting the supports, and it is not necessary to measure them simultaneously!

If our construction has three equally loaded fulcrums, an Optimist will measure the force of pressure of one support with a scale and define the weight of the construction as three weights of one support. He will make use of the principle of *SYMMETRY*, and if the supports are not loaded equally, he will have to make use of the principle of *DIVISION IN TIME* and to measure the forces affecting the fulcrums one after another. A distrustful Pessimist will have to put the whole construction on weighing machine and to weigh all the fulcrums simultaneously.

But why exactly three?

When there is one support – it is great! Then you will need one weighing. Two supports is also good. Three is not bad if they are widely separated and the height of the construction is not big. This condition is necessary so as not to let redistribution of weight between the supports noticeable when putting the scale under one of the fulcrums.

If there are more than four fulcrums, one scale will not do. You will need a laser and better not one but several. When substituting one of the supports for weighing machine, one will have to observe strictly the principle of *EQUIVALENCY*. The supports should have exactly the same position as it had before the arrangement of the scale. Displacement or deformation will lead to a mistake in weighing and may cause damage to the construction.

Now we know how to weigh the Eiffel Tower with the help one scale without disassembling it or lifting it from the ground.

If we can afford to have another scale, then to weigh an oil platform with four supports, we can do without lasers but shall need the principle of *SYMMETRY* again. We shall put scales under two out of four supports on the one side from the symmetry plane and measure half of the platform's weight.

Now let's talk about home affairs.

If you provide a chair with four sensors of force – a sensor under each leg, then the sum of their signals will reflect the weight of your body together with that of the chair. However, the weight of the chair could be subtracted at once. Electronic scales have a special button for this.

A new quality of a chair is an invention.

The image of electronic scale with a variable number of different data units is a treasure of illustrations of several inventory methods.

SUBSTITUTION OF A MECHANICAL SYSTEM FOR AN ELECTRIC ONE.

A system of levers and fulcrums is replaced by a system of electric data units of force.

DIVISION. One big (imaginary) scale is divided into several little ones.

SEPARATION IN SPACE. Data units of force are separated in space. They are installed where necessary – under fulcrums.

COMBINATION OF FUNCTIONS. The chair remained a chair but acquired the function of scale, and your weight is the password for your computer. If you have attained extra weight the computer would not start operating. You’ll have to go for a run again or jog a little.

A crane provided with such data units will not only lift loads it will be able to weigh and to learn about the danger of overturning and even to calculate the total weight of transferred loads.

UNIVERSALITY. Data units may be compact and flat. They can be put under a support or inserted inside constructions. The same data units may be placed under the body of a railway carriage and the lorry. They may be put into the supports of the chassis of a plane. For a plane it is a vital question. Still on the ground, pilots will be able to detect a mistake of cargo centering or excessive cargo. It will facilitate and make the crew’s work less dangerous. It should be this way. Probably those who understand the value of this idea act this way already.

SURPLUS REMOVAL is the first step in the direction to the ideal. If we imagine the closeness to the ideal as a ratio of the weight being measured to the weight of the scale, then this index may be increased 1000 times, because there is no longer any need for a stable and heavy platform and levers of traditional mechanical scale.

RESERVING. For the fulfillment of our work we take data units in working order and an extra one. Our scale is hard to break; it's very reliable and operates according to the principle of *DECENTRALIZATION*. Every data unit may be used as separate scale.

The paradoxical method-principle *ON THE CONTRARY* presupposes that not the body is put on scale but scale is placed under the body!

Besides, the scale has acquired new wonderful qualities: *FLEXIBLE STRUCTURE* and *EASINESS OF USAGE*. Our data units can be combined with lifting jacks and provided with devices of wireless communication. They can weigh ships, bridges and lorries and trains moving on them.

There is one more exciting example of using the method of summarizing. Once in summer during my vocation, I bought a set of shock absorbers for my car. I went to my "dacha," unscrewed the front amortization strut and faced a problem. How cold I disassemble it?

The amortization strut of a car is a shock absorber with a spring on it. In order to replace the shock absorber one has to compress the spring. The strength of hands is surely not enough, that is why the method of summarizing was helpful. I took an elastic rubber rope out of the first-aid kit and "bandaged" the spring, enveloping and fastening the major part of its spirals. I managed it!

$A \cdot B = C$. Is it possible to get an invention out of this formula?

The principle of *STABILIZATION!* Our body tries to keep the temperature of 36.6°C. But it is inside. In normal conditions woman's hands have the temperature of 27-30 °C. Man's

hands – that of 30-33°C. Probably, that is why girls like to warm up their palms in their boyfriends’ palms?

Our cars, refrigerators, TV-sets, computers and heating systems have tens of stabilizers inside. They take care of temperature, tension, speed and pressure. My last invention, registered in the *USSR*, is called “Source of Light.” It is based on stabilization of power given to a lamp. It was suggested observing not the current **I** or tension **U** on the lamp but the result of their multiplication, i.e. the power **P=I·U**. The lamp with a stabilizer turns into a stable source of light for a precise measuring appliance.

The principle of a *FULCRUM*. It is the basis for the *METHOD OF COMPARISON* that we use every day for measuring, defining the quality of things and state of affairs. It is the basis for our ideas of nature, people, ourselves. Our self-confidence, our irony and our envy.

An old car seems quite serious and attractive to us until a new one is here. When comparing, we find funny surpluses of the old and naïve faults of the new model. When comparing, we get more information and make more conclusions.

Beauty is hard to measure, however the principle of fulcrum suggests an easy answer: *COMPARE!*

If an object has nothing to compare with, we compare it with an imaginary ideal. Such an ideal is a fulcrum for defining the quality of a real system. When comparing, we easily find faults with the existing systems, and even the possibilities of their removal, but only on occasion, if we manage to understand the essence of the system and its natural principles of development. A mistake in defining the ideal is extremely dangerous. It leads not only to a deadlock, it leads to degradation!

Let’s discuss some more simple but effective methods.

A skillful baker knows how to make his product soft and tender. His product does not turn into a flat concrete shortbread, but into a light sponge-cake. Why? Because he uses baking powder. The most ancient recipe is to add a little yeast

into the dough. The dough will foam and the bread will become fluffy and soft!

FOAMING OF THE MATERIAL – an extremely effective method, in spite of the apparent simplicity. People used it for thousands of years to make bread and have recently formed a pretty good idea to use it for building houses and machines. Foamy building materials have appeared. For example, celled concrete. The solution of cement, lime and aluminum powder foams and hardens inside a wide steel mould. The received “monolith” is cut afterwards into blocks of size suitable for builders.

The “foamed” concrete loses the surplus of solidity and hardness, but acquires the qualities of wood in return. It is easy to drive a nail in it, it may be sawed with a common handsaw. You can easily and quickly build a house of it. The expenses on heating such houses are not high, foam is a warm material!

This method has been recently noticed by metallurgists. Foamed aluminum turned to be an excellent constructive material. It is light and solid. Details of automobiles, trucks are being already made of it.

In spite of its simplicity and ancient history, foaming is a unique method. It changes qualities of a material quickly and radically. Viscosity and hardness are changed to big volume and harshness. Besides, it is possible to get “free” heat and sound insulation.

The principle of *COPYING* is a quality of animate nature. Living beings reproduce their more or less precise copies, and people produce millions of copies of automobiles and TV sets.

The success of conveyer production and the triumph of modern electronics is entirely based on the principle of copying. Once produced a high-quality product is reproduced repeatedly. Prices come down and millions of people become happy owners of the things they need.

CLONING is a variant of the method of copying. The announcement about the possibility of obtaining a precise biological copy of a man caused a lot of fuss. Terror and delight

simultaneously! It will be exciting to hold a baby, made of your single cell, in your arms. It won't be your baby, it will be yourself. But still it will be another man, another personality. Other conditions of life and development, another social experience and difference in age will make him different. Even several copies of one man, created simultaneously, will not be able to cause insoluble ethic problems. Are these problems made by twins?

On the other hand, expenses on duplication will be higher in near future than those on creation of a child in a natural way. That is, he who tempted to get your biological copy will have economic restriction. It will be a whim of the rich. Fashion on it will subside as soon as it is found out that a biological copy is another personality and, in general, another organism with its own deflections and pathologies of development. A copy may be better than the original, but it may be worse as well.

Creation of man's copy for the sake of obtaining a healthy organ with predictable qualities cannot be called a crime. Can this relatively harmless occupation of competent biologists be compared with commonplace criminal, for example, with a murder of an absolutely original man for the sake of his purse?

ACTION – COUNTERACTION. Every action is accompanied by a counteraction from the outward environment. The widespread natural and social phenomenon is often used in technology as quite a conscientious method. There are several principles of interaction of this pair:

- *NEGATIVE FEEDBACK.*
- *COMPENSATION or CORRECTION.*
- *RESTRICTION.*

Negative feedback suggests continuous observation of the situation and an immediate precisely dosed counteraction. This is the way to reach precision of technical systems operation and the quality of bringing up children.

Compensation and correction work where the possibilities of operation are limited but where there is a necessity and a possibility to counteract.

RESTRICTION is the simplest and the toughest method of operation. It sets limits with the help of strong walls and rigid rules. Restriction of space, efforts, level and trust. New cars with powerful engines have built-in devices, which restrict tractive effort and speed. Hoses of petrol stations “feel” the overfilling of a tank and disconnect fuel supply. The key of the car with restricted confidence is designed for hotel servicemen. It’s possible to open the doors of the car and start the engine with it, but it’s not possible to open a boot with it. Every key has its range of possibilities. Due to the key, the car can determine itself, who the driver is and will let drive as fast as its owner has allowed. And if there is not yet such a function in modern cars, it will appear soon. Many modern cars have all necessary elements for this purpose. What is left is to add connections and a program. This is another example how the conditions for the birth of new systems out of “old” elements are created.

The principle of *COMPENSATION* is widely spread in animate nature. Lost body fragments of some animals grow in the course of time. Invalids have to compensate the weakness of their legs with the help of arms, and weak eyesight by hearing.

Less noticeable but very important is the human ability to compensate the lack of analytic abilities by memory and vice versa. Those who cannot guess, have to remember or read long instructions. Those who cannot remember have to invent, or act at random.

Action *AT RANDOM* is also a method that is widely spread in animate nature. “Unsystematic” roaming seems irrational. But it is the most widespread means of search for food. People use it as well. Even mathematicians.

The principle of *ACCUMULATION* is a variant of the principle of *SUMMERIZING*. Electric condensers and batteries are assigned for accumulation of charge. Pools and reservoirs store water stock. People themselves accumulate money, knowledge, authority, friends, diseases and hypodermic fat layer. These accumulations define their possibilities and qual-

ity of life. Those who really understand it, try to accumulate only the good. They are attentive and correct, but seldom miss what “floats past.” They try to use **it** or to make **it** their property. Probably, such a strategy does not add friends, but expands the limits of possession.

The method of *PUMPING UP* is used more often by us than we think of it. It is not only pumping up tires of a car and training muscles. We collect information and study systems. The result is a clear view of the world, understanding of the events, creation of an effective plan of actions.

Buying a house or a new car is also the result of pumping up. We accumulate money and the possibilities of earning it.

But there comes a surprise. Pumping up is only another presentation of the principle of summarizing. The words *PUMPING UP* and *SUMMERIZING* contain absolutely different images and experience at first. But when they are “pumped up” with sense, they will expand and merge, forming a new common field. A bit of fantasy and one method is easily turned into the other.

Traffic lights use two principles: *DIVISION IN TIME* and *SYNCHRONIZATION*. Observe and there is no danger. But remember! There is the method *ON THE CONTRARY*. Someone may make use of it.

People of one social group are synchronized in thoughts, feelings, behavior. They understand each other well. One look is enough for them. They do not need many efforts and words to understand each other. This is the bright side of the principle of synchronization.

But there is the other side. Synchronization + energy accumulation = resonance. Strong vibration destroys bridges, buildings, cars. People inclined to resonance may become victims of the principle of synchronization. Panic is its dangerous manifestation. Everyone has one simple obsessive idea – to run. It does not matter in what direction.

Ideologists and preachers also use this principle and at times turn people into a dangerous herd.

You and I use the principle of *SYNCHRONIZATION* and the principle of *COORDINATION* more often than we think of them. Try to remember, for example, why an automobile needs a gear-box? Many people know how to use it and even how it is arranged, but they do not always understand its “philosophical” essence. The gear-box realizes the principle of coordination! Maximum useful power can be obtained only on condition that the source of energy and the loading are coordinated. Do you want to drive fast and economically? Use this principle. Give the possibility to the engine to work in the optimal regime, with the turns that provide a maximum turning moment. You will get maximum power and acceleration for each gram of the fuel used.

The principle of coordination works not only in technology. Each of us has his intellectual scope. We shall never say a foolish thing unless we realize that it is silly. Nor shall we understand anything beyond the scope of our comprehension. That is why when addressing a stranger, we try to render our thoughts extremely clearly, briefly, consistently and precisely. Thus we achieve coordination with people who think in a similar way. Maybe this is the reason why fools like and understand fools and clever people, clever people?

Nobody except extremists and inventors sets an aim to change radically the existing working systems, even if it is extremely justified. There will always be those who are interested in preserving old orders and systems. Their ideas of the ideal must be out of date and they will not vote for the benefit of a new idea, neither by a show of hands, nor with their purses. That is why your task is neither to make them angry, nor to shock them with your ideas, but to propose a coordinated decision – the one they are able to understand and to accept.

COMPROMISE is a fundamental quality of animate nature and of human society. But it is not less effective in technology. A “conflict” between two parts of a car is quite soluble if one part or both agree to change or will find a suitable mediator. Two pinions will stop rubbing and breaking each other if

appropriate grease is used that will eliminate the conflict. The grease is a mediator.

People who do not create conflict situations around them live longer and achieve more. They understand that *PART-NERSHIP* gives a better result than an open acute *CONFLICT*.

We may have little liking for tradesmen and lawyers, but we use the principle of an *INTERMEDIARY* every day and every second. After all, our blood is also an intermediary that transfers oxygen to the cells of our body.

It is not surprising that our teeth are fixed not to the surface of the membrane of our mouth and not to the muscles, but are built into the bones of the skull. Soft muscles need an intermediary that would make their work more effective.

A knife is like a tooth, a blade with a handle. The handle is an intermediary. We shall not be able to keep the blade without it. There should be a chain between two heterogeneous objects that is able to solve the problem of coordination. That is why we should agree with the fact that lawyers and tradesmen are useful elements of any healthy social system. Benefits from coordinating actions of an intermediary are higher, than the expenses on its service, if we are able to keep them as an intermediary. The use of an intermediary makes our life easier and strengthens the system where we live.

HARM FOR BENEFIT. The snow is melting. It is raining. There is a flood in the town!

How can we stop the water?

“The water should stop itself,” the Algorithm Solving Inventing Problems (ASIP) is prompting. It should be simply directed.

To freeze it? But how to do it quickly and how to preserve an ice dam, if the temperature is +20° C.

To place the water in a wide and long rubber sleeve or plastic capacities, connected with one another?

It will work! What is left is to invent how to make this garland steady under the pressure of water. Is it possible to use the walls of houses, trees and posts?

A zone of conflict turned into a zone of compromise. “Modified” water may turn into its opposite. Water will hold water!

IMPULSIVE ACTION. We may not even remember about the benefit of an impulsive action, when we take a hammer in hand and drive a nail. But this is the principle of operation of a hammer and the principle method of military men. Probably, they do not suspect this, but you and I know for sure that a shot, an explosion and a sudden attack are impulsive actions. This method is used by animals and birds. An *Enhudra lutris* breaks mollusk’s shells with the help of two stones. A *Steppe eagle* – on the contrary, breaks a turtle’s shell by throwing it on stones.

REFLECTION of space, a proportional enlargement or diminution of objects and an intentional *DISTORTION* of their forms. It is a professional occupation of cartographers and painters. Some of them earn their living by precise observation of proportions. Others – on the contrary, by their intentional distortion.

DISTORTION OF A SYSTEM ELEMENT AND SUBSTITUTION OF MATERIAL. We change a firm one for a soft, liquid or gaseous one, a harsh one for a flexible one, a safe one – for a broken one. A car’s wheel and a cop’s stick are made of rubber. It is better than steel. More flexibility and less harm for surrounding systems.

Liquid fuel is more convenient to use than solid. Diamonds are met rarely in nature, and there are no absolutely firm bodies. Absolute firmness suggests endless durability. After all, a stone floor sags even under a child’s feet. It is known to most engineers and they specially build their constructions to let them sag, but not break.

DIVISION - ISOLATION - FILTRATION. To isolate oneself from danger, but to provide a good contact with everything that is necessary and useful are two opposite but very important methods for survival. Every viable organism consists half of diaphragms and protecting capsules. They serve as armor and insulators. To destroy one of such capsules is to

cause a serious trauma. That is why there is nothing strange in the fact that people protect themselves from other people, from surplus information, from heat, cold, harmful substances and fields. For this purpose there exist window glasses, doors, locks, customs, immune systems and our own skin.

The protective environments not only block a way to harmful substances and fields. They pass useful substances, energy and information!

What is in common between a filter for water refining and a secretary? Both the systems protect from unfavorable outward influences. That is why bosses create a system of protection and filtration out of condensers, bodyguards, advisors and lawyers. Their aim is to remove everything dangerous and of minor importance. After all, protection from outward influence and surplus of irritants helps to preserve the initiative and self-confidence!

SUBSTITUTION OF AN ELECTRIC SYSTEM FOR A MECHANICAL ONE. These are not only electric scales, locks or a computer instead of a typing machine. The most vivid example is an electric automobile differential gear instead of a mechanical one. A successive connection of electric engines for the wheels of one axis – this is an electric equivalent of a mechanical differential.

ON THE CONTRARY, SUBSTITUTION OF A MECHANICAL SYSTEM FOR AN ELECTRIC ONE. What can be done with the help of a stick and a rope is not necessarily to be done with the help of a microprocessor. It is an old joke. Today microcomputers can be bought at a price of a rope and this joke has become less vital. The arsenal of means increases so, that the problem of choice has become the most important one. A good choice is a way to success! And to make it you should see the whole system. To see its past and present. To see elements of a system and to see it among other systems. To be able to travel in *Altshuller's* space!

I was twelve. I was standing on a wide even floor and kept little strawberries, dry under the burning sun. Near at hand there was an edge of a concrete strip of an aerodrome. It is

where undercarriages of new *MiG-21* fighters touched the surface by landing. These places are marked by long black stripes. At the moment of touching, a motionless wheel rubs against the concrete surface and leaves a long black track. The wheel draws a line until it twirls round quickly. Landing grounds of aerodromes are decorated with such terrible strokes all over the world. Probably, constructors of planes do not consider it a serious problem. But we should admit that black stripes are signs of an acute conflict. Struts of undercarriages experience the strongest blow at the moment of touching a concrete surface and sometimes break off. These blows can be avoided, if to twirl the wheels of the undercarriage.

PREVENTION or *PRELLIMINARY ACTION* is a method that makes our life secure. There is an invention in which it is suggested that the brakes of a plane's undercarriage be replaced by reversible hydraulic engine. This engine is assigned for transference of a plane on the ground without a tow, but it may start working before landing, by twirling the wheels. What is left is to accumulate energy of braking and to use it for the plane's parking.

Thus *PREVENTION, COMBINATION OF FUNCTIONS, RECUPERATION, DECENTRALIZATION*.

If we use these methods the force of blow of an undercarriage against the landing ground will decrease, black strokes will disappear from the concrete surface, and pilots will get rid of the feeling of dependence on the ground.

You cannot always manage to eliminate the cause of an unfavorable phenomenon. The methods of *compensation, counteraction, isolation* may appear to be helpless. At a difficult moment, one more variant of the universal method *on the contrary* may help. *Having intensified the harmful effect* in one place, we weaken its effect in other places or at some other time.

The front of fire in the steppes can be stopped with the help of an opposite front of fire! And shots from cannon at clouds and tops of mountains are not a whim or a game. It is a means of how to prevent a hail or dangerous consequences of

a snow avalanche. An unfavorable phenomenon is provoked at a time and place when it may cause minimal harm!

You intended to take off the accumulator of your old automobile. Why do you start first with the terminal "minus" connected with the body? And in order to rule out the danger of a short circuit, for all terminals are unscrewed with a metal spanner, the other end that you keep no notice of, may lock "plus" for "minus" through the body.

This is only the method of *PREVENTION*. But how many young auto mechanics were frightened by sparks of a short circuit and how many accumulators and spanners were spoilt before this simple rule has become an *ABC*.

And then the method of *DIVISION IN SPACE AND TIME* was used. A spanner could not reach and touch other metal parts any more. They were isolated and removed. The problem was solved and the rules of taking off the accumulator's terminals were forgotten again.

The method of prevention is written in our brains. Due to it, we can catch a ball or prepare an instrument we need for work.

We watch the game of good tennis players with delight. Their beautiful game is a bright combination of *PREVENTION* and *FORESEEING*. Those who use these methods-principles conscientiously are in big security and will reach a lot of success. It is funny but we really run a smaller risk of getting some dangerous infection if we wash our hands before we start unbuttoning our clothes in the toilet. We should touch our body with clean hands!

You can go up the stairs that lead down. It seems to be nothing strange in it. But the paradoxical method-principle *ON THE CONTRARY* displays itself in technology and in social systems in the most strange and unexpected way. It doesn't cease astonishing us!

The mouse of a computer is a wonderful invention that improved noticeably the contact of man with a computer and improved the operation of it. Everyone is used to the fact that this guided "animal" never reacts to our foolish things. It does not

respond with bites to our rude treatment and bears firmly the pressure and familiarities. The loss of sensitivity by the mouse is immediately punished by its owner who starts picking at its tender belly with a sharp object. He does not know, that to preserve responsiveness is much easier if you regularly wash its inner ball with soap.

The mouse is a pliable thing, but not quite alive. That is why I suggest “bringing it to life” providing it with its own means of movement and “defense.” It will be one more step to rapprochement and coordination of biological and electronic brains. Nothing complicated. Two tiny step engines will make the mouse movable. They will revolve the ball in the same way, as the ball revolves the wings of an optic mechanism of reading the coordinates. What is it good for? The mouse will be able to push its owner’s chain of thought by light impulses “in the right direction.” And “live” buttons on its back will be able either to ask pressing or “say” a resolute NO by a responsive flick on the owner’s fingers. Your little mouse will express kindness and tender in response to good treatment and a small trap for the fingers may become a persuasive educational instrument. Isn’t it really so?

The principle *ON THE CONTRARY* may present us with a greater number of such inventions.

It may appear before us as a cyclic change of opposite actions. Constriction will alternate with dilation, attack with retreat, warming up with cooling, division with synthesis. Each pair contains a lot of usual and unique phenomena.

SELECTION OF SYNONYMS is also a method. It’s one of the ways to look at a problem in a different way, find new borders and new possibilities there, where there seems to be no resources.

Study your own language! A lot of inventory methods are hidden there. They appear before us as verbs and nouns denoting actions and processes, and a new combination of verbs may become a new effective technology. That’s why the wealth of a language also indicates technical culture.

From the point of view of a dictionary of synonyms of the Russian language such words as **to find, to open and to invent** are not synonyms. A sad fact!

Supermethods and Superprinciples

It is possible to imagine the birth and evolution of a system in a million of different ways. But we manage to interpret what’s happening and act in the best possible way only if we have distinct answers to the main three questions:

- *Why does this system exist?*
- *Does it carry out its work?*
- *How can we make it more effective or even ideal?*

If there is a clear system conception about the world, then it’s clear why this system exists.

If there is something, which our system can be compared with, then we can see whether the work is carried out successfully.

If we have an ideal image, then it is clear in what direction we should move and what we can do even today.

We use the word **“supermethod”** instead of the dull word “way” or the word “tactics,” which obviously has a military meaning and which is not appropriate for denoting simple but effective methods.

A supermethod is a means of reaching our target, an interim or final target. But much depends on luck!

It’s a matter of taste, whether we should consider our favorite method to be a simple method or a supermethod. All depends on imagination and result. Anyway, this word is more appropriate for denoting methods into which we put much meaning and which obviously require flight of thought.

Setting off for such a flight, we can allow our methods to develop and submit to the natural laws of evolution. The methods will gradually start to transform or decisively substitute each other. They are capable of uniting and thus forming unexpected and contradictory combinations.

There's no wonder that the shape of a hammer and a chisel alter as time goes. And like a tool, we can choose methods according to our taste and change them if it is necessary. Methods are objects of creativity. And we can apply methods to these objects too!

QUALITY INSIDE, QUALITY OUTSIDE. We can easily evaluate the form, but we cannot always find the signs of hidden qualities. We buy trousers and shirts, the rough hems and the worst cloth of which are hidden inside. But the beautiful and pleasant to the touch "face" is put outside. Maybe it's better to wear such clothes inside out? The principle **quality inside** is more important to our body!

If you are playing the role of a salesman, you really don't want to demonstrate the worst qualities of your product. You'll sooner polish a car which is on sale than pour new oil into its engine. **Quality outside!**

Spent efforts and money must create the necessary quality where it's required. You'll have enough time to decorate the facade of your house but only after your house is cozy and warm inside.

A powerful engine of *Ferrari* is beautiful by itself. Its form resembles a rocket engine. It's possible to discern the motor of a new *Ferrari 360* through the "shop window" of the rear window. It's not an accidental whim of designers. It's a deliberate desire to show to all people who want to see it the pride of a sport car – a powerful 400 hp engine.



This is an example of overcoming contradictions. The thing which is usually hidden deep inside is shown for everyone to see.

TO TURN INSIDE OUT is not only a method of those who skin animals. You see, there were some people who backed the project and built the Centre George Pompidu (cultural center, library and museum) in Paris. The building with steel



beams and vent pipes attached to it looks like an oil refinery. “Interiors” are outside! What’s the reason for this “madness”?

Do not try to answer immediately. Before it try to answer the following question. What is the beauty and value of any building? Is it impressive colonnade or facade arrangement? Or is it spacious and light rooms filled with fresh air for people?

Those people who are inside know the answer: **quality inside!** All that “hinder” interior space is put outside! All the beams and communications found themselves outside. That means there is more space inside. Space is the main thing. That’s why such a project is a right solution! Besides, it is easier to maintain and repair steel constructions which are put outside.

Thanks to the Eiffel Tower the project was adopted. If there were no tower, there would be no resolution to put the “skeleton” of the building outside and contend that IT is beautiful because it’s reasonable.

The method *TO TURN INSIDE OUT* (with a certain participation of the principle **quality outside**) has recently got an unexpected development. One of the inventors from St. Petersburg makes cuts on a piece of foam rubber and at the same time turns it inside out. This was way his unusual and funny sculptures were born!

LIKENESS BY LIKENESS is a paradoxical method. It’s a motto of homoeopaths and the main principle of their art.

But not only homoeopaths use this method. The alcoholic syndrome is medically treated by a little portion of alcohol. Good soap is made of fat in order to wash off fats. Cholesterol particles on the sides of blood vessels are “washed off” with the help of the fat of herring and mackerel, which gets inside a human’s body through the stomach. And harmful cholesterol gets there through the stomach too!

CHANGE OF THE FORM of any object can be called either distortion or evolution. This change may also be interpreted as adaptation to new conditions or as a method of multiplication. Simply one object turns into another!

CHANGE OF THE ENVIRONMENT can be interpreted as a simple change of scenery or packing, or as a change of world outlook and the country you live in. It may be an advertisement method when an attractive background for creating the mood and consolidating the image is made.

CHANGE OF THE BORDERS between objects and systems can be a simple shift of lines on a computer screen or a “compound” process of the devouring of one animal by another.

JUNCTION – DIVISION. In this way, a new organism is born and develops. One border has been erased. Another one has been drawn. As a result of this the facade of a future building or the form of a door of a future car has been changed.

The words, which denote actions, give only tracking and stimulus for the work of our imagination with a concrete object or image. But there are frames of traditions and standards which cement the channel of our imagination. This gloomy side of restrictions is known to everybody. And only few people can say which restriction is imaginary and which has a fundamental basis. If you want to get to know it, you should rise over these restrictions and look at them from above, from the “oversystem”. It’s hard work for the imagination of the majority of people. That’s why a more popular method – **to touch restriction** – is more frequently used. To remove a restriction and see what’s behind it.

Everyone knows the method of modeling from childhood. It’s a game that helps to find out the role of restrictions. It’s a possibility to find a solution inside or behind their frames and a relatively harmless way to convince yourself in the firmness and usefulness of restrictions. To find “useful” restrictions and to get rid of “imaginary” ones.

People make use of the method of modeling in order to determine functions and value of each link of a system. Sometimes this method is called **the method of removal of supports**. People remove “supports” (system elements) one by one until a system or its model crashes down.

People with a “dangerous” way of thinking can seriously, and for a long time, free their imagination from standard restrictions. The recipe is very simple – to throw off all the restrictions. An “unbound” flight of thought and complete freedom. No restrictions! Only the goal and means which are useful for this goal. It’s a matter of chance whether the route of this “flight” gets into the legal space or finds itself far behind its borders.

“Normal” people want harmony with the world that surrounds them and very seldom allow themselves to be completely “unfrozen”. We really need restrictions. They are supporting points and game rules. We try to use only the means, which don’t contradict the conception of the laws of nature and the legal law. We hope to derive profit from the principle of coordination with people and nature. That’s why a treacherous violation of these rules by other people fills us with indignation. But nevertheless, all of us find methods and “elegant” tricks within the framework of the laws of nature and society. This is the art of any successful, and at the same time, reliable business.

BRAKING UP – GRINDING – DISSOLUTION – SPLASHING.

What is it? A chain of synonyms? A technology of making sugar? A short story about how to prepare and use paint?

It’s possible to tell about any technology with the help of a chain of methods. So, maybe a historical event or a crime has been described. But the most remarkable fact is that with all

the variety of natural phenomena, historical events and technologies, the number of methods and the most successful combinations of them are far less than the number of facts, which historians and technologists are ready to pay attention to. People who are already convinced in that do not ask whether it's possible to find out what's going on. It is possible to cognize the world and you can directly participate in the creation of your own world!

A chain of methods is technology. And if there is some substance, energy, imagination and common sense in it, the picture is noticeably reviving. A synthesis will start! Nothing extraordinary. Simply the achievement of the required result with the help of accessible means.

If you can foretell the next fact in the succession of events, it's also an act of synthesis. No mysticism. Simply a natural development of a right model.

Modeling is a serious occupation even if it is a game. A good imagination is the best instrument for modeling. The computer is also a good instrument. It's difficult to reach full coordination with it, but if your computer model turns out to be a right one, then you'll possibly get the conclusions, which your brain has no courage to get.

Millions of people in the world of different ages are sitting before computers. Their bodies are slowly becoming "woody" and their minds are getting wiser. People are busy creating models and communicating with models. Virtual space is a world of models!

Reading of books on zoology in a clean and light library is better than hard work with animals in a stuffy byre. Which criterion is taken into account here?

Work in a library is really a fruitful pleasure if there is an interest in what's going on in a byre – an authentic information about what's really going on there and the right to change the situation. **Possession of a competed system** makes any work on its perfection interesting. This is the charm of property and the main secret of inspired work. That's why many of the state clerks are dreaming to become farmers, and rich en-

trepreneurs are not squeamish to earn money on litter processing.

Motives to work, habits and instruments of work exist and develop together. They disappear also together. The writer Andrew *Platonov* was conscious of this fact, telling about collectivization in his story “Foundation Pit.” Peasants deprived of their horses and instruments of production at the same time lost sense of life. Many of them simply couldn’t go through this loss. They lay and died because of the irreparable loss.

To do justice, there were also lots of people who tried to rebel vigorously. But *Platonov* could hardly tell about them. Starting from the second half of the twenties, communist ideology with its legend about “creative work” was for the high ranking authorities a matter of worship. A different point of view was destroyed with a person who had it, and writers were not the exception.

A viable idea and fertile soil are the two main conditions of development. This is the way of existence of laws of nature. But an idea needs not only a fertile soil with vitamins, energy and moral support. It requires “quiet” time for the “embryonic” stage of development. If we plough this soil with revolutionary methods every day, it will produce nothing but mutilated half-dead sprouts.

If we don’t disturb the soil, it will possibly produce wonderful plants.

The Principle of Fertility will come into power:

The birth of a valuable fruit requires seeds of an idea and a favorable, stable environment.

A new big crystal will grow around a grain of a crystal. This effect was noticed long ago and now it is used for the creation of artificial diamonds, rubies and other valuable crystals.

We can watch this effect not only on the micro level. To find cores of quality which are able to turn into fruit-bearing trees is an organizational supermethod. State governments and business leaders use it to draw advanced technologies in their countries and enterprises. They find cores of quality and hope

to turn them into spots of economic growth, which attract intellect and capital. They create stable soil and favorable conditions of development, and not only for the sake of profit. Their task is to employ the hands of the redundant, update and modernize their country or enterprise. There are some romantic people among them who see temptation in the possibility to turn the whole country or their enterprise into a beautiful garden in blossom with the help of cores of quality. Into paradise for business and intellectual growth of people!

Those people who crave for investments, but can't get them, have one main problem. They can't create conditions for cultivating cores of quality. And if they want to solve this problem, first they will have to create beneficial soil and demonstrate its ability to bring fruit. Investors will immediately appear as soon as they detect signs of fertility and possibility to defend their interests.

The art of a talented teacher starts when a teacher "gets down" to the level of his pupils conceptions, their language and modest level of knowledge. In this significant moment, they get into a blessed state of co-ordination and synchronization. Happy pupils run into the shining glade of their teacher's knowledge, and they fill their mind with delight of sudden inventions. They understand him!

The shining glade has its borders. Smart pupils will soon find it out. Delight of enlightenment will be replaced by sadness of the found restrictions and gaps. But pupil's development won't stop if the glade is not surrounded with barbed wire and is not turned into a pen for shearing sheep. They will go away to find new lit spaces and felling of "dark forest." They don't need their old teacher any more.

Why am I telling all that? We are interested only in things that lie beyond the border of our understanding. With small effort, things which seemed to be mysterious a moment ago turn into the ABC! A short period of time passes and mysterious teachers turn into old bores.

Is it a paradox or simply a sad fact?

This fact is twice sad for an *IDEAL TEACHER*, because he doesn't leave any questions unanswered and loses his halo of mystery. And even the best of his pupils don't need him anymore. And the more able his pupils are, the faster this process goes.

“Do not forget about your dream,” *Lee Jakokka* urged his personnel when he occupied the position of president of the Ford Company. By putting forward such slogan, he demanded from every worker a written plan for the next three months. The officials did the same. Every senior official wrote such a plan for himself and a person who occupied a higher position on the company's hierarchy adopted it.

This is the way *Jakokka* thought. Your plan is an area of your responsibility where you are the master and can apply your initiative and talent. You are free within your plan.

Of course, he was cunning. A personal plan is a means of making yours (theirs) work more intensive and productive. On the other hand, this is a way to establish a dialogue and overcome contradictions between the initiative from the bottom and requirements from the top!

Summing up the results and discussing a new plan reveals problems, but at the same time, this contributes to better understanding and relationships between the boss and his workers.

“I started doing this work simply because I didn't know it was impossible to carry it out.” This is the way inventors say after they have reached a noticeable result. There is some courage and resolution to reach the goal in this coquet phrase rather than boast. This is an example of how:

<p>The First Principle of Uncertainty of Result works: <i>Every idea, even the craziest one, can come true.</i></p>
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That's why do not hurry to bury your ideas and ideas of other people. Many of the obstacles are made by people. That is why sometimes it is useful to start carrying out your idea before opponents start “killing” it. The stage of hidden development is very useful for an idea. But a strange thing is that not only a careful and competent attitude to an idea is necessary for its strengthening. It requires hits and poison of

sary for its strengthening. It requires hits and poison of the critics. Only in this way, is it possible to detect “invisible” disadvantages, work out the immune system against the “infection” of doubts and find out with wonder its advantages and beauty. That’s why in order to check an idea it’s necessary to show it to those who can “kill” it. There will be more than enough people who want to, but there will also be some people who want to back it.

The life of a new idea is supported only by imagination of its supporters. Their task is to materialize this idea. That requires strength, time and sacrifices. That’s why many people step back, preferring to operate a more reliable and “profitable” business. But don’t hurry to be glad. Now:

The Second Principle of Uncertainty of Result works:
Every business, even the most reliable one, can be a failure

That’s why it’s really worth finding weak points of your “reliable” business and ways to strengthen it.

An *IDEAL PLAN* or ideal strategy. Do they exist?

An adventurous enterprise has a chance to be a success and a reliable business has a chance to be a failure. The estimates, “adventurous” and “reliable,” reflect only our subjective conception of this. It’s an opinion which has been worked out in communication with other people. The truth may be located far aside. The point of view of a newspaper, TV company or the best friend are not a secure basis for the right conceptions of nature and society. That’s why everyone needs a foothold in the real world. Otherwise, where should we get grains of truth, and how should we evaluate the quality of the virtual mirror which is brought to us as truth? According to the quality of the picture or commentary to it?

It’s easy to deceive all of us if someone offers us something that we want to hear and which is coordinated with our conception of the world. This is the key that all the mystifiers and swindlers use. Politicians and journalists don’t neglect it either.

A personal contact with the world is point #1. An ideal or goal is point #2. The distance between them is a way that you

should cover alone or in the company of like-minded persons. This is the essence of any faith or hope of people. You compare the real world with the image of ideal and you get the direction of development and stimulus for actions and self-perfection.

A perspective to appear before God after death seems to be more probable for many people than achievement of a personal tempting goal. A “miracle” as a result of your own efforts seems impossible. A lot of people got used to this paradox. They think this state of things is a norm, and they don’t believe in their own power. They are simply afraid of stretching their hand towards the target, which lies beyond the border of their opportunities at this moment. This inner restriction paralyzes their talent.

The essence of every program that has sense seems to be quite simple:

Goal + Means of achieving it.

A clear and realistic goal causes trust. But there’s also some space for adventurous plans. The perspective to win attracts people.

A desire to get a tempting result without any considerable efforts with the help of an elegant trick looks irreproachable on neither side. But if this possibility exists, nobody refuses it. Of course if a person sees it and understands that it’s really a possibility.

Every person goes his own way. Some crave to decorating a big beautiful “cake” with themselves. Others build a “cake” around them, and the third try to eat it. In any case, it is required to get into the zone of operations, into the company of builders or eaters.

An operation zone is a favorable environment, where efforts have response in terms of useful results.

A piece of fertile soil, tractor levers, computer buttons or a president’s office are examples. Each working place can be called an operation zone. But we will be interested only in

those “working places,” which may be created by workers themselves.

The search for a goal, which is coordinated with possibilities, is an old problem. “A big and shining” goal is a way to attract supporters with a minimum risk of spending the credit of trust before a success or catastrophe comes. It seems to be a paradox, but both outcomes save a leader. A catastrophe is even a more effective means of rallying than a dull prosperity. A smooth course of events and transparency of power “bind” the hands of any leader. That’s why many of them are inclined to secrecy, suspicion and search for enemies. Paranoia and resolution are the means which they turn into means of strengthening power. And if both qualities are strongly pronounced in a leader’s character, he achieves a significant success.

Of course, there are some other variants of the development of personality and social systems, which are not connected with the construction of a huge pyramid and fight for power. But unfortunately, not all the leaders are anxious only about beauty and effectiveness of the systems which submit to them.

“A child is the father of a man.” An old truth that everyone, who watches the development of their own child and growth of responsibility for his fate, agrees with. Those who are able to preserve a “naive” strive for a goal “beyond the border” achieve a great success. And if you lack desire and adventurism, you should simply find a goal, which is slightly beyond the accessible means. You’ll feel the power of:

The Principle of Super Motivation:

If a goal outstrips means, then it breeds them.

It is the most powerful method to find resources and new solutions. And the right method to pass for an adventurer!

Which is more important, the *GOAL* or the *MEANS* to reach it? This question reminds us of an ancient philosophic sophism, “What was first, the hen or the egg?”

It’s impossible to turn a goal into result without a means. But without a goal any means remain dead!

Proceed from the high positions of a system, a goal is considered to be the main thing. That’s why people who are obsessed with a goal try not to give obligations to those whom they consider to be means. They often interpret such traditional values as honesty and decency as unnecessary restrictions.

Auto mechanics love their cars more than race drivers. Maybe that’s the reason why mechanics seldom become high-class race-drivers? They think differently. A car and its “health” is the main thing for them. The main thing for race drivers is victory with an obvious risk of killing their cars and themselves. This is a source of the fundamental conflict between a goal and a means. To aggravate this conflict means to bring down the effectiveness of this system. That’s why **a goal and a means must be coordinated!** It is here that beauty and self-sufficiency of systems lie. And persistence in reaching a “big” goal with “small” means often looks like an obvious pathology. A dangerous divergence of means and a goal turns people into odd fellows, adventurer and even swindlers. They ignore an intuitive striving for things that are considered to be possible and at the same time reliable.

On the other hand, a stupid delight of the feeling of harmony and self-sufficiency is also a dangerous state, which can cause a motive for a search of perfection to disappear. The result is absence of progress and an obvious risk of degradation.

Sometimes it’s possible to find the golden middle between the two extremes to use:

The Principle of Co-Ordination of a Goal and Means (the Harmony of Growth):

A system acts effectively and develops harmoniously if its resources are coordinated with a goal.

If you are deprived of moments of joyful perception of harmony, it means that the way you carry out the principle of coordination lacks something. And you must decide for yourself what it lacks in particular, means or a reasonable goal.

Guys with an adventurous way of thinking start with the selection of a big goal. Do you think you are worse?

But keep in mind, that choosing a “big” goal you’ll have to invent a reliable trick which will provide you with missing means for reaching coordination.

Having just climbed up a mountain, a mountain climber dreams about another one, which is higher and less accessible for others. Having reached one goal a person sets another one and strives for it. This is:

The Principle of a Chain of Motivation:

Thirst for reaching is growing if it feeds on success.

This principle was many times tested on animals which can be trained. Your child is also ready to acknowledge it if you guess to check it.

Any success, even a very small one, should be put into a store of success. Small things create mood, and mood influences success in more significant businesses.

There are more than enough people who want to break your chain of success and build it in their own pyramid. Their goal is to use your resources in their own interests and at the same time to eliminate a potential rival. That’s why having detected your “harmonious state” with some signs of growth, they will probably try to rob or even destroy you. That’s why *build your chain of motivation secretly, defend it and do not even think to advertise it!*

People don’t have to tell each other the truth. Maybe that’s the reason they lie more often than it is necessary. Is it because of the love of art?

A LIE is a paradoxical method. A strange thing is that a lie, which is turned outside, is used as a means of fight. But a lie, which is turned inside, becomes a medicine. A few people constantly want to see their mirror reflection or their body in section. Every person needs his own imaginary appearance, which he more or less thoroughly polishes. All people do it with a different rate of success. There’s no other way to be a normal person and to self-affirm.

But there is another extreme. **A general lie** as a basis for ideology and politics. It’s a civil war syndrome and it’s a disease.

We inherited the traditions of lying and treating people with distrust since the time of the bloody Civil War and Stalin’s repressions. That’s why people who state that the Civil War is not over are right. Its syndrome is alive and keeps on poisoning relationship among people. Civil War in its “cold form” will really be over only when people are able to get rid of lying as one of the most popular ways of survival.

*Peter Kapitza*⁴ once noticed that only talented people could evaluate and support talented ideas. But he didn’t say that every talent was absorbed in his ideas and at that time he didn’t want to deal with other people’s talent. People who don’t have any ideas or talents of their own have the gift to seek them. This is the way they exist. They understood long ago that life was a game, and the most successful tactic was to be the first to find and the first to grab. But if it’s not possible to create and find something, they are inclined to use:

The Second Principle of Super Compensation:

A quick reaction and ability to grab compensate for the lack of ability to create and discover.

How shall we act? Shall we quickly and on our own use a possibility we have found, or shall we seek another one which is more tempting but leaves the risk to lose the one that we already have?

It’s possible to resolve this contradiction only with the help of **secrecy**. This method is recorded in our subconsciousness as a method to fight. It is not widely spoken of, but clever and foolish people use it as well as the principles of super compensation. Rich and poor countries, big and small animals, their children and our children also do it.

Sometimes it’s important to understand when and how friendship and partnership turn into cruel rivalry. It is at this moment that secrecy of one person becomes an obvious advantage and openness of an other becomes a huge disadvantage. **Suddenness** follows secrecy. If you haven’t noticed war

⁴ Russian physicist, winner of the Nobel Prize.

preparation against you, you'll hardly avoid a severe and abrupt blow. That's why sometimes it's worth looking around.

People return **secrecy** for secrecy. This causes **isolation!** People who are isolated don't give anything they have to the others, but they also don't get anything from the others. That's why isolated systems are doomed to drop behind in development as any other organism, which is deprived of vitamins and information. That's why it is not worth "bricking yourself up" into the wall of isolation. There are enough people who want to brick you up into the foundation of their organizational pyramid or their monument.

On the other hand, there is no complete openness even in places, where everyone has a sign on his face "complete freedom + complete openness." These are game rules of this game field. You have to give "openness" for the possibility to get anything. And here it's important to understand that jealousy and envy of some people to "advanced" people, as well as some poorly developed countries to the West which are reported to use their resources, are good things. It's a school for "fools." It's an example of how well informed and enterprising people **use accessible means to reach their own goal.**

Do you also want to become free, effective and rich? Use:

The Principle of Likeness of Results:

Do the same way, and you'll get the same results!

Of course with reserve, you have chosen a good example, which is really advanced towards the ideal.

Remember about the **principle of co-ordination** and the method **inside out**. Having shown care and generosity to other people you'll feel something of this kind to yourself and your business. It might not happen only in a company of absolute idiots.

The simplest algorithm that we constantly use is a chain with 3 main links: **problem – cause – solution.**

It seems to be simple. To choose main links and determine a chain of dependence between them.

The difficulty is that we seldom manage to identify the essence of a problem immediately and find the best way to solve

it. That’s why the most part of what we do may boldly be called mistakes, or at least we are not doing our best.

Optimism of scientists and their confidence in cognoscibility of the world are justified by the success of natural sciences. But it is known that with widening the circle of knowledge, the border of unidentified is widening too. That’s why for all of us lots of things remain obscure. This is:

The Principle of Doom:

It’s not possible to understand in detail principles of work of all the systems that we control and trace all the results of their work. Mistakes are inevitable!

In order to preserve optimism and ability to orientate ourselves in the world that surrounds us, we have to use one simple rule. *To watch the main function and the most significant result.* All the rest we can leave without our attention. But if we speak about nuclear power engineering and other issues, which are potentially dangerous, we’d better forget about this rule. New priorities – new rules!

To solve a problem in the place it appears! This seems to be the way that an ideal strategy of perfection of systems and treatment should look like. It presupposes elimination of causes, not symptoms. Elimination of symptoms and treatment are not the same things. It is possible to smooth away and suppress symptoms, but the disease remains.

To solve problems without creating new ones! If it is possible, then it’s an ideal strategy of development.

There are solutions for a day and for a year. But there are solutions forever. That’s why to find the route of a problem or the main contradiction is more important than to find a temporary solution. It’s better to spend time and money for diagnostics than throw it away for an unnecessary “surgical” operation.

BRAINSTORMING is a joyful way of generation of ideas. It’s an inspired stream of consciousness and joyful exclamations, which start with the words, “And what if...”

A friendly atmosphere, absence of critics and pressure is the main condition of this method, which can be called a festival of human thoughts and emotions.

- *And what if we put air conditioners on street intersections? It is there that city cars burn one third of their fuel! It means these places need airing. It is necessary to set a big vertical pipe with a ventilator along the wall of a high building and let it suck the smog. Or vice versa, let fresh air go through this pipe to the mouths of poor passers-by!*

- *And what if we washed a man's body from inside with a special detergent? People are growing old because dust and other insoluble substances are accumulated inside their bodies.*

- *And what if we warmed a houses with the heat of a human's body? The walls of a room are mirrors! They reflect heat inside and accumulate it there.*

- *And what if we prepared food with the help of a standard set of components? The recipes of our favorite dishes are taken from our chromosomes!*

- *And what if we exchange a meal by the information about it? Sensations of food instead of food. An ideal diet!*

These are only funny examples. You can smile at each of these “unshaved” ideas or turn them into useful inventions using your unique experience and possibilities.

Synergetic is a “divine” principle of multiplication of ideas. It's a quality of any well-organized team or a company of friends, where trust and respect rule and there's no severe rivalry, envy or quarrels. You'll manage to create such conditions if you appreciate friends and a state of harmony.

We can use possibilities of a self-organizing system wider, if we can do without violence and conflicts. A lot of people understood it intuitively, but Dale Carnegie was the first one to explain this phenomenon clearly and colorfully. He told us that we simply had to respect people and treat their abilities and pride with care. It's not worth “remaking” them and pushing them into the framework of our own concept of ideal.

To solve many problems it is sometimes enough simply to help them to do what they must and want to do themselves. In any case, you should reach understanding. It is simpler to reach your own goal if you take into account logic and the interests of your partner.

It’s a hopeless thing to make a cat do what it doesn’t want to do. That’s why for a long time people thought that it was impossible to train a cat. But an outstanding Russian clown *Kuklachev* appeared and showed the world dozens of trained cats!

He explained, “I don’t train cats, they train me! All I have to do is to show what they can do.”

It turns out that high effectiveness may appear as if by itself, as a result of understanding and coordination, but not as a result of violence. But we’ll have to sacrifice our own ambitions of creator and master of it.

But each sacrifice has its limit.

To mark a *CONFLICT* is not a pleasant method. But a threat of conflict leads to compromise. If your rights and interests are roughly violated, a conflict is inevitable. You’ll have to choose one of the two ways: to smooth out “acute angles” or accept a fight. In any case, readiness to a conflict will sooner stop an aggressor than provoke him. And vice versa, gentleness and absence of defense corrupt and stimulate impudence and greed. And here the threat of a conflict plays the role of a negative reverse connector, which is the best way to stabilize any system.

A GOOD TASTE IS A FILTER. People who own art galleries and expensive shops have a wonderful taste and use it to find “grains of gold” among mountains of sand. They say so and often they are right. High prices are justified by high quality!

Trade is not simply a tricky craft. It’s art! There are a few principles, which trade is based on. You should **know where to get a product and to whom to sell it.** You should also know how to deliver, store and present your product. You have to hire trucks, security guys, storehouses and refrigera-

tors; and also keep secrets, buy license, “persuade” clerks. It’s a difficult and troublesome work. It’s full of risk and routine. But the number of people who do this job is growing. Trade remains one of the most profitable businesses. It has room for creativity and excitement as well as for methods to fight, the main of which is secrecy. The less information about the source of products your rivals have, the greater is your profit.

Advertisement is a necessary adornment of trade. People who deal with advertisement have the task to attract attention to a product. They either find all the splendid properties of a product and draw our attention to them, or simply “stick” these tempting properties to it. A product has an old construction and old chemical composition, but thanks to advertisement it acquired a new attractive property.

A new radiator bar of a car and a new label on a bottle of well-known sweet water can arouse interest, renovate image and urge demand.

People won’t buy your product if they don’t know about it. That’s why you have to fight for people’s attention. A striking property or sign must arouse interest and force your rivals out of the consumer’s mind. This small victory in a “magic” way turns into necessity to buy YOUR product. **To stick a property** means to create temptation and urge demand.

Some guys keep dairy cows, others – bee swarms or simply banks. They use the method **a little from many**, and they know that the creatures that give them their milk, eggs, honey or money must feel calm and comfortable (the principle of *COORDINATION*), otherwise the yield of milk will fall. You should take care of your wards. They need kindness and attention, and you should wisely distribute them among all using the principle of *MULTIPLICATION* of smiles, hand-shakes, forms and tricky movements while serving some of your more or less sociable pets and clients. And you’ll have to learn to control the **feedback**, which they will try to strengthen.

I don’t know what’s better, a sting of a bee or a biting remark of a client. Both professions of a beekeeper and a banker have advantages and disadvantages.

Nature itself never explains its phenomena. We have to seek causes and conformities to natural laws – in other words to *IDENTIFY*.

People are also inclined not to explain their actions, even the strangest ones. We have to guess causes and motives. Variants of answers lie in two spheres. These are interests (motivated actions) and incompetence (mistakes). Interests and incompetence exist together. I’ve never met skillful masters of their own interests who make no mistakes.

To find causes of natural phenomena and actions of people is the art of **identification**. It is useful not only because it gives a possibility to understand the essence of what’s going on. It gives a possibility to foretell.

On the other hand, a successful identification gives the possibility to interfere effectively with what’s going on and manipulate natural phenomena and people. That’s why military secrets and state leaders are so thoroughly secured.

In the time of the *USSR* “prosperity,” I heard different people, who worked in different fields of engineering, telling me some stories that resembled each other very much. It is possible to retell all the stories this way, “I was given a prospect of a foreign firm with the picture of a machine (technological line). I proposed to make such machine. In our constructor’s department, we were trying for a long time to discern and understand what was hidden under this and that casing. We “guessed” how it was constructed and prepared drafts. In a year, it was in operation.”

The fact of the existence of a product with tempting properties impels a lot of people to get to know how it is made and stimulates the creation of analogues and a desire to surpass. Someone buys patents and licenses using the method of *COPYING*, which guarantees a result, and someone, looking at pictures, guesses secrets of manufacturer using the principle of *IDENTIFICATION*.

Imagine that you are chief of a construction department. You feel that your collective have started to lose enthusiasm. Invent a fairytale that according to an unconfirmed data a rival

firm is nearly finishing an analogous elaboration – so your project may be exposed to threat. This sad bluff may turn out to be true but you don't know it yet. An **outside threat** will add power and solidarity to your personnel. And you should believe in it as well. A strong **motive** is needed for inspiration and effective actions.

Sometimes we don't see any possibility or even sense in “getting up and going on.” As a response to this, we enlist a small and strict sergeant to serve inside us. The only thing we have to do is strictly obey his orders!

TO ADVANCE A SLOGAN is a method from the arsenal of politicians and military men. Sport coaches, educators and teachers use it. It also works perfectly well in a company of friends. It is also the principle of **motivation**, but it works on the level of emotions and subconscious.

A slogan is a furious set of a task. It's an appeal to participate in reaching a tempting goal. It's an emotional stimulus to find a solution of a difficult task and a good cause to start doing it.

If once in the morning you joyfully and clearly tell your personnel or friends about a new task, it's solution may be found nearly immediately. Don't be amazed if you find it yourself. And if you sincerely enjoy solutions of your personnel, the creative spirit will be consolidated and be useful to all of you.

About 200 or 300 years ago, most city dwellers used one big and common clock which was attached to a tower of the town council. With its impressive outlook and sounds, it showed time and helped to establish a rhythmic life of the city. A big common device helped a useful to all people principle – that of *SYNCHRONIZATION*.

But time was passing just the same even without a tower clock. Cheap pocket watches appeared, and no one except newcomers throw back their heads to look at the local sight.

Not long ago the world survived a similar metamorphosis. Personal computers appeared, and the number of people who wanted to use huge common calculating machines definitely

decreased. Old *IBM-360* and similar models began to die out as mammoths. Personal computers and the principle of *DE-CENTRALIZATION* forced them out.

Politicians, ideologists and strategists of commercial enterprises know only theoretically about the existence of this principle, but not always see it even while looking steadily at it. By doing this, they create problems for the systems, which they are called to govern.

In the late 70's, the *IBM* Corporation overlooked a possibility to create a powerful desk computer and suffered huge losses. Production of the *Apple* Corporation invaded the “territory” of *IBM*. But big pyramids are sometimes able to survive. *IBM* had to accept the idea of decentralization – “every person will have his own computer,” and thanks to its “sworn friend” was improved. Consumers got the main prize. They are grateful to *Apple* and to *IBM*. As a result of their rivalry, there appeared computers on the market at the price of a typewriter!

Decentralization and de-monopolization are powerful stimulants of technical and social progress. This simple thought is new only to totalitarian and criminal systems. It is there that such news is nipped in the bud.

A PARALLEL ACTION. There is always a possibility to establish your work so that your personnel carry out several tasks at the same time without any detailed centralized control. This is the way our organism is arranged. Our consciousness does not control digestion and blood circulation. Local systems of self-regulation and control which we inherited together with life work independently.

TO PLACE PRIORITIES. There are always some pleasant and unpleasant tasks, which we have to carry out first. Among these tasks, there are tasks which we can't ignore or transfer to the near future, but there is always a possibility to do something earlier and something later. That's why to put the most significant and perspective tasks to the first place is our natural quality. We dedicate to them our quality time.

The main news is the most unpleasant thing. Sometimes it “comes in flocks” and is capable of spoiling our consciousness

fast and for a long time. Each link of a chain of unpleasant things is a new hole in the pocket or health. So, the main trick in the fight with unpleasant things is not to turn them into one big aching wound. Do not pile them up! Each unpleasant thing must have its own place, its isolated check. If you allow them to unite, they will multiply faster than rabbits. They will flock together and eat you up. Do not give them such a possibility. It's possible to manage them if they act separately.

Usually our consciousness is protected from excessive unpleasant information. But strive for precision and effectiveness often destroys this ability. Our consciousness is overloaded with the burden of problems so that a man grows torpid and loses his ability to work effectively. He is so stuffed with problems that he doesn't even notice his awkwardness.

Do you want to preserve mobility of your boat? Do you want your air balloon to lift over transitory ground and get closer to the heights of creation? Get rid of this excessive burden of problems, at least in your thoughts. *DO NOT OVERLOAD THE BOAT!* Do not do things today, which you can do tomorrow or never. Especially if IT lies a long way off the main goal and duty.

All is well with your car, but it lacks one wheel. That is enough to deprive it of its basic function.

You have the best and the up-to-date product, but in 3 denominations only. Clients are sad. The absence of sight and coziness frightens them. Arguments in favor of quality and a reasonable price won't help! A doll that lacks a hand or head also frightens small children. A ball, which abruptly starts to blow its air out in the hands of a little child, can frighten him and make him cry. Even children feel abnormality of systems!

There is a key to perception of harmony. It's the principle of *COMPLETENESS OF A SYSTEM*. It's a state of mutual supplement and completeness, which gives birth to high effectiveness.

It's not possible to improve something, which is made ideally! That's why we have to acknowledge with pity that approaching the ideal, reserves of an easy success are depleting,

and the rate of progress is definitely slowing down. Many systems are close to a deliberate ideal, and many people think there are no prospects for their further perfection. Is it really so?

We need a motive, an acute conflict or temptation, to find an idea and to reach a desired success. It is in this way that the way to many inventions and discoveries started.

To find and take an unnecessary screw out of a perfectly adjusted mechanism is a difficult task. Can we make it easy?

Closely watching a system which we want to improve, let's first of all give up our old idea of its aim. Let's try to find a new formulation of its **main function!**

We have a new and clear formulation; let's find the same formulations for the main links of a system. Links also have their own functions, and we can also find new laconic definition for them.

As soon as you find them, you'll see at once those unnecessary screws and metal parts, which were employed in vain!

A new approach and new definitions will make you see not only disadvantages of a system and its parts. You'll see what its parts could do but do not do now.

At this remarkable moment of a new distribution of tasks among parts of a system, it is possible to detect not only unnecessary screws, but also unnecessary mechanisms, without which the system doesn't lose quality but can be more effective and cheaper at the same time.

To detect main links, redistribute functions, eliminate unnecessary links. This is a program of structural perfection of a system. The main slogan of this program is to **remove something which is unnecessary and add something necessary!**

It is possible to formulate the same thing strictly and precisely. **To remove unnecessary links and add necessary functions!**

This may be enough for the solution of many acute problems unless we see problems of a higher systematic level. Improvement of the structure of a subsystem can disguise but not

eliminate these problems. **A false goal makes senseless the whole system of reaching it!**

At this difficult moment we need something more than a new construction impulse. We already know the recipe. We set a task to change the goal, to find a new formulation of the main function of a system and to construct a bridge with the help of accessible means towards a new real goal.

But what shall we do if we don't want to change the goal and the old system is not capable of carrying it out? It has no more resources for new experiments!

Do not hesitate – it's a "reliable" dead-end!

There is only one way out – **to minimize the goal**. It must be coordinated with existing possibilities, because we have to reach this goal with the help of an old system and its "material."

The disappointment of former *USSR* citizens is in many ways with the failure of the idea of "building communism in one separate country." If there are still any supporters of communism, I'd rather advise them to build communism in one separate collective farm, the way Israeli did. An Israeli kibbutz is a vivid example of communism within a rural community!

It's a strange thing. Why don't communists use this model in Russia? Maybe because they are interested in huge pyramids only?

A VIEW FROM THE BOTTOM, A VIEW FROM THE TOP is a method of systematic modeling. From an oversystem it is always possible to see a temptation to solve a problem with the help of powerful means of a high systematic level.

Once I watched an experienced mechanic who carefully closed a box of matches with ... the bucket of an excavator! An impressive trick, which is perfectly suitable for a circus or a technical fair. But such actions seem to jeopardize conventional work. And the jeopardy is not only in the size of the machine and the danger of a mistake. The real threat is in wastefulness and absence of economic sense.

But as soon as we pool an excavator to a circus arena or turn a construction area into a mass sight, the feeling of senselessness will disappear. It's simply show business!

A glance from an oversystem may be very useful if it prompts that **this** problem, which seems to be important and urgent for us, does not exist in any similar system. **This** problem has already been solved or simply doesn't arouse because of the principles, which are typical for that system. All we have to do is to use a proven “remedy.” But it's possible only in case we manage to understand the essence of the solution and contrive to build it in a system, which is “alien” to it.

To reach a goal with some other possible means is an obvious method only in case we have an elegant roundabout way or a possibility to do without the object that caused a problem. The second reason why we should remember about this method is that a roundabout way may be well hidden and the possibility “to do without” may not be accessible.

A glance from a subsystem tells us that solutions at a high systematic level are seldom good for all. The world of insects is suffering from the wheels of tractors and cross-country vehicles. “Small people” are suffering from resolution of their bosses who want to reorganize “their business.” That's why it's difficult to estimate the real value and total effectiveness of a big project without a **view from the bottom**, which reveals “new truth.”

Looking into the object-glass of a TV camera, *Nickita Michalkov* spoke with pride about the idea to shoot a film about the Civil war. The thing is that the narration is undertaken from the point of view and on behalf of a conventional participant of the events. A horse!

A new point of view is a new source of information and a new way to assess what's going on!

The idea of a glance “from aside” at people, their problems and tragedies seem not to be new. Literary characters in appearance of dogs, fishes and even cockroaches spoke a lot about their problems and people. A horse is also able to manage this task. But the method itself gives a possibility to find a

new point of view and discern something that people simply didn't notice before.

While listening to the heartfelt words of *Frank Sinatra*, "...another season, another reason," you understand that it's a method too. "Another season, another reason," or in other words, **other thoughts at some other time**. It means coming back to a well-known subject we look at "in a different way." We find out some of its properties, which we didn't see before. We get back to an old problem with new experience and new possibilities to solve it!

In other words, if we can't solve a problem, let it have a rest. Get back to it later or...never. It may be resolved by itself or disappear as a mirage!

Looking at your own life and the life of your friends and acquaintances from aside you should admit that it's only a natural phenomenon. Their success and failures are as natural and inevitable as the motion of space bodies.

On the other hand, there is always something that we could do but didn't do. We didn't do it because we considered it impossible or very difficult.

About 150 years ago an outstanding French writer noticed that a fool didn't see an obstacle and that's why he sometimes got over it.

The Paradox of Maupassant:

A man, who doesn't see an obstacle, can get over it!

Not to see an obstacle is a paradoxical way to overcome it. That's why let's search not for obstacles but for possibilities to overcome them. Let's simply do our job without pretending to be very smart guys. Let's calmly and persistently overcome obstacles, but not our "inferiority complex" in respect to this obstacle.

Let's believe in the fact that every obstacle exists outside us. It's possible to round it, break it, move it out, jump over it, cancel it, dissolve it and persuade it. Sometimes it's possible simply to forget about it!

Engineers found out with wonder that refrigerators, which they constructed, had been working for 40-50 years, and diesel

engines had been moving without any malfunction huge trucks for million-kilometer distances.

Young entrepreneurs found “strange” ideas and on “blank space” made products out of them, which everybody needed. People watched with wonder those unshaven ducklings turning into beautiful princes. These lucky men may afford undue familiarity but it will be a lie if they say that they foresaw their success. One more principle was employed:

The Principle Success – Surprise:

A result may be better than a dream about it.

Failures are not pleasant, and people prefer not to speak about them. But still it’s worth investigating them. We don’t have to know the real cause of our success, but we must know for sure the causes of our failures!

Often success exists as a reverse side of failures. A little bit of resolution, dexterity and experience – and the number of failures is decreasing. Success is forcing failures out!

Laws of development of systems and methods of reaching a goal are universal. People reveal them (more often intuitively) at places where conditions for their understanding and effective use have matured. That’s why ways of thinking of people from developed countries as well as cars and planes that they produce are quite often very much alike, in spite of the fact that they are separated by oceans and speak different languages. One more natural principle acts.

The Principle of Likeness of Systems:

Healthy systems that have one and the same aim are beautiful and alike. Only ugliness is strictly individual.

That’s why you shouldn’t seek your special way of development of your “national” democracy and economy. It’s enough to do it the same way as it was done in healthy systems.

LET’S GET INVOLVED IN A CLASH, AND THEN WE’LL SEE! This phrase and method are connected with the name of another outstanding Frenchman who noticed that his own effectiveness and inventiveness were much higher in critical situations. It’s a quality of many people. The excitement of a

fight and the danger to suffer a defeat turn into an acute motive to be cleverer and to act fast and effectively.

The *RESOLUTION* to act in an unfamiliar situation takes us beyond the border of the self-assured phrase “know how.” One wrong step and the situation acquires an obvious touch of incompetence. But watch a miracle! An idea is born and the brilliance of new knowledge dispels the fog of problems. A brave step into darkness is a good ground to achieve unexpected success!

A conscious desire to step beyond the border of understanding a situation and to ask “unbearable” questions is a usual quality of any talented scientist or inventor. The more acute and tougher a task is set, the stronger is the motive to resolve it. And a person who is able to act in this way is closer to discovery or invention than others. While asking questions, he already feels what he deals with. He knows already what questions he should ask! It is the principle of **divine incompetence** of a discoverer. One more brave step and an invention is in his hands!

RESOLUTION is a paradoxical quality. It serves as a perfect stimulant and even a substitute for many other remarkable qualities of a person. There are a lot of proofs of this.

It was noticed long ago that Hitler and Stalin were to some extent very much alike. Both were outstanding paranoiacs. Their paranoia and resolution substituted their competence in a paradoxical way. But it seems that no one accused them of that sin seriously. They managed to kill 100 million people together, preferably those, who were not going to accuse them of incompetence. Here has shown itself:

The Third Principle of Super Compensation:

United paranoia and resolution serve as an effective substitute for competence and as a perfect means of obtaining power.

But there is one significant difference between Hitler and Stalin which is only partially connected with ideology. Paranoia of Stalin stimulated blows inside his own system, and the basic blows of Hitler were directed outside Germany. That's

why it’s not even possible to compare the damage which Hitler finally caused to Germany and the horrifying legacy which Russia got from both outstanding leaders.

EPATAGE (SHOCK) is a powerful method. It’s a treacherous, shocking or scandalous trick. It’s extraordinary behavior with an obvious violation of accepted norms.

This weapon is too heavy for even-tempered, well brought up and all in all normal people. Usually they can’t afford using it. They prefer to use something that meets their concept of a norm. The most “horrifying” thing they can do in this field is to have a picture taken of their nude body. Nothing more.

EPATAGE is a method of struggling. It’s an unexpected lunge, which may indicate a psychologically unbalanced state or sincere indignation. But very often it’s a specially prepared artificial “burst.” It’s a widely spread method of struggling in a courtroom or political scene. It is a thing that a scene is designed for.

You should not understand *CONSERVATISM* as a negative phenomenon only. To be a conservative means to strive for preserving traditions, a current state of things and to put obstacles in the way of devastating impulses of innovators and revolutionists. It’s a way of strengthening the Law and a reserve of safety of any system.

The majority of members of any advanced society are people with a moderately conservative concept of the world. They are not inclined to dangerous experiments. They serve as a reliable support for those politicians who win votes of the electorate by referring to the “wonderful past.”

The strategy of conservatism is also used in business. Many manufacturers preserve their market share thanks to the prestige of their trademark, which is supported by legends about exceptional reliability and refined taste. Besides they don’t even refer to an innovatory attitude to business, because this reference looks suspicious beside the wealth of traditions.

Conservatism in engineering is nearly a free source of reliability. It’s not worth changing something that time has checked many times and which has won consumer’s respect.

Any changes may bring unpleasant and dangerous surprises. Do the same way your older friends did and even better, and you'll reach the same or even something greater!

These bright sides of conservatism together with competence fully justify it as one of the most popular and effective organizational methods – **to restrain innovations until they mature!**

EFFECT OF A NOVICE puzzles professionals. Sometimes a novice easily does those things which professionals do with much effort. What is the secret of this paradox?

The curious glance of a novice can see contradictions which professionals don't see. Inertia is the reason. While the hands are busy with a reliable occupation, the brain is covered with a web of traditions and put into a blissful state of self-efficiency.

A novice is free from the charm of professional tenets. He doesn't know about the existence of a set of "well-founded" restrictions. He doesn't see them, that's why he sometimes overcomes them successfully.

So, maybe we should use this rare phenomenon as a method? At least as a joke.

It was noticed long ago that outstanding ideas seldom came according to the timetable. Some outside causes are needed for their birth – *FRESH IMPRESSIONS!*

Someone finds them while "running on a meadow and picking flowers." Someone gets them as presents from friends. Someone specially hunts for them.

All of them are glad with a new gain and agree that the fact of gaining an idea is connected with sharp impressions! They managed to snatch ideas and dainty pieces of information out of the stream of their consciousness and the consciousness of other people. This is the way you manage to dispel the fog and acquire power to create or finish your own project.

Nobody wants to take ideas from books. All people need fresh and vivid episodes without a dressing of careful teachers, which has already turned sour. All people need fresh construc-

tion material for their own original picture of the world. Fresh impressions are such material!

“An unexpected confluence of words.” It is with these words that *Pushkin* revealed the secret of one of the main poetic methods. An unexpected combination of words gives birth to a new poetic image and leaves a sharp impression!

And not only poets use this method. The modern theater and the modern cinema are in constant search of unexpected combinations of accessible means. Every painter strives to obtain this method arranging unexpected and impressive combinations of visual images.

Search for **new combinations of “old” elements** is one of the simplest and most popular methods. But we should note that without an idea and a vivid goal, this method looks too laborious. Indeed, try to take some words out of several Shakespeare’s lines and create another poem, a more impressive one. It seems that no one has managed to do it for the last 400 years.

Try to construct with the help of a set of spare parts of *Porsche 911* something more reasonable and impressive. Theoretically it’s possible, but the probability of this event is little. That’s why we can suppose that each combination of elements has its ideal order and its most effective system, the essence and spirit of which is an implemented idea or a reachable goal. The goal disappears and the system goes to pieces of unclaimed and “unhappy” elements.

NOVELTY as a source of natural *MONOPOLY*. It’s a property of many new quality goods which abruptly appeared on the market. Such monopoly is legal and protected by patents and author’s right. This protection is often late and can be only a temporary one. That’s why a constant perfection and renewal of production seems to be a more reliable way to support “monopoly” than the registration of a product or getting a patent. A lot of people understand it. They find a new pep and decorate their product with it. A new advertising campaign is based upon this pep. And in this case it’s not important what comes first, an advertising film with the description of a

unique property of a product or the product itself. It's important that a product comes up to the main consumer's expectations.

A constant renewal of production of some car manufacturers is not an idle strive for perfection. It's a severe necessity. The same principle works here as in sport – if you want to preserve your position, use your power.

Every business has its “sweet” and “bitter” sides. One business is developed quickly and happily, another one, slowly and gloomily. The reason of it often lies in the rate of *COORDINATION* of a product or service with the consumer. Coordination presupposes an adequate quality, quantity and advertising arrangement for each concrete market. Because our product is needed only where people know about it! And you'll be paid only such a sum of money which the consumer is ready to pay, or even less.

Coordination must be not only with the consumer. There are partners. There is a social and a legal environment. You should be a smart fish here, but not a stone. You should know all important things and manage to do all the most important things.

Bill Gates showed how effectively the principle of *COORDINATION* could work. He earned billions of dollars with the help of his idea of **Windows**. *Gates* was not the only person who knew that it was necessary to achieve **coordination** with the computer. But he was the only one who knew what was to be done in particular to achieve **coordination**. Thanks to his “windows,” millions of people in the world learnt to communicate with the computer, and that communication became easy and pleasant. They learnt to “merge” with the computer into a common and coordinated system. It is this property of “windows” that ensured a huge popularity of a software product called Windows and a legal ground for *MONOPOLY!*

A democratic society tries to restrict monopoly. And those people who enjoy monopoly try to use a hundred per cent of it. And in order to do this they have to maintain pace. They have

to maintain the natural character of monopoly with the help of novelty of their product and its high quality! They have to invent constantly new improvements and inform consumers about new achievements and about corrected mistakes as well. It's not possible to win trust and respect without it.

A natural action, *ADMISSION OF AN ERROR*, and the correction of its consequences may also be called a method. Maybe for somebody it will become a cause to use this method more frequently. Some famous firms frequently use this method. They pay millions of dollars for this doubtful “pleasure” and get respect and trust in return.

Many people agree that to multiply planes and cars is more difficult than fizzy water and a software program. That's why it's not so difficult to guess that the most profitable product is the one which uses 3 principles at the same time:

<i>Coordination with the Consumer × Multiplication × Monopoly</i>

This is a formula of a successful business.

The Formula and the Paradox of Beauty

It was noticed long ago that beautiful airplanes fly well, beautiful cars run quickly. In other words, beautiful systems are effective systems.

What is the secret of their efficiencies and beauty?

The answer is surprisingly simple: it is a clever and felicitous combination of two contradictory features which taken together create the formula of beauty:

COMPLETION + MINIMUM

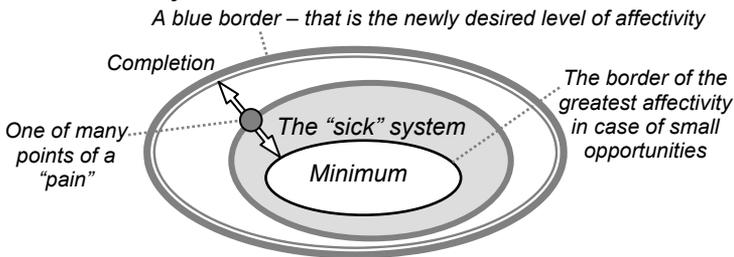
On the one hand, for the system to be vital it must be complete. It must have all the necessary elements and connections.

On the other hand, to be effective, the system must be minimized to the utmost. It should be deprived of extra parasitic chains and parts possessing surplus quality. Anything that is not used to achieve the desired goal or fulfill its main function should be considered redundant. The evaluation of the quality of the fulfillment of this function is the criterion of the efficiency.

Shall we say: “A new aim required new criteria of beauty?”

Yes, just like in sport. A sprinter and a weight lifter are assessed quite differently. The weight lifter requires a firm and stocky skeleton and a powerful system of muscles. The sprinter needs minimum weight and maximum speed. Their optimum borderline between completion and minimum is quite different.

If there is no clear-cut criterion of affectivity completion and minimum become rivals. Each has its own idea of the ideal and beauty:



Impeccably beautiful people, machines and things have nothing redundant, possess all the necessary elements and seem not to have any inside problems and contradictions. But that is only at first sight. A more careful examination and objective tests will reveal their problems and missing elements. It is just enough to higher the level of exactness, and all those beautiful systems will appear to be either unfinished or redundant and therefore not completely effective. In order to pass the new strict tests, they will have to be either minimized or completed. The process is endless!

The **paradox of beauty** lies in the fact that at the same time it exists, it does not exist. What seems to some as an ideal is rejected by others with contempt.

Beauty is obvious and convincing when the requirements are lower than they are. But when the requirements are higher, beauty is put to doubt. The feeling of beauty disappears.

The standard of beauty is possible only in case there is only one criterion of quality and only one combination of conditions. That is a very rare case, and if it does occur, it is

ditions. That is a very rare case, and if it does occur, it is only for a short time.

Tastes change. Therefore the criteria of beauty appear to be unstable. The limit of perfection will always remain a vague cloud in the cell of more or less justified restrictions.

Thus, all material objects and all ideas are not free of shortcomings. It is just enough to higher the threshold of assumption and the feeling of harmony disappears. Suffice it to turn up one’s nose and the world around appears to be full of sins. Now we see them.

It is not so bad if viewed from the outside. In order to eliminate imperfections and resolve problems it is necessary to see these imperfections and problems!

Those who can only find out shortcomings look like snobs. Those who immediately rush to eliminate each new problem look even worse.

Let’s try to combine these two wonderful features and make use of them.

- ***We find out and intensify the antagonisms.*** *For this purpose let us try to find a new way of assessing the quality and make it visible and persuasive.*
- ***We complete the system.*** *We try to solve the problem by means of new elements and ties which will eliminate the problems and antagonisms.*
- ***We minimize the system.*** *We get rid of redundant elements and ties, and as a result, we get the greatest effectiveness.*

“Why do I act differently?” the new successful businessman may ask the one who has “cast” his partner. Here is the essence of any affair: one notices only temptations leaving out of sight important links and ties. And those who have achieved success in completing and broadening the borders of their influence are not often ready to acknowledge the necessity to minimize their ambitions and their system. This becomes obvious only in case a very “modest” minimization becomes the

only possible way to keep the system afloat (or to preserve one's own life).

Ability to catch sight of structure of a beautiful system among chaos of isolated elements, webs of interests and casual connections is a gift of a destiny. To be able to build such a system and make it work is a piece of luck. To acknowledge the necessity to minimize the system long before the crisis is a rare talent. The iceberg is yet out of sight but an experienced captain already feels the danger and begins to operate.

Is everything OK now?

That is of no importance. If we want to reach the ideal, we shall again begin to look for imperfections.

You want to have examples? There are plenty of them. Take a sporting car. It is a full and minimum system. Maximum speed and minimum mass. But for the coming competitions, we'll begin to make a new model!

A talented piece of art is made of stone by a sculptor. Everything redundant is taken away. The thankful onlookers have a feeling of the Ideal. But time passes and tastes change. The image of the ideal also changes, and we see a new personification of it.

The anecdote is a short story with an acute and unexpected contradictory end. No redundancy! But a new and talented narrator may give his own wonderful variant!

A successful advert is an expressive short story of a product. No "excessive" information. Only a bright and appealing image!

A talented inventor is an unexpected short way to wonderful results. Nothing excessive!

A reorganized enterprise is the embodiment of a new idea among old elements. The unnecessary is thrown away, everything needed is built in!

The Range of Ideals

Each of us has his own ideals and his own way of solving problems. It is a matter of taste which of the strategies and ways of solution should be considered the best or even the only possible. If the image of the ideal solution is dissolved in different opinions and unclear task setting, the *IFR* (ideal final result) can be formulated in several ways. To find these forms is to open a range of problem solutions!

It is easy to see that this range lies between a clever trick giving a satisfactory decision without any radical changes in the system and its radical reconstruction in hope to find the ultimate solution for all time.

Is there any sense in this wide perspective of views? Is it worth finding plenty of variants of task setting and its solutions?

Many people tend to think that it is enough to draw “the correct line” with a steady iron hand, which will point to the only possible road to a dim goal. And to prevent people from running away and doing their own business, put up a barbed wire fence!

This mode of thinking can be found in any society. Fortunately, not everywhere such organizers can use their potential to the fullest.

The answer to the request “Could you make the task clearer?” is usually reduced to a trivial list of slogans and regulations which often turn into a mad maze. “Walk through it, and you will find the best solution.” This is what they say, keeping silent about how easy it is to come to a dead end. If you follow one regulation carefully, it often excludes any opportunities to fulfill some of the others. The growth of limitations by no means helps you to reach the goal. And if the purpose is not clear, the way to it becomes devoid of any sense. The vagueness of the purpose cannot be replaced by a whole lot of regulations and restrictions!

There will always be a Mr. Know-all who will only ask to make the goal clearer without long lists of regulations and

limitations. To foresee obstacles and to find means is the task of those who decide to tackle the problem. For them, the best way to set the task is to have a clear image of the wanted result. They either intuitively or quite consciously try to clear away the haze around the purpose and get rid of the blinders of “specifications” in the shape of “valuable” instructions and ready recipes. They need the whole range of ideas and means of their realization.

Of course they risk getting into their own original dead end or make a too expensive blunder, but they have a chance to find the most beautiful solution!

To find several definitions of the *IFR* is the best way to make your purpose clearer. And behind each of the definitions there is a different way to solve the problem.

If you are not satisfied with solution #1, find the definition of *IFR* #2. Maybe there is success in it. After all, the *IFR* is the shortest way of solving the problem. Its main idea.

Supposing we have found the “best” solution which appeals to everyone. Do not cherish any illusions. The happiness can be attributed to the fact that at the moment the faults of your plan are yet unseen. New contradictions will arise later. You will have to put them right, and the costs of this work will turn out to be unexpectedly high. This may happen because you have not found *IFR* #3 or #5 and a better solution they entailed. It is even more painful if a better solution was waved aside during the stage of discussing variants. Its drawbacks seemed infeasible, and its advantages were difficult to see.

Let us analyze a simple hypothetical example.

A yellow motor cart with an orange light is slowly moving along the road. It is drawing a broken dividing line. The lines of fresh paint are “guarded” by plastic cones. The cart travels 500 meters and then goes back to pick up the cones. The cones are here, again forwards!

The cart has to go three times the same way. Time and gas are wasted. But are there any other ways? What should be done not to go back for the cones and to continue the main work at the same time increasing its efficiency three-fold?

I suggest you choose from the “range of ideals” the one which appeals to you the most:

1. *An “ideal” instant paint which needs no “guards.”*
2. *“Ideal” cones which do not have to be collected.*
3. *An X-element which performs the function of the cones – keeps cars away from the fresh paint;*
4. *An “ideal” road which needs no lines.*

The first “ideal” calls for a new kind of paint or a substitute, for example, some marker scotch.

The second one evidently implies that the cones should be disposable. They should vanish into thin air in places where the paint dried!

The third “ideal” presupposes finding a cheap substitute for the cones which also vanishes as soon as the paint dries.

The fourth variant belongs to a high system level and ensues a different structure of the road itself, e.g. lines of lights inside the bitumen, similar to a take-off runway at an airport, or magnetic marks hidden below the surface of the road. They will be felt by a “clever” car which can keep to the needed traffic lane and show the position of “virtual” dividing lines to the driver.

Which variant shall we choose?

Of course the one you can implement, the one you have the necessary means for!

Were you a minister of motorways, a congressman or a Member of Parliament with a brilliant technical education and a passion for piloting your own jet plane, you would surely choose variant #4. “It is so progressive! And it will look great from above! And also we won’t have to spend money on making lines on the roads every month.”

But you are only the owner of a small company which makes up roads on a contract basis. You are interested only in the first three variants. You simply have no equipment for drilling the bitumen and putting lights or magnetic marks into pits. So, if you choose variant #4, it will be put into practice by someone else – and it will be the first nail in the coffin of your business.

Let us not speak about the bad things. There is still a lot to be done!

You have read in a newspaper advertisement that a company called *Superscotch* produces marker scotch which is perfectly visible under car lights and is “glued” to the surface under sunrays. The scotch turns out to be cheap, and you are tempted to substitute a reel of scotch for the pail of paint.

Bravo!

But you quickly realize that it is not as simple as it seemed. Freshly glued scotch can be washed off by rain. If it happens at night, it can disorient drivers and subject them to deadly risk!

If so, the solution is declined. Besides, an attractive representative of a paper recycling company has brought you some samples of one-time-use cones. A packet size of a pail contains 100 cones. The price is very low. No need to change your equipment. A marvelous solution!

You buy a truck of paper cones, and in a week, it turns out that the cones get blown away by the wind and frighten drivers. And what is much worse, you have to pick them up anyway. A farmer has launched a complaint against you, saying that you “pollute” his fields, and the department of environmental protection orders you to pick up your cones. Your assurances about the cones being free fertilizer have no effect. They hate the view of crumpled paper hats at the roadside.

You wanted to save money, but you face unexpected losses. The money is spent in vain, alas!

Some time has passed. You have gotten over the failure. You are full of energy again, and you are ready to solve the problem! To crown it all, someone stole your truck with the good old plastic cones yesterday. The road should be painted immediately, and you have to find a substitute for the cones. You need an idea!

And now you will surely guess that there should be a “guarding” figure or sign beside the line of fresh paint which vanishes as soon as the paint dries.

What can you use to make this sign?

Water, of course! It will evaporate together with the paint and the guarding sign will disappear!

Let us get down to business. The orange beacon is glowing. The cart is pouring fresh paint on the road. And at one side of it there is a used paint container filled up to one third with water. It is covered with pieces of thick foam plastic which hit the bitumen leaving an expressive "**NO**" in watery letters. We hope drivers will understand what that is supposed to mean.

Is everything OK? Not quite. We have solved the problem, but we have declined another promising solution. We waved aside the marker scotch. We were afraid that it might get unstuck by itself or with somebody's help. We faced a limit which could have been easily overcome. The scotch glued to the bitumen can be cut into many smaller pieces! Try and stick away each of them! Even if some of them are torn away by truck wheels or washed away with rain, there will be no danger of drivers suddenly disoriented. Small shiny pieces are not as effective as a single dividing line leading off the road.

So, which is the best solution? The water sign, the marker scotch, the row of light or magnetic marks under the bitumen?

Tell us where and when this task will have to be solved (or was solved), and we shall tell you which decision they will arrive (or arrived) at. After all, nothing can be more natural than choosing the reachable ideal!

The best variant should not necessarily be the simplest or the cheapest. It can be the one which corresponds to other systems developing simultaneously. Magnetic and light marks will be needed for navigational and "automatic pilot" systems in cars. That is why the "strange" variant #4 should not be seen as a poor joke. You do not have to use it at this very moment, but it would be good if you kept it in mind. The future will probably belong to this very solution.

The Search for a Solution as the Search for a Sign

If you are a radio engineer, you know that there is a problem of finding signals among noise.

If you are a mining engineer, you are aware of the problems of ore concentration.

If you are a detective, you have had to look for people and their things.

From time to time every one of us has to look for objects with needed properties among a large quantity of others. To speak in images, we are looking for a needle in a haystack. How can we make this difficult job easy and efficient?

To scan the surrounding area with all determination – this is the first thing coming to our mind. The second, more mature idea is to find and use one distinctive sign which can always be found. Otherwise what would be the difference between one object and another?

This sign should be found, made significant, material and convenient to use. You should make it conspicuous!

If you know the properties of the wanted object, it is easy to find a solution. The key is already in our hands.

The usual procedure of testing the viability of seeds takes up several days. The samples are put into a wet medium; they sprout after some time, and their germinating estimate in percentage.

But an exceptional sign of pine seeds is suddenly discovered. Living seeds appear blue in ultraviolet rays, and dead ones – yellow. Now we can test our seeds almost instantly – due to the new sign which is now known to us.

Walking out into the street after a hard day's work you start remembering where you could have left your car today. You could have used one of the three parking places in the area. Then you remember and face rows of cars. Where is mine? Where did I leave it? You lose your patience and press the button on your car keys. Your car gives a sound and flashes its lights. What a relief. It is here. How could I have failed to see it at once? Color, shape and size are good signs,

but it is difficult to find one object among a multitude similar objects. You have to use additional signs – sound and light.

You go in for mountaineering or mountain skiing. You have come to the mountains where there is a danger of avalanches. You are offered to wear a small brooch – a radio beacon on your neck or collar. If you are caught in snow, the rescue team will find you with the help of the signal of this tiny mechanism. Its signal is your artificial sign which helps to find you in snow and stones. This is your chance to be saved.

If you are out of luck and have lost your beacon, do not worry. A good old Saint Bernard will find you with the help of another sign. Your smell! If you are lucky.

Of course we know a lot of signs which can be easily found. But sometimes we cannot find a suitable one. The wanted object remains unfound.

Do not lose hope. If you cannot use **a natural sign**, you can use **an artificial one**.

So, we have two principles of solving the problem of finding:

- *If there is a sign let us find a way;*
- *If there is a way, let us create a sign.*

Once I was asked how rare books from the National Library could be protected from theft. I had the answer almost ready. To find a suitable “sign-way” pair. To attach a cheap device to each rare or expensive book which creates a **sign** and to use a simple **way** of using this sign. I suggested that they should hide a piezoelectric plate with some electronic components inside the spine of the book. A tiny detector receiver on the surface of the plate can make it give away sounds! If someone tries to take a book with him without permission, the control radio signal near the exit will make the plate beep! The beep will point at the thief and the place where the book is hidden.

This device is like the passive radio beacon of mountaineers, and the task has been solved many times in connection

with shoplifting. Nevertheless, this example demonstrates that there can be more practical applications of this idea.

There is no information without its material carrier. There is no machine without its material realization. There is no way of finding a sign without the sign.

A happy “sign-way” pair has to be looked for. And do not lose hope if you catch just one of the key chains at one time. More effort and you will find its pair. Each sign has its best way of finding, and a good way can be supplied with a suitable sign!

The Principle of Universality

I was quite a young radio engineer when I was charged with making a plane radar work right at the university lab. I had to build a special generator to power it. Six powerful transistors of the generator did most of the work and heated greatly. So as not to fail due to overheating, I put them into six glass jars with water. The temperature of each jar and the size of bubbles of the surface of the transistors allowed to assess the temperature regime of each one and to make them work efficiently and harmoniously. Fifteen years later, this generator was still operational!

I would often buy many parts and materials for my machines in a do-it-yourself store and use tin from tin cans. When I was 13, I had some valuable experience at aviamodel classes. There we used rubber uterine rings from the chemist’s as tires for the chassis of our models and castor oil as an addition to the fuel in our micro-engines.

Today at my university lab, we use condoms as covers of temperature sensors during their calibration in the thermostat, and aviamodel rubber ribbon for suspending probes of our measuring devices conveniently.

<p>The Principle of Universality:</p>
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<p><i>Every object has plenty of unexpected applications.</i></p>

If you do not bind objects to their primary function, you can easily find many useful properties in them. That is why do not be afraid of using old tin cans and other funny things.

I have seen many times that at a chemist's you can buy half the parts needed to repair a car. And if one day you find that you're local pharmacy has started selling automobile spare parts, you should bear in mind that the pharmacist is a highly cultural person with a developed system thinking. He has equal compassion for people and for machines. He may be secretly hoping to get a tax exemption when machines become main.

A Free Resource

More than half of performed measurements concern temperature. And if specialists from various plants come to my laboratory at the University it is more often than not that they come for instruments to measure the temperature of baking bread, drying vegetables or melted plastic, liquid steel at a distance of 20 meters or a drop of melted tungsten inside a vacuum chamber.

Two gloomy guys of the local leather plant once asked us to find a means of measuring the temperature of rotating barrels for the final drying and smoothing of leather. Japanese distance optical data units were long out of use. To buy new ones is too expensive, and they were ready to order 60 data units at the price of no more than \$50 per unit.

To place the data unit inside the barrel is almost impossible. To use an infrared distance data unit is too expensive. Besides, the open surface of the barrel, the temperature of which was to be measured, shines like a mirror. The infrared data unit will show the temperature radiation not only of the barrel, but also the radiation of what is reflected by its smooth surface. The data unit may also catch the hot light of the lamps and even the sun beams. Those are serious hindrances for a temperature stabilizing system.

Contact data units are a hundred times cheaper, but it is impossible to fix them on the moving surface. Thus, the data unit **must be on the surface and it must not be there!**

The data unit must slide at the edge of the barrel, but then it must be flexible enough and firm so as not to tear pieces of leather.

Firm also implies massive, therefore it will measure the temperature of both the barrel and its own base. What can be done?

With these thoughts in my head, I went to the plant. When I got over the shock caused by the smell of raw leather, I decided to imagine myself a data unit and look at the problem from its point of view.

Having climbed up the platform the size of a combine harvester, I was looking at the huge shining barrel warming myself in the flood of the warm air issuing from its surface. The hot air at the surface of the barrel is the **free resource** which can be made use of to decide the problem.

Thus:

Variation 1: *To make use of a light contact data unit sliding along the edge of the barrel.*

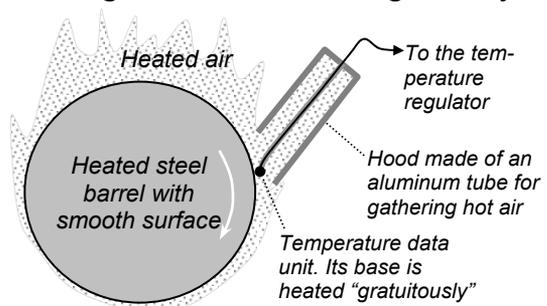
Variation 2: *To gather the hot air from the very surface under a hood and measure its temperature.*

These two variants are not simply solutions and probably not the best ones, but they were the two extreme points of the range of solutions I saw then.

It was worth while looking for a better solution guided by the criterion: *exactness/price*.

Well, we didn't philosophize long, we tried to combine the advantages of both variants. We fixed the thermocouple on a thin

flexible plate made of glass fiber bent in the shape of a ski.



The sensible part of the thermocouple was fixed to the sharp end of the “ski” and it almost touched the surface of the barrel. The whole “ski” was warmed up by the hot air collected under the hood; it did not interfere with the pieces of leather which could touch it without being torn.

Is this solution the best?

Yes! And only because the customer was satisfied!

We did not build a computer model and calculate the best construction which would take a lot more money than they had promised us. We have used a **free resource** and finished up the system by means of available elements and got the required quality by simple means. The experimental model was tested and then a whole lot was made. It took us 5 days to complete the work. Five years passed. There were no complaints.

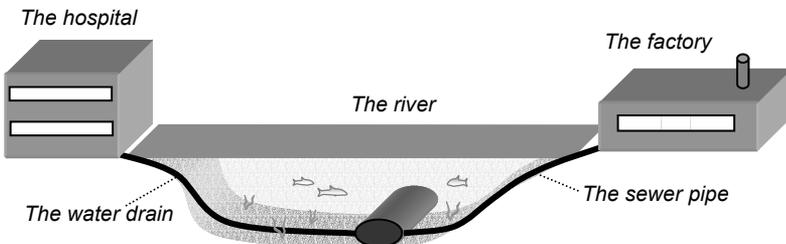
But here is a really serious problem.

Poor country! The river is flowing across the city. The sewage of dwelling houses and plants go straight into the river.

What can be done? How is it possible to protect the river without stopping the life of the city?

A **free resource** was also required here: a place where without any damage of the surrounding environment all the waste of enterprises and houses can be collected.

The bottom of the river is the very place for the collector. It is only necessary to isolate the flow of mud from the river water. It is possible to place a concrete tube or a soft plastic hose. Its sides could be profitably sold to plants and presented to hospitals! Outside the city, the tube with sewage will get out of the river and find itself in the sewage disposal.



But this is only an idea. Probably it is already realized somewhere. Probably it is not likely to be realized in the swift mountain river. But then the edge of the bank of the river can become a suitable place for the tube. It has a natural slope, and it will not cost much to arrange the tube there.

Any idea, just like medicine, can be useful for some, but fruitless for others.

But let's return to our problems. Was it possible to solve them by some other means?

The **Principle of Coordination** could prompt such a solution.

For cleaning the river water, the question can be worded like this: how is it possible to co-ordinate the dirty sewage with the clean water flow?

The answer was short and simple – **isolate** them.

For the measuring of the temperature, it is possible to put the question of how to **coordinate** the metallic data unit with the thin flow of hot air at the barrel surface.

The answer is like this – warm up the data unit with the “gratuitous” hot air gathered under the hood.

The hood becomes useless if the tiny data unit is not cooled by its base. There will be no necessity to warm the base!

A dangerous tube with dirt at the bottom of the river is an obvious threat of ecological accident. Such a tube will be unnecessary if the sewage is cleaned at places where it appears.

The range of possible solutions mainly depends on the experience and imagination of those who want to solve them. Probably, you will open new variants of solving those two problems. Because you have your own unique experience and your own palette of available means.

The knowledge and means of each of us is limited. Therefore we are obliged to use solutions we can find and realize.

It sounds funny, but here again the **principle of compensation** is at work. The shortage of material means is partly compensated by inventiveness.

Christmas Fir-Tree of My Grandfather

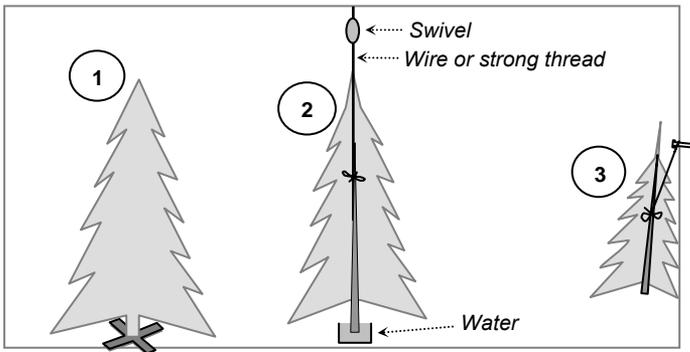
To install a fir-tree for Christmas is an ancient tradition. But do you know that in order “*TO INSTALL*” it there are, at least, three different methods possible.

To discover these methods, it is enough to find an appropriate substitution of the words “to install.”

Many years ago my grandfather used successfully an inventive method “*ON THE CONTRARY.*” In the end of 1936, the interdiction of Bolshevics on Christmas fir-trees was removed, and grandfather Trofim undertook to invent how to strengthen a fir-tree to please the grandsons and junior children who were almost the same age. He did not begin to install the fir-tree on a clumsy wooden cross, but suspended it to a ceiling on a small swivel. The large, neat fir-tree rotated freely and brought the little children to delight.

I have tried it too, and I liked it very much. My fir-tree was attached to the ceiling with the help of parts of fishing tackle on which I caught pikes in summer. The method appeared to be convenient and did not require a lot of time and effort. And the main award was the children's delight!

But fir-trees are different, sometimes symmetrical and sometimes not. The side with poorly developed branches makes you upset. It is better to lean it against the wall. And if such a fir-tree is not too big, it is better to hang it up on a wall. As a picture!



It is enough to get rid of the charms and inertia of the words “to install,” and we have an opportunity to suspend, to attach, to paste...

Spiders detected it long ago: it is not necessary to block nails in order to fix their prey. The universal glue decides these problems.

The sticky band invented by people, can hold not only photos or pictures. You can try to use it on the fir-tree too.

So, we take the fir-tree at X-point, place it in at Y-position, attach it to Z-support and decorate it in J-style. We are free in our choice of variant from space (X, Y, Z, J), which now is in our imagination. We “have won” it from our own inert thinking.

You will be remembered for a long time if people see how unusual it is placed and decorated. Even if it is not a fir-tree at all, but, for example, a cactus. The fact is that it is also green and thorny!

And how about your furniture? Is it still in its usual place? Is it still standing?

A New View on Old Familiar Things

Two separate faucets for cold and hot water – that's in an old English joke. Since we are used to wastefully regard time, water and other resources, it never occurs to us to mix the water in a corked washbowl. It is not tricky restrictions or persuasive reasoning that makes us economize water, but a mere lack of a mixer.

Once again washing my hands after a surgical interference with the body of my old car, I notice again that the faucet of my wash basin is not very friendly to me. The jet of water beats against my knees, chest and stomach. That can't be endured any longer. It is necessary to invent a new faucet.

Let the jet come on the wrists and go down the hands to the tips of the fingers smoothly washing the palms!

If you are a supporter of the principle of adaptation for the realization of this idea, you'll have to turn your hands in an unusual way or stand at the other side of the washbowl.

But if you are not tolerant, you'll have to radically change the whole construction: to place the faucet at the wrist and direct the jet along the palm to the tip of the fingers, and not into the sleeve as is usually the case.

How many jets do we need? One or two? Because we have two hands, there can be two children. It is sometimes difficult for them to share the washbowl with one jet.

If we make two faucets for one mixer and make the holders of the faucets soft and flexible, we'll avoid the danger of trauma. The shape of a fish hook for a metal faucet is evident threat. But how can we wash the face if two jets are coming out from the front of the washbowl? How can we take handfuls of water without touching the fish hook faucet?

Do we need these hooks at all? We already know that an ideal faucet is the one which does not exist. It is a jet without a faucet. Therefore, let the jet come simply out of slightly raised edges of the washbowl. If so, it will be convenient and safe to wash the hands and face from a washbowl with a convenient jet without any hook faucets.

Thus, the friction of the faucet is preserved and the faucet, more exactly part of it, has disappeared. The modified washbowl has taken on itself its functions. This unusual construction will defend your suit from drops of water. The idea of doing everything the other way round has given us as a present these new wonderful properties – to place the jet of water at the front edge of the washbowl.

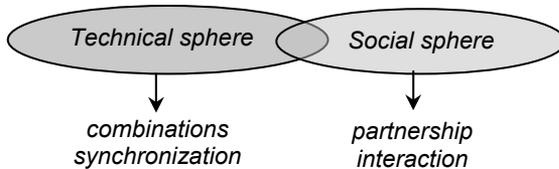
But we should not forget about the idea of a possible soft silicone faucet. A simple means – change of material – will make the hook-like faucet safe and less noisy. All this taken together illustrates a series of inventing means: **absorption – confluence – combination of function – change of material**. Besides, we have seen how an element of a system takes upon itself the function of a neighboring element. In engineering, we often come across such a phenomenon.

- *The tire of a car has become hermetic and taken the function of the inner tube. It holds the air by itself.*
- *The rigid body of a car does not need a bearing carriage. It is supported by the wheel axes.*
- *The self threading screw by itself threads the carving while being screwed up.*

An experienced constructor looking at the drawing suddenly notices that this or that part can be thrown out. It will be replaced by a neighboring, altered part.

In the social sphere, the manager comes to the conclusion that he no longer needs Michel. Peter can fulfill his work. It is a sad picture but such are the laws of life.

Technical and social spheres are full of such examples and the analogy between them is obvious.



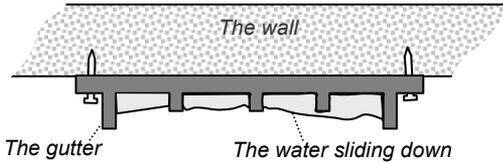
Now, let's go down to earth from the high sphere of philosophy together with the rain or snow. Because in our parts we do have snow, and it covers the roofs of the houses. Now comes a thaw. The snow is melting, but the water does not come down the drain-pipe. There is ice in the pipe. What can be done? Shall we warm the pipe or place it inside the house?

Let's try to find solutions less expensive and more radical. For this purpose it is just necessary to look deeper into the drainpipe. I mean to see how the water flows down the pipe. It just slides down along the wall of the pipe, and if the wall is cold, it freezes and turns to ice. This is the way a congestion is formed.

But is it necessary at all to hide rain water inside a metallic pipe?

Of course, we'll do it in a different way. We'll fix vertically on the wall of the house not the whole pipe, but part of it – the gutter. And even better – an open gutter with a flat bottom and

longitudinal ribs. An open tape gutter made of plastic is easy to fix to the wall at the protruding part of the edge.



The longitudinal rib helps make the flow even and smooth.

The smart producers will learn about this idea and heaps of flat gutters will soon appear in household shops. You'll have a chance to choose the ones appealing to your taste.

Now what is left is to wait till this idea catches the eye of the smart producers of plastic basins or electric cables. For producing an “endless” gutter tape, one can use the same lathe as for the production of the insulating thick cable. What is left is to install a new draw plate and not to forget to take out the wire. For the cable that is necessary but not obligatory for the gutter.

But just stop! An insulating wire combined with the gutter will pass for a lightning conductor. Besides, the wire can give the gutter the necessity curve when passing the edge of the roof to the wall and then to the lane or the sewer.

For sure, you'll surprise your neighbors by the unusual and exquisite decoration of the facade of your house and the local architects will include tape gutters in their projects of new houses.

The main feature of a cable and the property of a spring was transferred to the gutter, and we have received a new product! Long live the rain and the snow!

Let's shut the small window. Snow flakes and water drops fly into the room, and that is not very pleasant. But we need fresh air. The small window must be open for fresh air and must be closed to preserve the heat and comfort.

Glass lets light pass, but it does not let pass fresh air. So we must have glass, and we must not have it. An X-element instead of glass must let fresh air and light pass but not allow

water drops, snow flakes, draught and, of course, flies and mosquitoes enter the room.

There is a simple solution of this problem – it is a thin, dense and transparent cloth.

About 10 years ago I installed a wooden frame with parachute silk on it in the aperture of the window in my sleeping room. I didn't feel any draughts but fresh air passes easily! The “silk” window combined several functions: it protects from unpleasant inconveniences and supplies heat transfer of the head flows of gas molecules. In winter inside the cloth a pelticle of water is formed. That is steams condense. It restricts the flow of cold air on a frosty day. The window regulates itself.

The problem of dust is an old one. But the more powerful and expensive your vacuum cleaner, the heavier it is, and it takes greater space which is better to give to the dog.

Let's remember again: ***an ideal machine is the one that doesn't exist... the dust must find the trap by itself.***

If we agree that the vacuum cleaner has the right to exist, then it must be radically changed. There is no necessity to drag the heavy and noisy vacuum cleaner about the whole house. Let's hide it in the cellar and have each room put on to the vacuum cleaner by means of vacuum tubes. We'll have to use only the necessary working part – a brush with a hose. Our vacuum cleaner will be switched on as soon as it finds out that the working part is connected with the vacuum tube.

Thus, if we divide the vacuum cleaner into two parts, it will be possible to get rid of the noise and the heavy weight preserving its main function! But that will be at the “cost” of piping installations all over the house. You may do it or not. That's a matter of taste.

What is the next step in the struggle against dust?

To have a vacuum cleaner at the threshold of each house, at each door, at each window? Because we can simply not allow the dust to enter our house.

A sunbeam in a darkened room will show us the result of our efforts in this hopeless struggle. We have dusted the floor and put a barrier for its way into the house, but the books, the

blankets, the clothes, the upholstering – they are all constant sources of dust. The cloth fibers rubbing against each other mince the dirt getting on the clothes. This is the way new particles of dust are born. That is why it is necessary to air the room or clean the air bringing it to a pleasant condition, controlling the temperature and humidity.

But if you don't want to spend money on conditioners for each room, it is possible to use ventilators. You will just drive the jet of air into a moist gauze net. Let it catch the dust!

But a ventilator is making much noise and not always favors comfort. The mere movement of a man about the room, the quick movements of his feet and the flows of warm air from his body and lighting lamps bring the air into motion. That is why it is in the most hidden places on the floor and cupboards where fine dust is generally accumulated. It gathers at places where it is not disturbed by anybody.

It is in those places where traps should be installed.

I smeared a sheet of light paper with sugar syrup and put it under the bed. In two weeks the white sheet of paper turned into a grey “fur” mat.

This experiment seems funny and useless only at first sight. The inside cavity of many optical instruments are in need of this invention. Everyone will agree that the dust penetrating inside an optical instrument must not accumulate on the lenses. It must be caught by sticky traps!

Now, it was enough for us to wash our hands, and we found out that the washbowl and faucet could have quite a different construction. One element of the “system” can fulfill the functions of the neighboring element. Here the Sad Law of Life is in action together with a series of inventive means: **absorption – confluence – combination of function.**

It was quite enough for us to have a look inside the drain-pipe, and here are the results:

- *got rid of the excess of weight and the cost of the drain-pipe;*
- *got rid forever of the ice congestion;*
- *found a new element for the decoration of our house;*
- *made the drain-pipe a lightning conductor;*

- *simplified the mounting of the drainpipe;*
- *found new work for the old cable lather and made their owners happier.*

It may happen that manufactures of plastic tubes will begin to install TV and telephone cables into the drainpipes or even electric feeders.

We'll even get slightly warmed water.

We have found out that the property of an electric cable is useful for the drainpipe and the powerful electric cable will not be hurt by the cold water stream. Now we know exactly that the property of one object can be useful for another object. And these useful properties can be transferred to places where they are needed. Now, in jest or seriously, we'll make use of the transfer principle.

It is a universal method indeed. Many people employ it: poets to find a new image and applicants for presidency find it useful for abusing each other.

In the theory of solving inventing problems, it is called **the method of focal objects**. It is a close relative of the **metaphor**. The difference between them is in the way they are used: the metaphor depicts and tells whereas the focal method creates!

TRANSFER OF PROPERTIES, COMBINATION OF FUNCTION, AND EXCHANGE OF PROPERTIES are simple means, but they can in a wonderful way change the properties of things well known to us since childhood and make them more perfect. Changes undergo things that seem to us invented forever!

We have found out that a piece of thin and tight cloth can be at the same time a device for heat and gas transfer with automatic regulation.

For the improvement of the vacuum cleaner, we have made use of the method of **extraction** and here are the results:

- *got rid of the noise;*
- *stopped carrying the heavy body of the vacuum cleaner;*

- *during its work stopped breathing abominable warm air getting out of the vacuum cleaner, air saturated with fine dust, deadly for asthmatics.*

Somewhere in old buildings there are tubes of pneumatic mail. Wonderful! They can be used for the system of centralized pumping the dust.

We have looked under the bed and as a result found a way of preserving the inner surface of a camera, binocular and other optical instruments.

I assure you that among the things we use every day there is much hidden for discovery and even invention.

A Sight Prosthesis for a Fighter Pilot

Blind people are very sensitive to tactile feeling. They touch everything. They cannot see and in this way partially compensate the loss of sight.

The greatest and heaviest organ of human body is his skin. It is full of tactile receptors and in this way reminds us of the retina. With it one can "see" the picture of the world surrounding us! For this purpose we'll have to make a tactile mold by means of many electric pins like a yogi made a mat of nails and send to it a television signal. The mold will become a live engraving, and we'll have to "look" at it, say, with the back. But we'll also direct the camera backwards. If you are a fighter pilot, you've got a third eye which will noticeably enlarge the horizon and can even save your life. The things the camera sees, you'll "see" with your back!

And what if not only with your back? We have at our disposal the finger tips, the palms and a dozen of other more or less suitable places. And each one requires its own instrument.

Precisely in this way one can find a score of inventions, looking for a place of his body where the idea can be applied.

But we'll try to act in a little bit different way. We want to get not a score but 1000 variants. How can it be done?

Any technical system is characterized by a set of indications and goals. If you are interested in the solution of a defi-

nite problem, you'll begin with the goal. But if you are interested in getting new knowledge, the first place will be occupied by the indications.

We'll begin with indications.

The first sign will be the place of application of the mold. It can be: *finger tips, palm, wrist, lips, tongue, cheek or both cheeks (stereo), forehead, neck, chest, stomach, back, shoulder, feet, buttock...*

Here we can also add a score of other more or less intimate places including the helixes and the shaven back of the head. But it should be acknowledged that after a careful inspection, the list will be radically shortened. We'll most likely learn that the most tangible tactile instrument is the tongue but it is very doubtful that the pilot will agree to keep in his mouth the indicator of the radar. But now we consciously reject any restriction. We need all possibilities and all tactile sensors of our body!

Of course, we don't guarantee a perfect solution, but we'll try to show that the best chance isn't lost.

For the beginning let's make some experiments with a ready tactile mold, namely the head of the mold printer. But it is better not to touch its needles with the tongue!

The second sign will be variants of signals, which we are able to feel:

- *television picture (an ordinary TV signal);*
- *infrared camera signal;*
- *picture of the instrument for night vision;*
- *picture of the ultrasonic scanner;*
- *visualization of other physical processes;*
- *picture synthesized by the computer.*

Physicists know that things invisible in a fog or thick smoke are well seen in infrared rays. Smoke and human skin becomes transparent in infrared rays. But if we can't get any information with the pilot's eyes or the diagnostician let it be done by tactile senses. Let the doctor feel by his palm hypo-

dermic pathologies using an infrared instrument which he will hold in his hand.

The scheme of such a system the size of an orange will be simple:

**Appearance of the surface in infra-red rays → Infra-red camera
→ Tactile mould → Doctor's palm**

Feeling an unusual relief on an absolutely smooth surface, the doctor will find the pathology. Is there anything in common between the fighter pilot and the watchman sleeping on guard? A tactile mold is attached to the back of the pilot, and he feels the panorama picture of the space which does not find itself in his field of vision! The watchman sleeps on a tactile mattress on which only signals of any change of the picture from the guarding TV camera fall.

If a suspicious object appears in the field of vision of one of the cameras, the watchman will feel it by his side. It is not necessary for him to sit and look intensely into a dozen monitors.

A pilot sitting at a tactile mattress will find at night shipwrecked sailors by the slight light or warm radiation and save their lives!

A fireman will see the man still alive behind a thick wall of smoke with his forehead supplied with an infrared tactile instrument, and will save the man's life!

The main element of any patent invention is **the goal**. And it is not by chance. A clear goal is the essence of any problem. For its beautiful solution it is necessary to have a “Swedish board” of all possible resources capable of helping the solution. **The goal will find the necessary means** itself guided by the useful signs.

Anyone who has dealt with patent laws knows that the goal is the main characteristic of an invention. They are convinced that the patent protects not the idea with its rich potential but the means of achieving a concrete goal. At best, the idea can be hidden by an umbrella of a few scores of patents. However, for an experienced inventor or an expert this umbrella is no more than a fig leaf.

On the other hand, one and the same palette of means can be useful for the achievement of many various goals. Theoreticians of inventive creativity seldom pay attention to these circumstances, but it is precisely here where the possibility to radically increase the number of inventions is hidden.

Let's try to enumerate the main perspectives and goals where the idea of tactile sight can be useful:

Orientation:

- *a sight prosthesis;*
- *a third eye for the pilot;*
- *a tactile radar;*
- *instruments for orientation for firemen in a thick smoke;*
- *instruments for orientation for bus drivers in a thick fog.*

Diagnostic in Medicine:

- *diagnosis in the circulation of the blood;*
- *search of hypodermic pathology with the help of the thermal relief.*

Diagnostics in technique:

- *search of defects of materials and constructions by the unevenness of physical fields;*
- *search of defects by means of heat apportionment;*
- *search of gas escape.*

Notification and Guard:

- *tactile signaling by the principle: one guard data unit – one tactile point;*
- *instruments notifying a fire and other dangers for the sleeping and the deaf;*
- *hidden tactile signaling.*

Management of Technical Systems:

- *organs of control (levers, buttons, pedals) with a tactile feed back;*
- *tactile mold indicators of the position of working parts of the machine.*

Instruments of Production and Measuring Instruments:

- *a series of mechanical instruments with tactile indicator of force;*
- *testers with tactile indicator.*

Teaching:

- *instrument for teaching blind and deaf and dumb;*
- *instrument for hidden measuring of the pupil.*

Medical Treatment:

- *appliance for massage controlled by a computer, music, moving pictures, hands or the body of the masseur;*
- *pulsating and changing its shape tablets for stimulating the alimentary canal.*

Entertainment:

- *tactile attractions;*
- *tactile sex-toys...*

Search of a Goal:

- *infrared tactile finders of people during rescue operations;*
- *tactile gun sights (aiming devices).*

Means of Communication:

- *mobile telephones with a tactile signal of informing;*
- *soundless tactile radio receivers and players for the deaf;*
- *paggers for the blind with a tactile output (Braille symbols).*

Thus, every chosen direction gives several cores of inventions. For example, a tool with a tactile indicator of force is not only a wrench or screw driver. It can be also a sensible surgical scalpel giving information of the property of the tissue which it cuts.

The list of signs and problems can be continued. The more professions and directions of human activity and properties and signs of things we remember, the more combinations we receive. If this work is done in detail, the number of perspectives and variants will be tremendous. This is precisely the way the tree of inventions is growing out of one fruitful idea or discovery. The branches of the tree-perspectives of the development of the idea are decorated with costly fruit-inventions.

And now that the tree is grown in the shape of an intricate scheme on a large sheet of paper (or in your imagination), an exquisite taste and a bit of haughtiness will be required for the choice of the most viable idea.

The real requirements of people will give us the possibility for a correct orientation in the abundance of variants, and we'll find the most attractive and valuable inventions, capable of bringing the greatest benefit and success.

We may forget the naive and funny variants. What is important is not to love the best, but the one which can give the most valuable results.

Big ideas are better seen on the background of small ones. But the latter also needs our intuition, imagination and enterprise.

To Straddle the White Cloud

As a rule, the oversystem puts before us the problem, and we find means to solve it in the realm of our knowledge, possibilities and rights. By and by we enlarge our potential and approach the cherished self-sufficiency. Now our new possibilities require application. They are needed to realize our own goal!

A cloud of the goal on the background of a blue sky is a typical picture for those who can dream. Do you want to realize your dream? Then you'll have to find an image of the final result, such that can be turned into reality by means of available means!

It is worth while acknowledging that most of the valuable inventions are born due to the discovery of new possibilities. And new goals grow out from the seeds of knowledge on the soil of real achievements. There is a new possibility – a new goal is sure to appear!

Thus, we have:

Two system principles to get a new product:

- *GOAL – search for means;*
- *New means and possibilities – Search for goal.*

Where shall we start our building? From the top or from the bottom?

If you see your dream in detail it means you have straddled it! It is only necessary to carefully observe from above the surroundings and find necessary means for building an “open-

worked construction in the direction of the beloved oneself," straddling the cloud of your dream!

If there is no dream, you'll have to start from the bottom building a heavy "universal" pyramid! "This is necessary," you'll be told, "A firm foundation is the basis of any reliable affair. If you sit on a firm foundation it is quite possible to lasso a big goal!"

But here is a problem: the strength and enthusiasm for dragging over boulders are at an end, and the sources of faith are exhausted. Willy-nilly you'll have to look for something more effective and easier. Indeed, is it worth building a stone tower where an aluminum pole can do?

A Short Excursion into Tomorrow

Most technically "advanced" parents dream of children born with an electric sectional split on the back of the head. The upbringing and teaching of such children consist of a banal loading of their memory. The dark corners of the souls will be possible to be looked through at the computer screen, and then they'll make the necessary corrections. The gaps of knowledge and lack of information will be easily filled up with the "refined" experience of the grown-ups. As a result, we'll get young exactly programmed old men!

Is it a complete idyll or a nightmare of the future? That is a matter of taste. Some will accept such a possibility as a present, others will turn with horror. But if to be serious, something of the beautiful or horrible future can be already built today.

Here is an example: 15 in a 1000 are born deaf or lose hearing in childhood. Their organs of speech are in full order, but they can't learn to speak distinctly and keep up speech skills and habits because they are deprived of the possibility to compare their own speech with the speech of others. If they are given the possibility to hear, they will learn to speak!

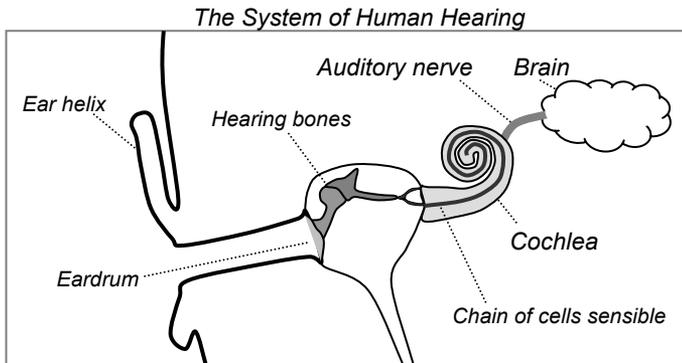
For most of them, it is only a dream. The so called inner ear, the cochlea, does not function. So the increase of sound of

ordinary hearing aids will not do. They don't perceive an amplified sound. There is nothing to perceive with.

Attempts to overcome these shortcomings have brought to the creation of an electric prosthetic appliance with implanted electrodes. But it wasn't widely used.

The reason of failure lies in the fact that a human brain and nerve ends are incapable of perceiving directly vibrations of sound frequency. A transformer is required to fulfill the functions of the cochlea.

The cochlea is the main link of the whole system. It analyzes the sound spectrum. For each frequency, there is a separate group of sensitive hair cells situated like a chain along the tunnel of the **cochlea**. A bundle of nerve fibers issuing from the cochlea transmits the sound spectrum to the brain.



To restore hearing, it is necessary to model the functions of **the cochlea**. To build its functional equivalents.

People learned to build spectrum analyzers long ago. The picture on the screen of such an instrument gives the visual shape of the spectrum, but for the deaf it is no good. There are instruments capable of converting a text into speech and vice versa, but I have never heard that a man looking at the screen of a spectrum analyzer could perceive the picture in the same way as a sound. And even if it is possible to learn to do it will hardly help the man who is watching TV or driving a car. The sight is engaged. A new informational channel is required!

Is it the sense of smell? A bouquet of aroma instead of sounds?

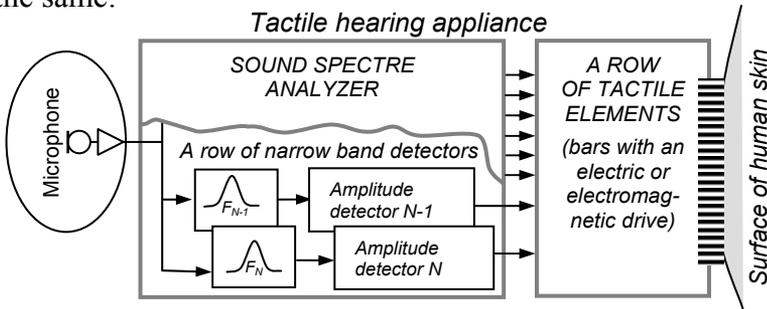
The sense of touch? Tactile sensation instead of sounds?

We know already that the latter suits better. The surface of the skin is strewn with tactile receptors which are sometimes “idle.” They may be offered the work done by the cells of a healthy cochlea. What is left is to find a means to **coordinate** the sound with the skin tactile receptors. For this purpose, it is necessary to construct an instrument capable of transforming the sound spectrum into space tactile sensation. The sounds can be transformed into tactile shapes in the way of a “live” relief line which can be situated round the neck or the wrists, or along the shoulders. For each part of the sound spectrum, there is a special section of the skin surface – just like in the cochlea!

The algorithm of transformation will consists only of a few links:

Sound → Sound Spectrum → Tactile Appliance → Skin Surface → Brain

The structure scheme of such an instrument looks almost the same:



Each sound will be reflected in the shape of a characteristic tactile image. Some time will be required to learn to use this instrument. One will have to remember the feeling of each phoneme and quickly recognize it in the flow of speech, just as we learn to recognize words listening to foreign speech.

Many deaf and dumb can understand speech by following the movements of the lips. Therefore for them, it will not be

very difficult to understand the tactile images of sounds “read” from the surface of their own skin.

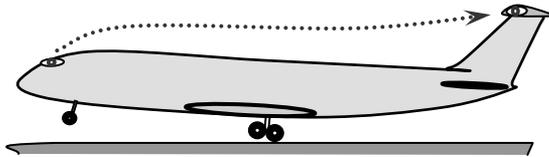
We have discovered for ourselves the structure of the hearing system, found out the likeness of the **cochlea** and the **skin** and the way of transforming sounds into tactile sensations. That means that we can restore the system of human hearing making use of the natural properties of the skin and available technical means.

There is nothing surprising in all that. We have just made use of the method of building a system according to the principle which nature invented a million years ago! Our problem was just to understand the main principle of the action of this system.

The Point of View and the Starting-point

Watching the take off of a passenger liner, I often sympathize with the pilot who is controlling it. He doesn't see how beautiful a plane is at its take off. But I am more worried about the landing. It is difficult for the pilot to evaluate the situation and fix the speed of the plane relative to the land without looking at the dashboard. He simply does not have the time to look at it before touching the land. The danger of gross mistakes increases tenfold!

I suggest moving the cockpit from the fore part of the fuselage to the top of the fin. The captain must see his ship!



Sitting at the top of the fin, the pilot can see the position of the plane relevant to the land. It will be easy for him to fix the speed and position relative to the landing strip without instruments. He will splendidly see the control surface of the wings and even part of the undercarriage. Much of what he needs for

the control will be straight before him. He will be able to control one of the most important moments of landing – touching the surface. The dangerous strikes on the concrete frightening the passengers will remain in the past.

The pilots will have the possibility to not just rely on the instruments and intuition, but see and control the approach and touching. Smoothness and accuracy are achieved easier.

The hatch for loading a huge transport plane is a great problem. To place it under the tail means losing much of the aerodynamic qualities of the plane. To place it in the fore means to come into conflict with the cockpit. It will be necessary to raise the cockpit and again to lose the aerodynamic properties. Therefore, the idea of placing the pilots at the top of the fin of a transport plane seems not so senseless. Besides, it will be possible to realize the long cherished idea of a detached capsule.

The tail “plumage” of a gigantic plane can in a fraction of a minute turn into a little plane. There is no exotic character here! Just the desire to increase the time of exploitation of a gigantic plane without any risk for the pilots.

Nobody is surprised by the fact that the captain’s bridge at many ships is situated nearer to the stern. It is useful not only for controlling the loading. The quartermaster must see his ship to be able to make fast!

The operator of a lifting crane is often situated so far from the place where the load is fastened that he has to be told by radio what to do. It is very nervous and responsible work. Mistakes are inevitable and often are the cause of death. That is why if the operator is put at the place where the load is fastened he will always accompany the load and be able to control its position, just as a pilot controls the helicopter!

Thus, by changing the point of view of the operator of a lifting crane and the pilot of a helicopter it is possible **to improve** controllability.

I fully realize the horror and skepticism of operators and pilots at hearing such ideas. That is why I’ll reassure them in no time. No one is going to place you at the fin of a plane or

the hook of a lifting crane. There will be not enough place for you there. But for a TV camera or an infrared camera there is place there more than enough.

He who is ready to change his **point of view** will probably want to find a new, more convenient place. Probably it will be his own house and the computer screen.

Our brain is also a pilot of our body. It is put in a firm capsule of the cranium watching the surrounding world by means of two complicated optical instruments – the eyes. It has at its disposal two perfect manipulators – the hands, a transport system – the feet and other vital systems carrying pleasure and admiration. And how sad it may sound, our body is its biological machine. Even our exhalation by its chemical composition is very much like the exhaust of a modern car – steam and carbonic acid. That is, as a whole.

Let's submit to this fact and notice that our hands and feet are in full observation of our eyes. We control them. That is why there is nothing to laugh at talking of choosing a new place for observation and control of a place and other machines. It is just a means. Its lucky implementation gives us a chance to make control more effective, convenient and what is most important, safe.

Let's put the starting point at a place convenient for us, say, in the tennis-shirt pocket and call it the beginning of the coordinates.

We stand up and go.

We are not moving relative to the beginning of the coordinates, but just turn the earth to the side necessary for us and do it with our feet! We can call the real world surrounding us virtual. And what is in fact the difference? The quality of the picture? The smell of sweat and the feeling of pain? The rules of the play?

A few more inventions and these differences will remain in the past!

How to Build One's Own Planet

When you mix concrete by hand, you usually think that a dot is a section of a line, and a line is a section of a surface, a surface is a section of three-dimensional space, and three-dimensional space is a section of four-dimensional space and is, as a matter of fact, nothing but a pile of thinly cut surfaces.

Well, how can we build a sphere the diameter of which is 100 meters?

I look questionably at the spade. Here is the answer. Let the handle of the spade be 50 meters long and the lower part of it will be fastened to a hinge situated at the source of liquid concrete, and it will by itself take concrete to the upper end. And there is a sliding sheathing consisting of two fragments of sphere between which concrete is laid. And just as a snail builds its shell, we shall build our sphere. We shall even leave space for the windows.



This is the way *Ostankino*

Tower was built, but the building surface was not a sphere but a cone. The sliding sheathing moved around the axis of the tower. Then a slight rise and a new tire was built.

Building a ball-shaped construction by means of a special crane with a hinge in the center of the sphere is a brilliant idea. Its wonderful peculiarity is in the fact that for an exact mounting a huge sphere it is enough to fasten its fragments strictly perpendicularly to the boom of the crane. When the fragment of the sphere is brought to the place of assemblage it will be turned just the way it should be. The end of the boom of the crane will do it "free of charge."

Rising, the crane will move the elements of the sphere inside the construction, and before mounting, it will slightly lengthen, then the process of joining, welding and then a journey down for a new fragment. Thus, the mounting of a huge

sphere will become a routine process. It is only necessary to choose a correct algorithm for the division of the sphere into fragments and organize its proper making.

If the fulcrum of the mounting crane is made mobile vertically and allow it to considerably lengthen and shorten, it will be possible to build huge variable cylindrical and conic buildings with spherical arches.

If the end of the mounting crane is supplied with another crane, it will be possible to build staggering the imagination construction of joint spheres, cylinders and cones, and the construction of spherical and cylindrical grass roofs will no longer be a problem and not to expensive at that.

This way of building illustrates the principle of **combination** of three technological operations: rise, orientation and control of the construction fragments. All that will be done simultaneously and not interfere with one another.

Maybe this is the way someone was building and is building?

Most likely it is like that because a sphere is the simplest, most exquisite and most widely spread figure in the Universe.

And it is even worse when the area of the circle of knowledge is close to a dot, and the circle of possession takes up the area of a whole country.

If you do not suffer from memory lapses and do not tend to have sudden insights, the circle of your knowledge changes slowly. The circle of possession of people in creative jobs and businessmen playing high is prone to quick changes, creative and business successes, failures and bankruptcy.

There are also rare instances of pure harmony, when the circle of knowledge fully covers the circle of possession wherein happily dwells a purpose, a means and a wonderful result.

How to Check Up Your Idea and Yourself at the Same Time

- *Write your idea on a small scrap of paper.*
- *If you manage to find this scrap tomorrow, you will make certain the worthwhile ideas cannot disappear.*
- *If moreover you still like it, either you have stopped in your development, or your idea is really good. Then try to hide the scrap properly, in order none of your competitors can find it.*
- *If you manage to find a better formulation for your idea and it has begun to develop rising to inventions, it means that you are not a foolish man and able to work with your head two days running.*
- *If on the third day, the same idea gives you the third invention, which differs essentially from the first ones, you are undoubtedly a strong inventor able to work stubbornly and fruitfully and succeed, though maybe you'd better visit a psychiatrist.*
- *If you registered your invention officially and received a message that it was taken into consideration, you are undoubtedly a competent specialist and able for thorough work. Don't forget to mention it in your CV.*
- *If on the next day you find your invention in a survey magazine signed by an unknown American or Japanese, it must inspire you. You made an absolutely normal invention but not crazy enough to be the only one of its kind.*
- *If you received the notification with an invitation to an expert conference in the patent department to discuss the formulations of your application, it is success. A patent is in your pocket!*
- *If at the expert conference, you are suggested remaking completely the formula of your invention and rewriting the whole application and hand it in again, don't agree. Fight!*
- *If the expert is a female, and she let you know that the application should be remade, you have no chances to change the situation.*

- *If there are two male experts at the conference and you are alone - bad luck! You have few chances – like in a fight. But don't lose heart. One of them is stronger, and he will lead the discussion. The debate will come to a duel tête-à-tête. Be polite, but hint gently that even his partner understands your arguments. If it doesn't provoke irritation, you'll either persuade him on your own or with the help of his partner.*
- *Tell all your arguments in favor of your point of view. It is impossible to predict which of them will be deciding. Sometimes it happens that the silliest and weakest argument unexpectedly works and solves the matter in a magic way. The expert will bashfully smile and agree with you. You either really persuade or exhaust him.*
- *If after the conference, the expert goes to accompany you and gives you sensible pieces of advice, you have made a strong impression on him and he likes you. All your following applications on the same topic will probably get to him, and he will let them through with exceptional easiness.*

One day I also met such an expert and, accompanying me, he said: “If you have more worthwhile ideas, don't send them here (to the *Institute of Patent Expertise of the USSR*), they will be probably sent somewhere abroad and patented there. Find a way to patent them in one of the leading western countries.

How to Invent Jokes and Tell Anecdotes

If invention consists of overcoming contradictions, then the creation of a joke is just the opposite, it consists of finding out obvious contradictions in places where there is seemingly none and can't be.

An Anecdote is the Opposite of an Invention!

Now we shall try to prove this “stupendous” discovery of ours.

A talented inventor eliminates the contradictions and makes us feel delighted by his simple and unexpected means

or exquisite trick. A successful joke, just on the contrary, reveals the contradictions and makes things obvious in places where we have never expected. Therefore, old jokes are uninteresting. They do not give a sensation of novelty and sudden opening. Therefore:

The Joke is a Revelation of the Contradiction

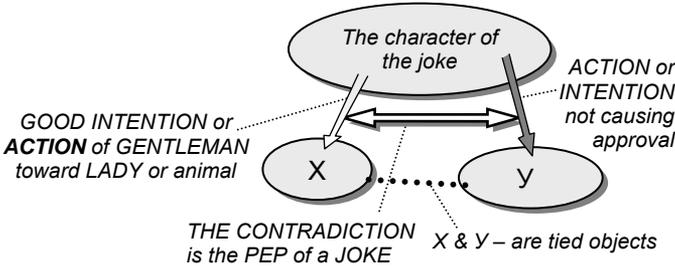
Talented people who make up jokes and anecdotes are the first to see such revelations. Those who are able to tell jokes, are capable to present a sensation of the revelation to his friends and to the spectators.

☉ *If you have opened a hatchway to the cellar and seen a starry sky, then you are a cosmonaut.*

You are smiling? Then you are capable of seeing the contradictions. This ability is the essence of humor!

The famous satirist from St. Petersburg, *Konstantin Melikhin*, thought of a series of short jokes constructed in the way of a question. Here is a typical example: *“Must a gentleman take off the hat before a lady, if the hat is on the head of another gentleman?”*

Jokes of this type are built according to the scheme:



A gentleman must, but can he?

We can turn the arrow of “**ACTIN**” the way we like, choose characters and think of suitable situations:

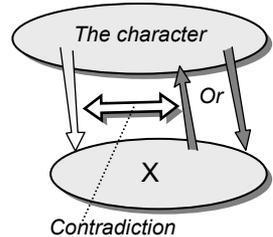
☉ *Should a gentleman greet a lady in the park if her dog is already gnawing his leg?*

☉ *Should a gentleman treat a lady to a pastry if the pastry is on the plate of another lady?*

- ☺ *Should a gentleman say a compliment to a lady if he kisses the hand of another lady?*
- ☺ *Should a gentleman draw the lady's attention to the advantages of the tea if it is hot and spilt on his trousers?*
- ☺ *Should a gentleman treat a lady to a sweet if it was refused by her dog?*
- ☺ *Should a gentleman deliver a speech about love while leaving the lady's bedroom through the window if her husband has already entered the house?*

Now we shall simplify the scheme of a joke. Let the character remain by himself with his "victim" X. →

- ☺ *Should a gentleman treat another gentleman to a cigar if he found it extinct?*



- ☺ *Should a gentleman make a remark to another gentleman if the latter stands in his potato field?*

In such jokes the cause of a smile is due only to the built-in contradictions:

INTENTIONS ↔ ACTION
ACTION ↔ CIRCUMSTANCES.

To find such a contradiction is to understand the joke.

To be the first to find such a contradiction is to create a joke!

A smile may be the cause not only due to the contradiction itself. The joke may imply a double meaning:

- ☺ *Should a gentleman love another gentleman if finds him in one's own bed?*

Are there one or two persons in the bed? Is it adultery or a "gay" surprise? Is it your own imagination or (I beg your pardon) experience?

The jokes will become more interesting if you use the properties of human imagination:

- ☺ *Would a Canadian woodcutter get his insurance if he were struck by a palm tree?*

☺ *Is it possible to accuse the accountant if the shortage was found out during the robbery?*

Such kinds of jokes will suit for entertaining high forehead intellectuals and not everyone will get the gist. We'd like something simpler because we've already purchased beer. Three rubles are left in our pocket. Now we are going to buy crawfish. We come up to the counter and with horror find out that the price for it is 5 rubles!

☺ *“Yesterday the price of crawfish was 3 rubles, and today it is 5! Yesterday the crawfish were small and they cost 3..., and today they are big, but the price is 5. But v...very, very big!*

But

for 5... “

Mikhail Zhvanetsky did not mention the beer in his strange joke⁵. But he has nothing against us remembering and adding details. Maybe, this is the secret of the charm of his jokes?

Why are his satire and jokes never out of time? Is it because in the pocket of his fellow citizens there are always only 3 rubles and never 5? Because it was always like that in this country?

Zhvanetsky never chews his jokes. He respects his listeners. He gives them a chance to guess details and feel happy because of such a discovery.

That is why clever people in Russia love him so much!

Here is the main principle of clever satirists:

Giving possibility to guess details means present the feeling of discovery!

The conflict between *ACTION & CIRCUMSTANCE* is the basis of short anecdotes and jokes, for example:

☺ *Over-fulfillment of the plan at planning economy.*

It is an old joke at the Brezhnev epoch, when there was “planned economy.” The plans were usually defaulted but in case of over-fulfillment were widely advertised. The intellectuals laughed at this contradiction, because over-fulfillment of

⁵ It is an example of one kind of Russian humor, which is not always clear to the people outside Russia. They don't see what is funny in that sad story.

a plan also means violation of the plan. And it is something meaningless.

The *pause* is a means of the drama actors. But we can use it as well.

On the one hand, the pause will give you the possibility to ripen up to the degree of understanding the circumstances before taking the audience aback by a sharp contradiction. On the other hand, the pause is in some way “a cheat” – it makes use of inertia and makes the listener blindly follow the words the way they are given, as in this joke:

☺ *There occurred a thought. (Pause) But there is already no head!*

Add a little delight at the beginning and a slight sadness in the end, and this joke will be quite “edible.”

In a company of sophisticated wits, such a joke may appear too insipid. That is why make use of the old receptions **on the contrary**:

☺ *A thought has come. (Pause) To the head!*

After a short meditation each of us easily agrees that the good thought can come only into a head. This fact inspires and promotes development of the theory of a joke. Therefore we shall go on.

An anecdote is a system. A good anecdote or joke is a beautiful system, at the bottom of which there is some pep of a sharp contradiction. But a handful of dull raisins looks sickly sweet and will hardly make someone laugh. Each pep requires its own time and its own packing, a layer of icing, which is easy to bite through and chew up.

Like any other beautiful construction, a good joke requires polishing. We are returned to the initial idea, change it and try to find its laconic verbal expression hewing a decent appearance.

An experienced wit will never tell old, stale or indecent anecdotes. He will either forget them or make them sound anew.

Thus, what is the way of improving an anecdote?

Let us at first turn to something well known to the natives. Consider the following example:

☉ *An Aggie went hunting and, when he was deep into a forest, he came upon a nude girl. "Are you game?" he asked. "Yes," was her reply. So he shot her!*

This sad story sold as a good joke⁶. We want to show how it is possible to "improve" this story making it a "humane" joke from our point of view. Because we don't want to turn that good chap and potential lover into a murderer at all.

Of course, flirtation is completely excluded though it is closer to norm. But the Aggie is an Aggie because you expected from him something extraordinary, so let us make him a simple robber!:

- ☉ - *"Well, are you game?"—asked the Aggie.*
- *"Yes, I'm a foxy," came the answer.*
- *"Then give me your fur coat, or I'll shoot you."*

We are not going to discuss the question of the kind of ordinance he is going to employ. We will only indicate that there are some contradictions here. The character has no idea of what is flirtation as well as the concept of seasons. Besides, he is going to "undress" a naked person.

Here is another example:

☉ *"Well, I'll be darned," said the Aggie reading the deaths column in the newspaper. "It's amazing, the folks round here die alphabetically..."*

"And what of it?" you may ask it is quite clear, that the alphabetical order is made not by Providence, but by the editorial computer. Is there anything funny about it?

But this story has a chance to become funnier if we add resolute conclusions on the part of the Aggie:

☉ - *"I must change my surname immediately! And it would be even better, if nobody knows it. Then it will never appear in the obituary notice!"*

⁶ The Guinness Dictionary of Jokes by Guinness Publishing Ltd., 1995

So, if you manage to notice and strengthen the contradiction, you will get a chance to make up a joke of your own, or improve that part which seems to you not funny or too rude.

Clarity and laconism are the most important properties of any joke or anecdote. One should strive to achieve it even if the “original” thoroughly changes while telling it or translating.

Here is an example of such a joke:

☺ *Bikini is like statistics – it reveals what is obvious and conceals what is vital.*

We consider that it is possible to make it clearer and simpler:

☺ *Bikini is like statistics – it reveals what is obvious and hides what is most interesting.*

This simplified variant gives a better understanding of the role of statistics in life of common people – they are interested to know the truth, and what is hidden under the bikini is a matter of taste – a beautiful breast or an ardent heart.

Now we know the main secret:

The joke is a minimized system with a sharp sudden contradiction

It’s amusing and even funny, but a well formulated invention problem sounds like a witty anecdote. Therefore the more problems in our society, the more anecdotes!

I don’t want to interfere with the intimate process of creativity, but if your jokes are not born themselves, try to use the following algorithm:

1. **Find the contradiction.** *It’s the idea of the joke.*
2. **Complete the System.** *Create a short story with all necessary elements for understanding the situation and essence of the contradiction.*
3. **Ensure Abruptness.** *Try to create a laconic story. A short terminating phrase should become its key. It should complete the system and open the contradiction.*
4. **Minimize the System.** *Get rid of redundant words.*

5. ***Polish it up.*** *Get through the whole chain from item 1 up to item 4. A new circle may bring a new lucky word, a new idea or a new graceful trick!*

There is nothing composite and mystical here. Beginning with a vague feeling of the imperfection, we pass to an acute and short wording.

The one who does it promptly and often has the reputation of a wit. In order to learn it is simply necessary to do it.

Quickness and quality are seldom allies. That is why professional satirists have to go round the circle again and again in order to get the desired *LACONISM*, *SUDDENNESS* and *SHARPNESS*.

The business is funny, but the operation is boring. You'll also have to do it because all of us are tired of bad jokes. All the new jokes must be short, light and funny. Otherwise they are not jokes.

6. ***Try to Achieve Development.*** *An inspired approach to this matter will by all means award you with new ideas. It is possible to turn them into a flourishing bush of jokes or a wonderful travel to the ideal. To the only and most striking joke, which can turn into a new anecdote or a popular aphorism?*

By the way, this statement is useful only for talented wits. A lack of taste and knowing where to stop make it very easy to spoil a good joke making it too long and flat.

The sharp necessity stimulates creative potential. Any fireman or policeman will tell you that. Therefore the necessity to go to visit someone requires the composition of a pair of innocent jokes. It is necessary to solve this problem straight on your way:

1. *choose the permissible topic for jokes.*
2. *find the contradiction.*
3. *build a laconic construction.*
4. *withdraw or add the second sense.*
5. *test the quality of your creation.*

The first two items are possible to interchange. You see, the bright event itself imposes a theme of a joke and its hero.

The last item should necessarily be present, but only at the end. Its early interference can ruin the gentle sprout of a new joke, and the lack can seriously damage your reputation as a family man with a developed sense of measure.

A sudden necessity to make a speech is usually caused by the fact that the potential orator already knows what he will speak about. His problem is reduced to item #5, if he intends to check himself at all.

There are always plenty of objects to jokes at: you, your child, wife, house, automobile, dog, your friends, neighbor, chief, unexpected meetings, adventure in the city or during traveling. It is simply to think up several blocks for innocent family jokes:

☺ *Where is my third slipper?*

☺ *What strange style of these trousers. A zip-fastener from behind!*

☺ *I cannot understand how this worm has got into the sweet peas. You see the can is closed!*

And now the last item.

How can a good joke be spoiled?

That is very simple. Suffice it to leave out one of the key links. A joke, like any other system is viable only when it has a minimum but a full set of links and a sudden sharp contradiction! If the story appears to be uncompleted or missing a sharp contradiction, the joke is lost. It will appear rude, long and incomprehensible.

You can intentionally exclude some details only, when they are obvious. When they are before your eyes or they were mentioned a few seconds ago. When there is an opportunity to use them and tell a short joke. It enables one to strengthen the effect of suddenness, as there is no necessity to investigate details and to penetrate into circumstances of your joke.

A long joke is satire. It may be interesting to few. It is possible to read it, but not to listen.

You can put a joke in your speech if there is a favorable place in the chain of facts. You may even use an old joke if you are able to show and the audience sees a likeness between the situation you describe and the well known joke. But it is always preferable to crack a joke of your own; the people listening to you deserve it.

Even in your own report you can find cases of ambiguity. You have to intensify them. But it should be understood by the majority. But if you hear some people giggling that means failure. Then it is also not quite clear if they laugh at the joke or at you and your report.

You may use your report as a narration of circumstances of a long joke. That is 95 % of the job. When it is done put in a sharp contradiction. It may be only a phrase or a gesture. The people smile. You have achieved your aim! They will remember you and your report as interesting and successful.

Do not forget the importance of abruptness. To make the public laugh and feel surprised is possible even by a small abrupt contradiction. But if you can't manage suddenness use only a sharp contradiction – a very funny and fresh idea.

Thus:

- *An anecdote consists of a short and vivid description of a situation and an abrupt and acute contradiction.*
- *The lack of acuteness can be compensated by abruptness.*
- *The best moment for telling an anecdote is a ready made situation which makes the description of details unnecessary.*

But if the audience has awarded you only with slight smiles, tell them that it wasn't any joke. Let them take the smiles back!

A few more words about the nature of an anecdote. It happens that sometimes some people laugh in places where others are sad.

It is well known that it is useless to argue about humor, just as tastes. Humor can be strange, specific and even social!

One and the same joke can make some people laugh splitting their sides, offend others and keep indifferent still others. All depends on the circumstance, the listeners and the narrator.

Here is an example:

- ☺ - *How do you get four elephants into a Mini?*
- *Two in the front and two in the back!*

It is an old English joke which will not be understood by those who know that a Mini is a small English car.

But now imagine a joyful company of students, who are going to go to a picnic on a small Japanese car.

- ☺ - *How many elephants will go into Honda?*
- *Two in front and three in the back!*

It sounds more cheerful, doesn't it?

And now very, very cheerful.

Two "new Russians" sitting in a Mercedes 600 are looking at the stream of cheap cars going along the street:

- ☺ - *How many he-goats can get into a tin-can?*
- *Five!*
- *Nope, six! Have a look: two in front and four in the back!*

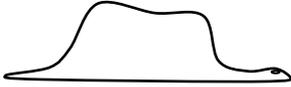
Thus, an anecdote is a social phenomenon. Every social group has its own jokes. The humor of those hidden behind the darkened windows of expensive cars may essentially differ from the humor of passengers going by street buses.

But no more about sad things. We all know very well that the good guys in the new black limousines have earned the means by the sweat of the brow working at atomic power stations, in coal-mines and in the fields of the collective farms. No doubt about it!

Let's better have a talk about elephants – the heroes of a wonderful remarkable English series.

The epidemic of elephant jokes is traced back to the end of the fifties – beginning of the sixties, but nobody knows for sure what the first drop was initiating them. Was it a new Mini at the gates of the London zoo, or a cloud in the shape of an elephant calf passing the sighting platform of the Eiffel Tower?

Those wonderful images were in my mind when I was going in an overcrowded street bus on a rainy day in July, 2000. A passenger sitting nearby was standing, and I noticed my own hat! So here is the link in the chain of mysterious historic events! Now I know for sure that the series of elephant jokes occurred to the head of a six-year-old boy. It was Antaeus de Saint-Exupery, and it happens in the remote 1906. Here is his drawing:



The drawing was published in 1943 together with his fairy tale “The Little Prince,” where the au-

thor maintained that, “It wasn’t a hat at all. It was a boa that swallowed an elephant.” European wits were reading the tale with the children, imagining the elephant inside the spacious boa and creating funny stories about elephants. Yes! That was the beginning. You don’t believe it? Take a smell of your wet hat and you’ll realize that the elephant is inside and has lived there for a long time! Is it worth while arguing about it? Let us better get down to business and taste it! No, I mean not the hat, but the remarkable series of elephant jokes! Also we shall not be too strict to their specific “foreign” flavor:

- ☺ *One morning I shot an elephant walking in my pajamas! How he got in my pajamas I’ll never know!*⁷
- ☺ - *How did the elephant get into the telephone box?!⁸*
- *The door was open.*
- ☺ - *Why is the elephant gadding along the highway?*
- *He is picking up the crushed dogs... and those who did it.*
- ☺ - *Why does the elephant creep in the grass?*
- *He is taking the insects into the Red book.*

^{7, 8} The Guinness Dictionary of Jokes by Guinness Publishing Ltd., 1995

The Secrets of Toys

Consider the doll, *Barby*, and the Japanese toy, *Tamagochi*. What is there in common between them? Is it the fact that both of them had a tremendous success? But where are the roots of the success?

Both toys are a model of a system of real life of people!

The *Barby* doll is a model of a young and beautiful woman.

Tamagochi is a model of a living being who needs care and can remind you about it. Up to now by sound.

“Old lady” *Barby* was born a grown-up and many years remains young and attractive. Girls dream of being the same, like *Barby*. They are interested in the life of the young lady.

They want to be with her, decorate her home, travel, go in for sports and even nurse her children. They see in *Barby* an attractive and perspective system. This in the way they are modeling their future. The play approaches their dream and makes it tangible. Some generations of American girls grew up under the influence of *Barby*'s charm, but very few of them are ready to acknowledge that they partially owe their success and happiness to the doll. Indeed, is it possible that a plastic doll should make someone slender, beautiful, clever and cheerful? Was it the doll that rewarded them with an exquisite taste and taught them to be careful?

For some decades of its existence, *Barby* has become more controllable. It acquired a flexible waist and firm joints. This firmness and attractiveness will last for a long time. Most likely that the doll, *Barby*, was made forever!



Why forever? Just because the construction of children and the principles of their development do not change! And if they do change, it does very slowly.

Tamagochi is a model of a living being for whom you are responsible. Sometimes school children do not part with it even at the lessons. The indignant teacher demands not to bring toys to school. An eleven old girl sadly remarks: “If I don’t feed him, he will die from hunger.” This magic phrase was irresistible at the top of popularity of the toy. None of the teachers of my daughter’s class could say anything against it!

The most remarkable property of the two toys is the fact that the children themselves manage them and the toys themselves, as it were, improve.

Tamagochi has succeeded in it most of all. During some days before the eyes of the child, it could go over the complete life cycle. From the very birth to death.

For the manufacturers of such toys ability and aspiration for development turn into additional profit. For Barbie needs heaps of clothes, a house, a car, a swimming pool, a water bicycle, an aqualung... You’ve bought a doll, so you’ll have to purchase all the necessary things. Your child will remind you of it.

Tamagochi has died. It is necessary to bury him. The funeral will cost you three times more than the purchase of a new toy.

Is it a shameless exploitation of the force of human traditions?

No! The children receive from their parents a lesson of respect and care for the deceased.

Tamagochi is a persevering and obtrusive creature which could produce a voice and show on a tiny screen all its problems. Children are managing it, and it manages the children. Soon it will learn to talk and move and will become even more “harmful.” It is its natural way of development. We can’t prevent it. But God forbid if it learns to multiply itself!

Barby is already 40. That means that we will have to get used to *Tamagochi* and to his numerous brother-mutants for many years. It will last no less than Barby.

Are there any universal and absolutely irresistible toys?

The computer! It has already become a third hemisphere of our brain and may become anything. It is only necessary to have a good idea, a suitable program and channels of connection with the outer world. Many people are already convinced that a computer can simulate and show on its screen everything. In this way it hypnotizes both children and grown-ups. The only limitation is complicity and price. But examples to overcoming these contradictions appeared long ago. Those are pocket electronic games. *Tamagochi* has become one of the most successful offspring's of the computer!

Are there in our real life any systems which could become a prototype of new popular toys and bring tangible profit to their manufacturers for a short period of time and without many preparations?

Let's reject the composite and expensive structures filled with electrical and mechanical stuffing. We need only those things which could provoke a natural emotional outburst and create great demand without radical changes in technology and huge investments.

Probably dolls which will be a copy of the parents?

But then such a doll should be produced using the set of standard elements during the time the child and the prototype of the doll go to the counter of the shop. The surprised daddy is offered to buy his own self! Not many will be able to withstand such a surprise. Is it possible that you should leave your own self behind the counter in the dust?

At a Turkish beach, you will be offered a qualitative photo of your child for one dollar. Nobody refuses. The business is in full swing. It is a similar method, and it is working!

It is easy to guess that a good toy should be an exact copy or an easily controllable model of one of the systems the child is already acquainted with. It is also desirable that the toy

should develop, change its appearance, structure, be able to learn and to become "cleverer."

But it happens so that you present the child with a new and bright toy and he does not play with it. He is interested in the grown-ups' things. And not only the buttons of a fax or a microwave oven. An ordinary wrist watch may happen to be more attractive than a set of children's dishes or a little plastic car.

What could be the reason of such a phenomenon?

The details! The great amount of small "mysterious" details which can be looked at and examined for a long time, finding new and new facets and peculiarities. In this respect things of grown-ups are much richer, than their plastic "caricatures" which adults make for children and call them toys. Children quickly find out the "falsehood" of such toys and lose all interest to them. Things of grown-ups attract them because they feel their great meaning and informative nature.

In this respect grown-ups do not differ in any way from children. They also need new information and new impressions. They are also tortured by the thirst of development. Then is it worth wondering that the most interesting toys (the TV set, the computer and car) belong to adults?

But we are interested in something else. The mere fact that a toy preserves its attractiveness if it remains a source of information. Observing and disassembling them, they receive new impressions. And if a toy is "complicated" enough and "transparent," it will by all means attract the attention of children and those self-confident adults who are inclined to choose toys for their children themselves.

It is not for nothing that big plastic watches in a transparent case enjoy stable demand. You can easily see the whole mechanism, follow the way it works, disassemble it and assemble it again. Then how did it happen that "transparent" watches did not find themselves among the three most popular toys? It seems to me that they lack the ability to develop. Probably this is the shortcoming that children feel more acute than grown-ups?

Thus, the most valuable properties of toys are likeness, controllability and the ability to develop. Any of those makes the toy attractive. But if those properties are combined, the toy becomes irresistible.

Make such a toy! You shall have a well deserved success!

Secrets of Art

I was yet a student when I saw that remarkable picture. Its name is “Three Generations in Bath.” In the picture, one can see a young woman, her small daughter and her old mother. The silhouettes are vague. There is a wonderful feeling of scope, warmth and moisture due to the fact that there were two canvases, one entire, the other, like a net. On the entire picture one can see a deadened luster of the naked bodies. On the net, at a distance of one inch there is also a picture, but “transparent.” Together they create an illusion of scope and depth.

It was the beginning of the time of Perestroika. You are at an exhibition of avant-garde artists. The most imposing exhibit is a big motorcycle with the Terminator and a beautiful dummy of a girl on it. There are also all kinds of rubbish there: rusty pig-iron with attached little heads and hands of dolls.

One can see and feel the same method – that of **contradiction**. Contradiction between the metallic power of the Terminator and the fragile beauty of the girl. Between the solid pig-iron body and tender children’s hands.

Now on the wall, one can see a wooden box of some instrument. You can see supports and nests for its parts. Two halves of the box almost of the same size. The cover of the box makes space for the man. There a man (a doll) is placed with hardly visible outstanding male features. There are also some other man’s belongings: a razor, a glass, a nail...

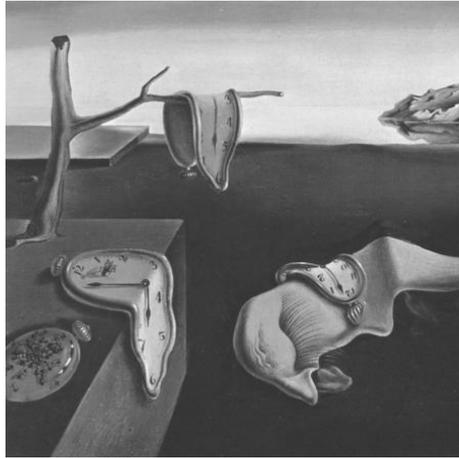
The bottom of the box belongs to the woman. There are she and her things: a looking-glass, a hair-brush, a lipstick...

If you imagine the two parts of the box closed, the dolls get joined in quite a natural and happy way. The two halves

complete each other and give the impression of **completeness of the system**. Though very strange: a certain old box and a feeling of completeness?

“Three Generations in Bath” and “The Box,” are undoubtedly inventions!

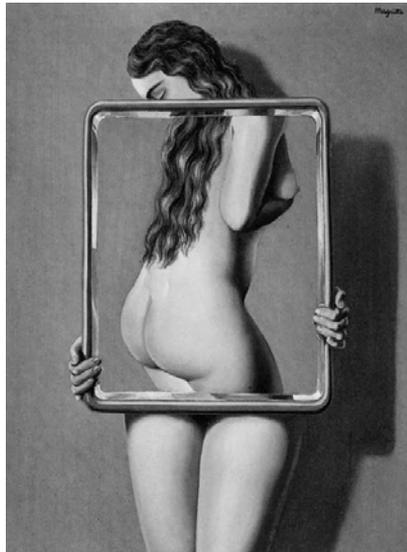
Salvador Dali invented a flexible plastic watch and used it many times. Now the watch is a drop, now it is a pancake. Is it a combination of exactness and plasticity? That’s an obvious contradiction!



Salvador Dali – “The Persistence of Memory”

Rene Magritte is not inclined to shock the onlookers. He is a master of soft contradictions. A plaster head with blood on the temple is the most “terrible” that he shows us.

If there is a mirror in the canvas, then there must be all kinds of things nearby reflected in it. “That’s that,” says *Magritte*. In his mirrors you can see these things but ... in quite a different and completely unexpected foreshortening. We surprisingly look at these strange things but we have no desire to argue with the master. We feel completeness of his thought!



Rene Magritte - “Dangerous Connections”

But why are there so few faces in the pictures of the surrealists? Probably it is because their authors couldn't manage to depict the luster of their eyes and presence of spirit? Is it possible that they should use the sharp contradictions to compensate that shortcoming?

Celebrities die without leaving an answer to that ticklish question. We'll have to do without an exact answer. Because they have achieved their goal,



René Magritte – “Not to be reproduced”

drew our attention and surprised us. And it is of no unimportance in what way that contradiction was achieved – by means of a realized purpose or compensation of an imaginary shortcoming.

So, the best products of the surrealists contain obvious contradictions which surprise and enrapture. Contrasts and paradoxes are the most valuable basis.

The works of realists also contain one obvious and rather fruitful contradiction. They show to what extent it is possible to depict nature and a human by means of “dead” material. A flat representation becomes alive and volumetric. And something volumetric is natural and surprisingly precise.

Some creations of art exactly depict attributes of a represented object. Others contain obvious contradictions which the public easily find. If there are several contradictions and they are revealed gradually, we are told that we deal with a real work of art.

A minimum of figurative means and completeness of the artistic image make an impressive contradiction. This is a method of many artists, but it is used not only by artists. It is a favorite method of every talented engineer and designer who

purposely wants to make use of minimum means to achieve the goal. And it is precisely due to this aspiration of their imagination that their hands create amazingly beautiful things and effective machines. And we already know the secret of that beauty. In the contradictory but harmonious union of **completeness** and **minimum**.

This pair is contradictory and is simultaneously harmonious. Perhaps it is worth while adding to these pair elements which specify the movement of energy and the vector of development, because they create the atmosphere of mood.

Rublev's icons radiate energy and the soft and blessing power of the Holy Spirit. And not only they. Many successfully painted portraits "radiate" powerful calmness or harmonic self-sufficiency.

There are drawings which tell us what will happen the next instant. There are pictures which obviously show that we deal with development, or degradation or mysterious stagnation.

To deprive us of the feeling of time or the understanding of the direction of development of events means to make us suffer.

"It is necessary to make the public suffer," maintains Alfred *Hitchcock* and he did it by means of an acute feeling of indefiniteness. There is a hint but no full information for complete understanding!

Suffering is the result of this strange art which shows us details and avoids showing the whole system. And it is clear. Hidden danger frightens us much more. The danger that acts beyond our observation.

Hitchcock was undoubtedly a talented inventor. The fear of danger appears not because of horrible details but by quite the contrary, the lack of some "mysterious" parts of the picture. It seems sometimes that only *Hitchcock* alone knows what exactly is necessary to put out of sight of the camera in order to achieve utmost tension and fear.

Hitchcock obviously tried not only to save money but also time. If in the theatrical action there are no takes and the time of the whole action is practically equal to the length of the per-

formance so why not shoot a film as an indivisible episode which begins early in the morning and ends in the evening, in the way of a discontinued action? This is the way *Hitchcock* meditated before shooting one of his films.

Artists understand that the value of their works is in many ways connected with the exactness of the reproduction of details and therefore they use photos and projection of images while drawing. Sometimes they simply use cuttings of old magazines and necessary elements and glue them to their creations.

A few years ago, a scandal broke out in England due to a sculptor having made use of parts of a human body for his form for his plaster casts. In his production, someone recently found out that those were parts of the body of a dead man. The striving for exactness made his work criminal.

That fact once again confirms the desire of artists to be exact and how terrible their secrets can be.

Artists have a chance to surprise us not only by their “technical” receptions. They sometimes manage to penetrate into our subconsciousness.

Looking at the sun rays, a hardly noticeable smile or blazing flowers painted with a thin brush or “careless” smudges of the finger, we are surprised at the strange happiness, recognition and mood that are transferred to us. And we can’t find any easily explained reason. There are no proper words! That means that the artist has found a key to your subconsciousness. He has come in touch with the code combination which has switched on your emotions!

Talented artists have their own unique findings. To find them is the passion of each of them. But they seldom speak about them. Maybe because that passion is very intimate and the secrets of success lie behind their own comprehension?

We have heard of the secrets of paints and mysterious unique findings in painting. Art historian and critics sometimes give us to know that secrets exist only for the public. They seldom acknowledge that there are secrets for them too. If there were no such secrets, there would be series of unique

and tremendous pictures and sculptures manufactured with the help of a conveyor. Because it looks so simple, each work could be applied with its own unique combination of methods and paints! And if such a thing does not exist then, there is no clear understanding of principles with which such a conveyor could be created.

Psychologists willingly agree that keys to subconsciousness do exist. But nobody has ever shown us a full set of such keys. Looks like the use of master keys. Otherwise, where is the result?

It looks funny, but the most widespread artistic method is inertia. Not only tricks by actors of the circus are based on it. It is used by musicians and dancers, even artists. They surprise us by their inspired inertia. However strange it may sound but a masterly performed item is qualitative inertia. The fruit of long and persistent rehearsals. It is necessary for stable and accurate reproduction of their artistic product.

The ability to find new intonations, receptions and tricks is a special talent which people prefer to recognize only at the background of the acknowledged mastery. It is the case when inertia is used as an auxiliary tool of creativity!

It is considered to be inadmissible for an artist to use the methods and manners of other artists. Copying in art is a thankless matter. The mission of a real master is to find at least one “supermethod” which will allow to achieve unique precision or sharp contradiction or find an unexpected metaphor or reveal the internal energy and define the vector of development.

Thus, the most important and significant properties are: **exactness, contradiction, a new unusual metaphor, internal energy and the vector of development!** These are the key words behind which there is a concrete goal, a lot of accessible means and of course, the talent of the artist. Now “little” is left. To organize the procedure of synthesis and get a unique result!

The metaphor is the simplest and most natural way to express one’s thoughts. It’s a story about one object told by

means of another. Transfer of the property of one object to another. And this is the main method of any language.

You want to tell something in detail? Then you'll need not only words. You'll have to use gestures, paints, pieces of wood, stone, metal... At this moment you are creating a model of what you were going to tell. You are looking for something common between the phenomena and use it in your work: a picture, a sample of machine or its advertisement.

It is good if your discovery is clear to people and very good when it is a bit beyond understanding. And it is there that new information is obtained!

The creation of a halo of mystery is also a method. It is a temptation! A hint that in an instant you will see something completely new and extremely valuable!

Nature itself is full of likeness and metaphors! We occasionally find quite unexpectedly signs of likeness of two quite different phenomena. This is a happy chance to get convinced in the integrity of nature and the opportunity to understand its laws and principles.

But besides its conformity and necessity, there is much place for chance. It is easy to discern a funny elephant calf or kitten in the shape of a floating cloud, and on a polished pine board it is easy to find a seductive female silhouette.

The likeness of two lines could be used to replace on the advert clip the lines of the door of a new tiny car by those of an enticing girl. And the brilliance of a frontal glass of a prestigious car may easily turn into the luster of a large brilliant. The end of the hand of an expensive watch may suddenly turn into a head of a snake which by its poisonous grin will remind you that "the hour has struck!"

Before making an advert snapshot, the expert will put before him the task to transform that i.e. the promoted object into a natural temptation. He asks himself the only one simple question: "In what way does that seductive and prestigious object remind you of that?"

And here it is not necessary to search for one and the only one "correct" or simple answer. It is necessary to make use of

your imagination, to look for a chance answer. Because a huge tractor with a red cab is really very like a horseman in a red jacket. And a car tire looks like a tremendous paw of a cat.

Artists are not only creators. They are also grateful spectators. They see accidental coincidences of lines and images. They intuitively feel the appropriateness and tell us about them in their creations.

The faces of famous actors are ready made metaphors. We know them and know what to expect of them. A list of their names is guarantee of quality of a theatrical performance or a new film. Favorite names are really a temptation.

Contradiction is a most widespread and most reliable method. All the comedies and cheerful episodes are constructed on it. But it may be useful not only for paradoxes and laughter. Its soft and well contoured shapes perfectly work in other genres. Remember, the tragedy Romeo and Juliet is based on a very difficult contradiction. The hatred of two family clans against the love of two young hearts which try to overcome the conflict. A series of tragic errors and lack of mobile communication impede it!

What is the difference between a painting and a photo?

Exactness? The number of details? The play of light which the artist can understand and express?

An artist can depict only things he understands, feels and guesses. Things have gone through the filter of his consciousness and what was born in this consciousness while expressing people's faces and tree branches he does not merely copy. He creates them anew. That is the difference between a drawing and a photo. And if the artist manages to turn these differences into metaphors or sharp contradictions, he is a real master! His works make a great impression. They are discoveries!

If an artist wants to make a name of his own, he will have to create a palette of his own effective and thoroughly executed methods. And then his works will be recognized and distinguished from others.

The requirement of a careful implementation of his own methods is not a slip of the tongue. It is a necessity. Otherwise

anyone making use of his method and doing it in a better way will have the right to call it his method.

What is the secret of the charm of a naïve painting? The coloring? The naïve and touching breach of the foundations and laws of painting? But if these breaches are stable, we may call them methods!

What exactly is the onlooker expected to see in order to be surprised or even shaken by a dance? What will waken in his soul and tender feelings?

Well, there is a store of impressive means: the motions, the grease-paint, the mimicry, the clothes. This set gives the possibility to make a good combination. With their help, it is easy to change the age and sex.

A complete lack of clothes or something very transparent is still a standard but effective attribute of a dance.

A light grease-paint or sensible drawings on a naked body are also effective methods. They not only emphasize the beauty of a human body but entirely change the man. The makeup and costume are meant not only for the spectators. The spirit of the hero and characters arise not only on the stage and not only by imagination of the authors of the performance. It is born in the dressing-room before the mirror. Looking at himself a talented actor becomes different. The character's soul takes the upper hand over his body!

The essence of a talented dance is exactness and the possibility to recognize the image. A dance is like a sculpture – excess interferes. Including excess of clothes. The clothes not only conceal details of the body structure, it hides details of the movements and feelings. Trepidation and delight are felt by the spectators only in case there is a lawful basis - **minimum means + completeness** of the exact model.

The Ford design style known as “New Edge,” illustrates the desire to change not so much the shape of the car body but the border between the main parts of the body. The designers talked about beauty, but there is something else there.

The length of the borders between parts of the body became shorter! The perimeter of the bonnet and wings de-

creased. The lattice of the radiator became simpler and smaller. That means that the weight and the costs of production were also reduced!

Ford Ka is a brilliant sample of this style!

Ford Focus seemed to be made in the same style. But it does not give the feeling of graceful rational simplicity, which its “junior brother” in style radiates.



Ford Ka

The traditional borders between the basic elements of a body were also “infringed” but all these changes did not produce the feeling of a desire for the minimum. One feels an excess of arched lines which makes the car look like a rugby ball. The principle for the minimum was not fulfilled. Probably this was the reason why Focus did not achieve the desired success in 2000.

Beautiful things made in a laconic way make the producers on the one hand earn more money, on the other, economize. But not only are they the winners. The consumers also save their money. They do not pay for excesses to which they are at best indifferent.

The formula of beauty works everywhere! The slight conformity of natural laws and creativity exists and works irrespective of the fact whether we know them or not. But it is much easier for them to display themselves if we understand them and help them to act! Because in most cases the phenomenon of beauty we accept is a chance find rather than a manifestation of the law.

The Secret Weapon of the Author of a Modern Detective

We know already some secrets of toys, jokes and some other art products. That is why it is foolish to compare a good detective story to something indefinite and mysterious.

In my opinion, there are common roots of our interest in a good detective and a good anecdote. They are unexpected conflict or sharp contradiction! But here there is a difference: we are past laughter.

A short detective story requires only one impressive episode or a sudden trick. The author of such a story will first of all show us the result of the crime, and then, having tortured the reader for some time, reveals the mechanism. The intrigue is settled by means of a prompt and unexpected denouement which contains the pep of the detective. The reader gets it as a reward for his patience.

As everywhere else there were inventors too who have guessed and made use of the reception “on the contrary.” Therefore, more often than not, we are offered a plot where all the preparations and the realization of the felony are performed before the reader’s eyes (trick number 1). Then we watch the process of investigation sympathizing or rejoicing the misfortunes of others.

In order to add evenness and abruptness, the authors have to think of trick number 2. Otherwise, where is the intrigue?

Remember lieutenant Colombo. It is he who trick number 2 belongs to. He makes use of trick number 2 to unmask the author of trick number 1. The spectators are also surprised at Colombo’s being crazy on telling the criminal all the details of the investigation. This “insidious play” is a means to prepare trick number 2.

But enough! No more theory!

Well, there is something else. A good detective novel is not just a lengthy story. The long line of the plot has to be threaded with peps of dainty tricks alternating them with routine episodes and scenes of everyday life. Expectations of a

new funny or dramatic episode make the reader go on with the reading book or watching the film. Should a detective novel or a film be deprived of acute episodes and they lose all their attractiveness.

A detective novel is not a manual for specialists in crime detection, not a historical narration. No one forbids the author to jump aside of the main plot. For this purpose there are other planes of the main plot with their own characters. They will do all the dirty work and will be the mounting of the brilliant facets of the main characters.

The characters of the second plane are needed guys. Because now and then we want to take a little rest of the main characters. Otherwise he will appear too mealy-mouthed with all his eccentricity and the ability to get evidence at places where there is none.

Other characters are of a different style. They act and think differently. A good film or a novel also requires two or three plot lines each being decorated with a placer of interesting episodes but of a different quality. Because each character has his own style and limits.

The plot lines may encounter one another like trains, interlace like snakes, get to the surface with a loud noise like an atomic submarine or coquettishly show its slack tail as the mysterious *Nessi* does it. We are interested to watch the synchronous swimming of the characters or their sudden deviation of the "general line."

It is just enough to slightly displace the focus and bad guys become good fellows and vice versa, good fellows become bad fellows. By the way, for good fellows there is nothing to do in a detective. They look so insipid that they cause no sympathy. We are Interested in things contradicting to our experience and expectations. This of beyond the norm.

It is quite enough to add a few film stars a couple of new tricks. Place them properly and the film becomes perfect and irresistible.

The contradiction of every day experience is the most fruitful principle to stimulate curiosity. Its extreme is the rec-

ipe “on the contrary” which is effective not only in the hands of an inventor. Very often authors of charming detective plots widely use it, e.g. a little child is easily sent to gangsters, a clumsy policeman with a batch of problems in his family life appears to be in actual fact a wonderful professional, a hero and a victor, and the guy from the team of bad fellows all the time steps on the rake. Such plots are really interesting. They are interesting because they have charming and obvious contradictions.

And now, to the point!

“I have been waiting for them for already two weeks. I don’t know how many of them will come, but they are sure to come.

At night? In the daytime? It makes no difference for them. They can even in a police car. They have everything to protect their bottom.

I must have a both. I’m getting into the bath. The water is clean and blue!

Oh...oh! I must add little suds. There will be no surprise without it! Fr...r! u

The door of the bathroom has burst open!

- Hi! Didn’t expect me? But I’d been waiting all the time before you climbed into bath!

- Well, at last – I stretched out my hand covered with foam.

Instead of the palm a white jet of foam appears and hits the guy straight in the chest.

- Oh, what shit? – he asks surprisingly and lets his gun into the bath.

- Well, you see I’ve put on a rubber glove on this Browning, lest the water should enter it. - I answered honestly. – Are you one?

- Along - he answers covering the hole in his chest with his palm, now wrapped round with red foam.

I believed him. People do not lie when they are dying.

It is necessary to ring 911. A pair of kidneys and one lung will be of great use to a normal man. I hope, the reseal hasn’t taken drugs today...”

And so, the trick is very simple. The guy from a team of bad fellows did not suspect that it was possible to have a gun in the bath, hide it under the water and have it at hand. A very simple invention, a little foam for disguise and abruptness save the “hero’s” life.

By the way for the sake of balancing evil it was worth giving him some boxes on the ear.

You cannot call the procedure of synthesizing attractive episodes very complicated. You will always find at hand a blank of a ready made plot which can be used as a base. Now it is quite enough to decorate it with a plaser of attractive tricks based on devices chosen beforehand and an ordinary-looking skeleton acquires quality and seductive body.

The checkout on localism and some terminating accents and business is made!

4. *The CAR of the 21st Century*

The Ideal Car

To devise a bicycle was one of the most popular kinds of technical creativity in the 19th century. And to devise a car is one of the most interesting occupations in the 20th century.

Today it is possible to say with confidence that this fascinating occupation has safely moved to the next century. The ideal car is not created yet.

We already know some natural principles of the development of systems. That's why we can deliberately and without surplus of optimism build the prognosis of car designing development in the 21st century and even devise something.

If you are not an automobile fan and consider it to be only a means of transportation, you can easily agree that the ideal car is a teleportation device. Norbert Wiener, an eccentric American who is considered to be the father of cybernetics, was the first to understand it. He proposed not to transport people, but to transmit them by telegraph. That means by fax. Not of course by the flat and primitive device we have, but with the help of a more perfect and powerful device that can transmit colored and volumetric subjects. But Wiener didn't say how to achieve the transmission without losses and distortion, how to avoid copying and where to put the original if the precise client's copy had already reached the destination.

You come home and find your "twin" in your bed. But who is a copy and who is the original?

Well, that's not our problem. Frankly speaking, I also agree to step back from the absolute ideal. Really, I can't imagine how I shall look into my colleagues' eyes, creeping out on my knees from a box with the inscription *XEROX MUSTANG*. Especially if all of them are normal guys who have come to work by their normal cars.

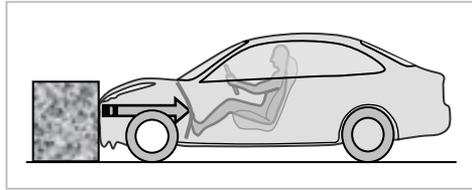
We are not ready yet for such a future. We simply want to have a durable and reliable car, not worse than other people

have, to be pleased while driving and feel a little proud because of its “outstanding features.”

So, how should the future ideal car look? Of course, we are interested in a market variant, which represents the buyer's idea about an ideal.

The salon and the fuel tank of the car should be outside the deformation area. The safety of the niche for the driver's feet after a frontal collision with an obstacle is considered to be a great achievement. It's a matter of concern for all the designers, but following an old tradition they do quite the opposite. If we look under the cowling, quite often it is possible to see how a strong longitudinal beam slips from the bumper along the wheel arch and motor compartment wall and rests its end against the niche for feet. In this place, after a strong frontal collision the niche can be deformed.

And not only the feet can be injured. To secure the salon, to reduce its deformation



and to keep the passenger in place with the help of the belts and a number of safety air-cushions is only half of the problem. The real problem is to find a way to reduce the blow power!

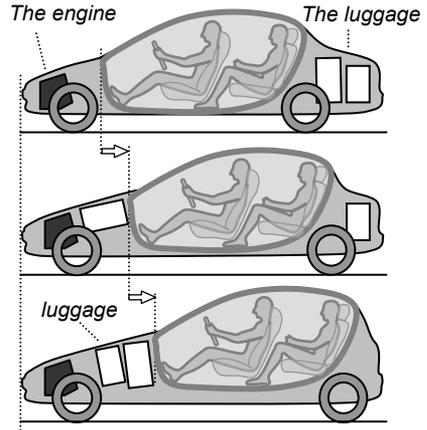
This can be done paradoxically the other way round. We shouldn't decrease but increase the deformation area. Of course, not at the expense of the salon.

The blow power essentially depends on the blow duration and on what distance the deformed bumper advances towards the salon. It's vital for the passengers, that the distance is to be as great as possible at this moment.

To achieve the desired effect, we have three ways at our disposal:

1. To use a powerful energy-absorbing bumper, far advanced.
2. To move the salon backward and the boot forward. But so as not to shock the public, this operation can be done in two

steps as it is seen in the picture. Thus our car gains an extravagant and sporting shape reminding of the traditions of the beginning in the 20th century. The passengers will finally get rid of the motor roar, and the increased base (the distance between the wheel axles) will contribute to the car steadiness.



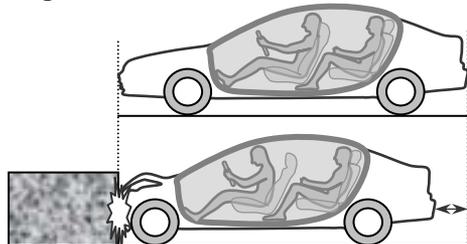
3. To change the salon trajectory and the direction of the blow.

This seems to be impossible only on the first sight.

Today, car designers are absolutely sure that the salon should inevitably and without changing direction advance towards the obstacle. Can it be otherwise?

To “hide” the motor under the salon is a good solution. But it can be done the other way round – to lift the salon and direct it over the engine and even over the obstacle! Such things may happen not only in a fantastic movie. The frontal part of the car can be used as a mobile support and as a springboard. But not only the engine should be put under the salon. The whole frontal part, deforming and absorbing energy should lift and let pass forward the frontal part of the salon. It is desirable to do it smoothly, without sharp jerks.

The way it was:

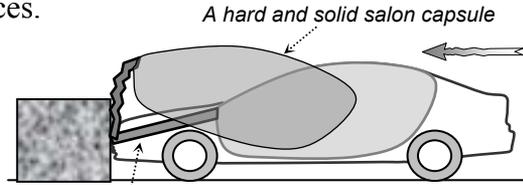


The way it will be:



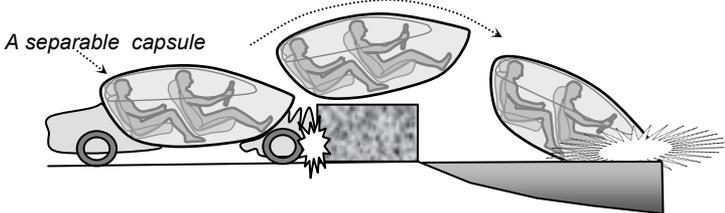
It’s really possible to change the direction of the blow and limit its power!

The safety can really be measured by length of the cowl-ing, if the frontal part of the car gains the ability to shrink uni-formly, to lift and let the frontal part of the salon pass. The duration of the blow will increase several times, which means that its power will greatly decrease! Such vehicles will be con-siderably safer for passengers. Besides, these cars will allow driving noticeably faster without a risk of harmful or fatal consequences.



The slant deformable beam, which works as a pole for jumping.

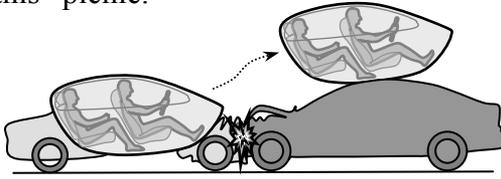
So, the 21st century automobile salon is a solid capsule with fresh air and quiet coziness. The power compartment and the boot will be attached to the salon sides. In case of car crash, nothing shall penetrate or flatten the capsule with the passengers. This means that the strongest constructional materials will protect the passengers, not the frontal bumper form. That’s why we have the right to urge car designers to produce automobiles with a super strong and even detachable salon capsule. Let the chassis and the engine stay in the crash place and take the blow. And the salon capsule will make a small flight and successfully land (or come down on water) at a distance.



Without a heavy engine it has more chances “to stay afloat.”

And finally, let your salon in case of collision with another car jump upward like on a springboard and slip over its body.

It's a chance to reduce the injury and damage of the participants of this "picnic."



We know already, that the damage of our car is in direct proportion to the mass of the automobile we have confronted. That's why let's agree to exchange the "frontal attack" for a small flight.

And if it will be a side blow?

The capsule with passengers will move, and the chassis with the engine will stay to stop the offender and take the main blow and destruction.

A perspective to get into a car heap of broken-down cars seems not to be so awful now. A frontal or back blow will simply squeeze out the salon capsule on the top of the heap. The capsule will slip out as like a cherry-stone slips out of the fingers.



A passenger salon capsule with a boot and motor compartment attached to it is not the worst way of the development of car designing. Its funny peculiarity is that the boot and the power compartment can be changed, following the fashion. This will save the money of those who have already paid for solidity and comfort of the salon and don't want to part with it.

It will be possible to leave at the auto workshop not the whole car, but the part, which is out of order. For repair time a working aggregate will be attached to your vehicle. And instead of purchasing a new car, you simply buy its new boot or motor compartment. You can also attach the boot to your car yourself and only in case you really need it. For long-range

trips, for example. This will not only save fuel, but make your car more mobile and controllable.

The idea to transform a car into some unified blocks is not new, but it’s not an obvious fact that it can make our life safer.

Solid bumpers and aggressive attachments to the frontal part of many jeeps do not reflect the care about pedestrians. But there are already some systems, which in a fraction of a second can detect a sudden obstacle in front of the vehicle and apply the brake even before the driver understands what’s going on.

But what are we to do if the brakes can’t stop the car in time? At that very instant, we will need a safety cushion, not



inside, but in the frontal part of the vehicle. Such cushions are capable of saving pedestrians’ lives.

This cushion should be a transparent one, so as not to do any harm to the driver in case of faulty operation.

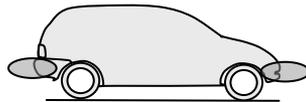
It’s necessary to note, that this “masterpiece” of safety can take care not only of pedestrians. In case of collision with a tree or a truck, harmful consequences will be noticeably softer!

Now it seems to be evident that at least one safety cushion should be placed outside the salon.

And now one more pair of “inflatable ruses.”

These inflatable bumpers are hardly capable of increasing safety, but they can help to spare some space for maneuver during the parking along the street. If you want to drive out of a compact line of cars you can gain some space for this maneuver by blowing off the bumpers.

You don’t want to blow them off? Then you’ll have to repel the automobile, which blocked your car. A soft cushion won’t do any noticeable harm.



It’s really necessary to be softer!

Discoveries in the Field of a Body Structure

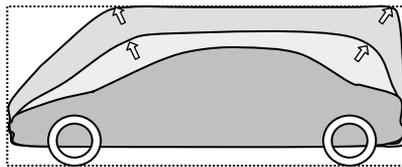
Many people think that efforts of car manufacturers, who try to make their cars light and small, are reasonable. But there are so many big and heavy vehicles surrounding us that a trip in a new and small one will always be a more dangerous thing than a trip in an old and big car. That's why constructors and designers will have to puzzle over how to save the lives and diminish damage of those people who decide to buy a tiny car.

The majority of people, though struggling for ecological culture, prefer spacious and heavy cars, so as not to rest their elbows and knees against each other or jump on every knob. They also want their car to be considerably high, in order to get inside easily and see the road over the tops of mini-cars and sport cars.

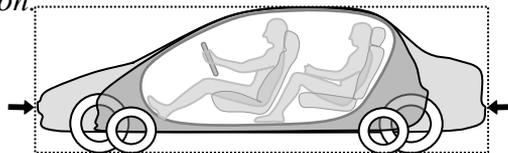
So, thinking about an ideal car, sooner or later we arrive at the conclusion that we need a small hybrid of a limousine and a jeep. Many car firms had got this idea – and such vehicles appeared.

Even earlier, two ways of transforming the body of a car had been tested and became popular:

1. *Increase of the interior volume, preserving length and width.*



2. *Decrease of weight and size of a car, preserving the size of the salon.*



Both ways are an evolution towards a more effective use of road space and materials, which were needed to build a car.

These are the examples of the use of one of the inventory methods. The essence of it is to change radically one of the

characteristics of a construction, while other characteristics remain unchanged. Thus it's possible to find new and not obvious possibilities of a construction and propose a new product to the consumer.

We may call this approach wary. It preserves succession and diminishes expenditures on modernization and risk of failures.

Are there any other reserves of space which constructors of small cars can use in their drive for space, safety and comfort?

When we get inside a car, we measure the interior space with our elbows or simply by a glance. We are also concerned about the space for the feet. Nobody wants to feel a friend's elbow with a rib or his knees with the back.

A spacious salon is also a reserve of air and a guarantee that the car windows won't get misty on a wet day before the engine is warmed up.

A comfortable salon is not only the problem of small cars. The height of one of a friend of mine, a former sportsman, is 185 cm. He once complained that a corn had appeared on his elbow. Turning the steering wheel of his *Audi 80* he had to rub his elbow against the door, but he hadn't faced such a problem while driving his old *Opel Kadett*.

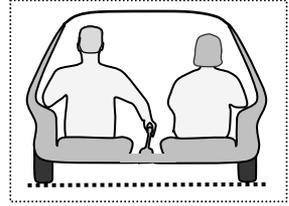
It's considerably easy to find some space for the feet at the expense of the space of the power compartment and the boot.

The advertising motto of *Volkswagen Polo* of the year 1996 was “More inside than outside!” A clear and understandable paradox! The size of the new *Polo* became greater at the expense of expanding the salon in the interests of passengers. On the other hand, there is no need to occupy much space outside. Cities are overcrowded with cars, new cars of the middle class have stopped growing lengthwise, and the new *Mazda 626* has become even shorter.

But what should we do with our elbows? They are still cramped even in the new *Polo*.

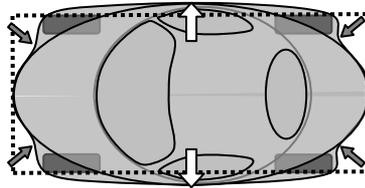
There is a reserve of space for this! Nobody forbids us to make the sides of a car salient and thus expand the space for elbows. It's possible to do it by changing the form of the

doors. They may become salient at the top and thicker and more solid at the bottom, where we need protection from a heavy blow.



If we expand the middle part of the salon, our elbows will definitely benefit from that. Our mind will have to survive the feeling of a paradox. Inside, on the level of the elbows, a small car will really be wider than the bottom or the top.

The biological style of the design of a salon is widely recognized. The rounding of the acute angles began long ago. There will be a time when we'll see cars with strange salient sides.

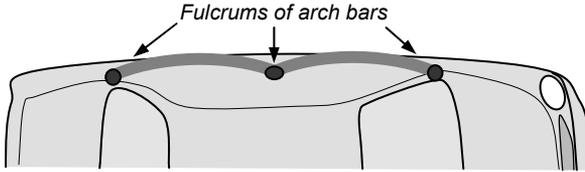


A spherical form is effective not only for expanding the interior volume. A spherical front window is the best variant for cold climate. A hardened brush of the windscreen wiper will rest against the window closer. We won't need to change the line of contact of the brush with the window; at the same time the brush won't leave a track of mud because of the loss of flexibility on a frosty day.

Assuming that a compromise is one of the fundamental properties of live nature, we should admit that our body really needs more space than it has in salons of the majority of cars. The situation may really be improved if a car takes the form of a small helicopter.

Here is one more argument in favor of "salient" doors. Such doors are more solid. A rational form of an egg's shell or a stone arch of a bridge ceiling provides them with greater solidity. The form of an arch provides an additional reserve of toughness and a possibility to transfer the impulse of a blow to the whole body. The energy of a side hit will simply move the car, but not crush the door and drive up inside the salon.

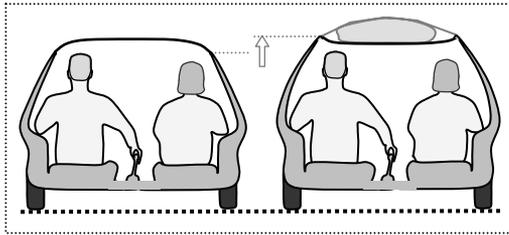
The supporters of traditional forms may not worry. An arch protective beam may be set into an ordinary car. We'll need only some space and inventiveness for reliable stops of arch bars and placement of downcast glass.



Do you feel comfortable while getting inside a small car?

We may cope with seats, which are placed low, but many drivers are sick and tired of bending their heads while getting inside. Is it possible to place the doorway higher than the top of a car?

No problem!



The top remains on its place but it has to adapt slightly. But I won't be cunning – the method inside out has been used here twice.

1. *We had to “turn the top over.”*
2. *The doors don't slide under the top, just vice versa – they embrace its ends of the top.*

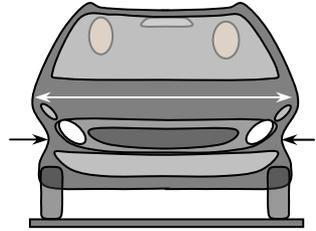
Many of you agree that rain and snow are not problems for such a top, besides placement of additional baggage on the top will become more comfortable and reliable.

Now it will be easier for a couple of old men or a married couple, when she is pregnant, to get inside or outside the car. The edge of the top, which is curved downwards, is not an obstacle anymore, that's why the seats can be placed a little bit higher.

And what about beauty? Not every person will agree to drive a car, the top of which has come down!

It's a matter of taste and art of designers! I don't know who designed a live frog, but I suspect that it was done in analogy.

The front doors, the covers of the bonnet and the front windows of many cars seem to be identical. There remained only three memorable differences: the radiator bars, the back passenger door of the salon, if it exists, and the form of the top. Sometimes it's possible to add to these innovations, headlights and other lights.

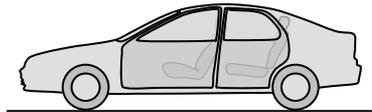


The bodies of all new cars are persistently striving for an elegant form of the half of a hen egg, which is cut lengthwise. And if a new discovery of designers is easily blended with the arch of an egg's shell – success is secured. This fact is proven not only by both *VW Beetles* and the “old man” *Porsche 911*, but by many other models as well.

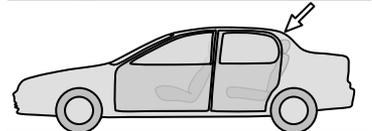
If we speak about famous car manufacturers, the form of radiator bars must be always recognizable, that's why its evolution is fully predictable.

The form of the top is striving for a soft compromise between the charm of a sphere and not very complicated convenience of a box for shoes. The sphere provides a pleasant charm, but a wide right-angled top protects you from the sun and ensures the feeling of space and home coziness.

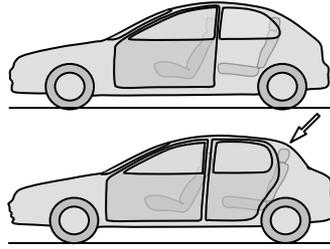
Let's consider a compact sedan. It's enough to change the form of its back door and slightly lengthen the top, and we get a small limousine.



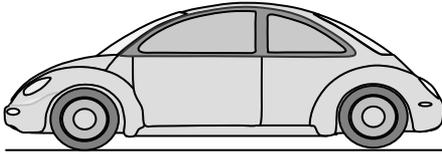
But today designers do it the other way round. They thoroughly round off spacious sedans and turn angular sport cars into something average between a remnant of a cake of soap



and a suppressed bone for your doggy-pet. “Renegades” exist only among small cars. They are eager to look more spacious, that’s why they withstand a total “rounding off.” But after they had taken care of the comfort of passengers of the second row and added a couple of doors, these cars really became more prestigious and attractive.



The feeling of style and love for the forms that were well known from childhood made its business – *Beetle 2* appeared.

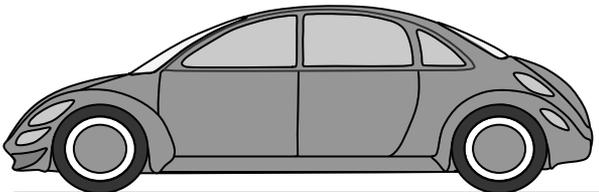


Public’s delight put aside questions about future perspectives for a long time. What would *Beetle 3* look like? Would it be smaller or become huge and turn into a limousine?

A numerous tribe of mini and micro-cars already occupies the place of the small *Beetle 1*. There is only one way left – growth!

As you know, *Beetle 2* was created on the basis of *Golf 4*. But there is another more perfect and luxurious platform – *Passat* or *Audi*. A time comes and it will become even more reliable and comfortable. Would it really be the right time for *Beetle 3* to appear?

That wouldn’t be simply a *Beetle*. That would be a limousine *Beetle Grand*. Otherwise, why did the concerned *Volkswagen* decide to buy the plants of *Rolls Royce*?



The Motor of the 21st Century

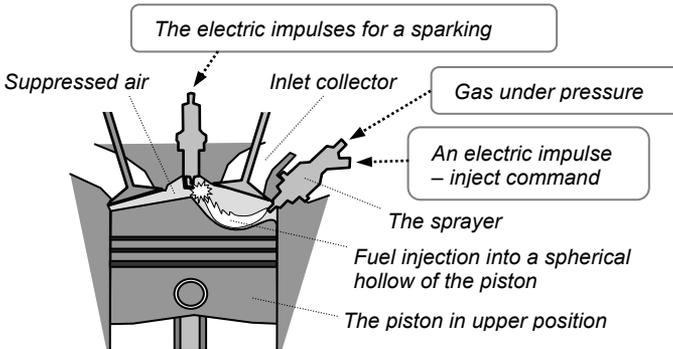
Drops of gas are mixed up with air, suppressed and ignited by an electric spark. This is the way the energy of motion of the majority of our cars is born.

But specialists are sometimes not satisfied with the fact that the mixture of air and gas is ignited earlier than necessary and burns too fast. This phenomenon is called detonation and people try to weaken it by adding chemical substances to gas and exhaust gases to fresh air, which is absorbed by the engine.

People who closely watch the state of air in cities are sometimes disappointed by the great number of dangerous substances in exhaust gases of cars. They are trying to improve the situation and equip engines with new systems of fuel injection and catalysts for burning out dangerous remnants. But the process of modernization of engines runs rather slowly without taking into account worried prognoses of ecologists. The interests of manufacturers and active users of cars appear to be stronger than competence!

Today the art of diminishing the harm of exhaust gases seems to be contradictory and even absurd. Really, why should we create an explosive substance first, then slow down its burning and at the same time be astonished that the substance doesn't totally burn out?

The understanding of this contradiction doesn't immediately come to all people. But many people tried to resolve this problem with the help of direct fuel injection into the combustion chamber at the moment of burning. This idea is at least 50 years old. But for a long time, people didn't manage to implement it effectively while dealing with gas engines. And considerably not long ago, in 1996, the *Mitsubishi* Company started a serial production of engines, in which a portion of gas was injected into the combustion chamber only after it had been filled with suppressed air. Sprayers, controlled by a computer, do it. A pump of high pressure feeds the sprayers. The same thing is done in diesel engines.



There is a hollow on the edge of the piston. The fuel is injected on the one side of the hollow and ignited on the other.

But the algorithm of a diesel engine is used only in conditions of idling and little loads. Elements and the principle of the old gas engine are still working. Sparking plugs are in the right place and the loaded engine works as an ordinary gas one. The only difference is that the fuel substance is created directly in the combustion chamber when the piston sucks in.

The problem of creating “a gas diesel” is not how to create a gas pump with high pressure, but to create a quality fuel cocktail at the right time and in the right quantity. For the work at full capacity, we need a rich and thoroughly mixed up substance of gas, air and exhaust gases. That’s why we have to send gas into the combustion chamber in time of sucking in and especially take care of creating whirlwinds that play the role of the mixer.

Evaporation of gas inside the combustion chamber gives an additional advantage. Evaporating, the gas cools the chamber off.

A new generation of European diesel engines has a fuel pump of high pressure, which pumps up the common rail with fuel. Out of the common rail, the fuel is distributed among cylinders through the system of fast-acting electromagnetic sprayer-valves.

Such an engine has more electronics but fewer mechanical parts rubbing against each other, besides it consumes less fuel.

New Japanese gas engines and European diesel engines look like twins. Their constructions on their way to the ideal

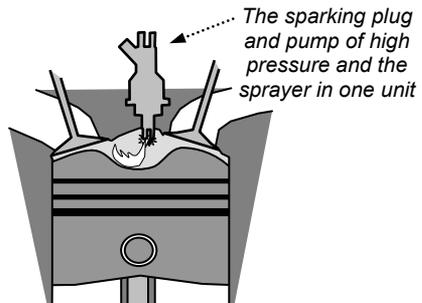
become more and more alike. Perhaps, they will become identical soon. The dream of Rudolph Diesel to burn any liquid fuel in an engine doesn't seem today rather strange.

At present four or five valves per cylinder may surprise no one. That's why the most powerful motors with a great number of revolutions will need a multi-spot direct injection from several sprayers for each cylinder.

Gas engines will become more economical not only at the expense of an accurate injection, vortex mixing up and cooling off of the combustion chamber by a gas shower. Fuel combustion and injection will occur at the same time or nearly at the same time. That's why the necessity to slow down the burning will disappear. Thanks to that, it will be possible to refuse substances, which increase the octane number. The speed of combustion will be controlled by the speed of fuel supply!

Another surprise may be revealed here. Perhaps a catalyst will be added to the gas. Substances that will contribute to a full and fast combustion but not put obstacles in the way of it. That will add power to motors and make their exhaust purer.

Perhaps, the next step towards perfection of gas engines will be rapprochement and **combination of a pump of high pressure, a sprayer and a sparking plug**. The area of a rich fuel substance and a spark will be close to each other. That will make ignition easier, a working substance poorer and that will allow economizing some more fuel. Besides, a stream of gas will cool off not only the combustion chamber but the sparking plug as well.



A temptation may appear to implement this idea into the great number of gas motors that are in operation now. We twist new plug-sprayers in an old engine, attach wires of the old ignition system and a hose from the old gas pump to them – so we get a new engine! It will use cheap gas with a low oc-

tane number and only an air filter will decorate its inlet collector.

Fuel consumption will be reduced by 1/3.

Ecologists will take a long breath!

The idea to use energy of the “old” ignition system for direct injection of fuel seems to be quite clear. Using this slightly strange method, we can modernize outdated gas motors without any laborious reconstruction.

It's not a dream. It's only a prognosis, because we already know that a new link, which is attached to the old system, is capable of improving its quality.

The point of fuel injection for the last 100 years has moved by dozens of centimeters on the inlet collector and finally appeared in the combustion chamber. Now it was the time of catalysts. It also moved towards the combustion chamber, wishing to get its portion of heat as soon as possible.

The principle of combination can present us with another surprise if we manage to put a catalyst into the combustion chamber!

People, who saw the interior composition of an old engine, for sure noticed a dense black coating on the valves and the hot side of the piston. It's remnants of substances that a catalyst fights against. Perhaps, a thin layer of platinum is capable of preserving them clean and making exhaust less toxic. Shall we first cover the inlet valves with a catalyst layer? Because it is the inlet valves that take the major part of soot, which covers the back side of a valve and resembles a conic muff.

The engine of internal combustion will for a long time remain a tank of problems and contradictions. One of such problems is rubbing. A perfect lubrication can noticeably prolong the life of an engine, but it doesn't influence fuel consumption. That's why we'll have to diminish the number of details rubbing against each other and the area of their contact. How is it possible to do without radical changes?

Belts and chains for the drive of shafts of the mechanism of gas distribution, the pump of cooling, the generator and the balancing mechanism are attached to the crankshaft of the en-

gine. It's necessary to rotate them and they also consume fuel, lubrication and life resource of the engine. Can we do without chains and belts that create additional rubbing and diminish effectiveness and safety?

An electric thermal battery is an old invention. Enthusiasts put it on a hot inlet collector and use it as an electric generator. To do it means to remove one driving belt and economize 2% of fuel.

The fact that a cool engine doesn't need cooling off seems to be obvious. So, why should we rotate the pump while starting a cool engine?

In order to remove this contradiction the pump will also need an electric drive, which will be switched on following the signal of a sensor.

The system of gas distribution has a traditional mechanical drive. That's why the possibility of a dynamic correction of the algorithm of gas distribution is definitely restricted. But such a necessity exists. It promises 10% of fuel economy and the same increase in power. It's a good cause to push valves with electromagnetic muffs. Today this idea doesn't look vanguard and such an engine will soon be created. Engineers of the Renault Company have already stated this fact.

Some patience – and the crankshaft will be free from archaic belts. If it occurs, the engine will become more economical and safer. And it will also be easier to maintain such an engine. Mechanical links will be replaced by electric wires. And it will be easier to remove, maintain or substitute the links of such an engine.

Having reached the climax of technological perfection in the middle of the 20th century the steam engine “died.” The same will happen to the engine of internal combustion. But this will happen only after people learn how to transform the energy of a small portion of cheap fuel into electric current as effectively as it is done now by huge electric power stations.

Modern electric cars are still weak, dependent and expensive. Revolutionary changes are not likely to follow, and a smooth transition from the era of “internal combustion” to full

“electrification” will be filled with hybrids – combinations of the engine of internal combustion with electric machines.

People have already managed to unite a starter and an electric generator into one mechanism. In *Citroen Xsara Dynamic* such an electric machine is placed between the gas engine and the gearbox, and its rotor plays the role of a flywheel. The electric motor-generator is powerful and perfect enough to start the engine in a fraction of a second without any noise and lead it to working conditions. It will only be enough to touch the accelerator pedal.

Such a scheme of connection of the engine of internal combustion and an electric machine didn’t cause any “wild” emotions of the informed public. But the time will come when the electric motor-generator will become strong enough to make a considerable contribution to the rotation of the wheels of the car and not only in case of emergency.

As a rule, conventional driving is followed by a relatively short period of accelerating and long intervals of uniform motion. We seldom use the full power of our motors. A quarter or half of the maximum is enough for an accurate and calm driving. We need an impressive potential only as a reserve or as a matter of pride. If we want to preserve this reserve, let it be an electric addition, which we can easily turn off and on.

Such a thing happens in modern improved hybrid power plants, but only the other way round. The engine of internal combustion helps electric motors. But soon the situation will change. A hybrid with **a common axis** for both engines will appear. Such a scheme has one significant advantage. It’s not necessary to take a huge battery of accumulators and a separate electric generator with us. A relatively small battery, which is worth 5 conventional accumulators, can carry on with the task of removing extreme loads. But that will be a special accumulator-condenser, which is capable of sustaining not only extreme loads, but receiving great current of charging.

Electric energy, used while starting the engine, will be restored during smooth driving. A car will manage to brake with

the help of the same electric machine, thus receiving 60% of energy used for acceleration.

A small gas or diesel engine will constantly work in conditions of maximum efficiency and together with an electric machine secure an energetic driving of the car that weights 1500kg with an enviable index of fuel consumption.

A significant peculiarity of such a hybrid is that both motors will “merge.” The crankshaft of the engine of internal combustion and the rotor of an electric machine will be constantly attached to one axis. Both engines will be a united power plant. They will work at the same time and together create that impressive “rotating moment,” which diesel engines are proud of.

The funniest thing in this history is that all necessary elements and technologies for effective realization of such a hybrid have existed for dozens of years! For the creation of a new system there was not enough resolution and a successful structural scheme, which could unite necessary elements in the right place and in a strict accordance with the principles of completion and minimum.

The transition to such power hybrids will become inevitable as soon as their power and price approach the power and price of a conventional gas engine with a volume of 1.6 liters. Low fuel consumption and high ecological indices will be powerful arguments in their favor.

The first viable hybrid systems have already appeared. “*Toyota Prius*” and “*Dodge Interpid ESX-2*” are equipped with economical engines of internal combustion and supplementary electric motors. Their efforts are united when it’s necessary for an energetic acceleration and mountain climbing. But these cars have to take a powerful electric generator with them. Different machines perform the functions of an electric motor and electric generator, and the price of such a set is still rather high.

The idea of a one-axis hybrid seems to be a step back. But we have to undertake such a “retreat”. We’ll need it for the creation of cheap hybrid power plants, which are capable of

smooth substitution of engines of internal combustion without any radical changes in technologies and habits of consumers.

The next step is the development of technologies of converting fuel directly into electric current. Electric motors haven't learned yet how to digest fuel, but there are some fuel cells and the technology of getting electric current from a plasma stream. But the effectiveness of such converting is still very low.

We should admit that we haven't found in the 20th century any viable technology of directly converting a small portion of cheap fuel into electric energy. Ecological problems will make us discover it in the 21st century or at least find some economical ways of filling cars with hydrogen, which is necessary for fuel cells.

Conventional engines of internal combustion can also work using hydrogen, besides their exhaust will become nearly irreproachable from the point of view of ecologists.

People have used a wheel attached to an electric motor for a long time. People invented the electric differential long ago. It's simply two electric motors powered by a source of electric energy in succession. Turning on the blocking of such a differential is simply a parallel turning on of electric motors. That's why following the principles of redistribution of resources and substitution of mechanical systems with their electric equivalents – a source of electric energy of direct conversion and 4 electric engines-wheels will substitute an expensive hybrid power plant and a powerful mechanical transmission of a four-wheel-drive car. This moment will become the beginning of the end of hybrid power plants and the transition to a fully electric drive.

How will it happen?

For real progress we need a motive, which is much stronger than a simple understanding of the fact that any resource may be exhausted, and oil is not an exception. A problem must “ripen”, become really acute. Only after this, people will want to pay for its solution the sum it is really worth. That's why we will have to burn all easily accessible oil first.

It's not a suggestion – it's a curse that we will have to walk through regardless of our will.

Only during the Ice Age, ancient people really needed fire and clothes made of animal skin. They learned how to get it only after an acute necessity to do it had appeared. Since those times, people's sagacity hasn't much improved. That's why we should expect mass production of practical cars only after the last ton of cheap oil has burnt out and the price of a trip on "dirty" internal combustion becomes greater than on "clean" electricity.

Scientists and engineers are still disconnected and occupied with their narrow professional affairs. They seldom have a possibility to listen to each other and share their best ideas, and owners of smoothly working car manufacturers are not interested in a radical reconstruction of their business. That's why quick changes are not likely to follow. The first electric vehicle is now more than 100 years old. That's why another hundred years may pass before a greater number of fully electric cars with a direct conversion of fuel into electric energy appears.

A **one-axis** hybrid has a chance of becoming the motor of the 21st century only because it doesn't demand radical changes in automobile technologies.

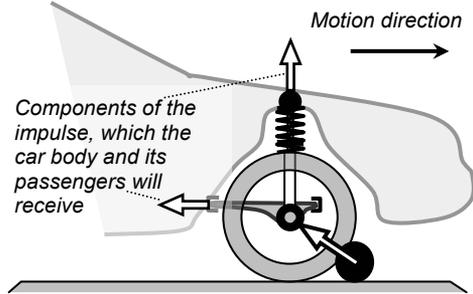
The Gloomy Side of Inertia

Every person reveals sometimes drawbacks of things and cars. And it is not always that we understand where the problem is. We see only its external display. We need to be strongly irritated in order to start seeking the true reason. An acute conflict provides a motive. A systematic approach is the key to finding out the root of a problem.

Crossing a steel pipe, which lies across the road, I felt a strong hit against the top of my car. What's the reason? Why hadn't the tires and the springs of the suspension carried out their job?

There are very few elements of the suspension system: a horizontal lever and a vertically placed spring with the shock-absorber.

There aren't any problems on an even road. The hits of a small unevenness are directed nearly vertically, towards the springs, which “swallow” the jerks, and the shock absorbers, which put the vibrations out and don't allow the car to swing.

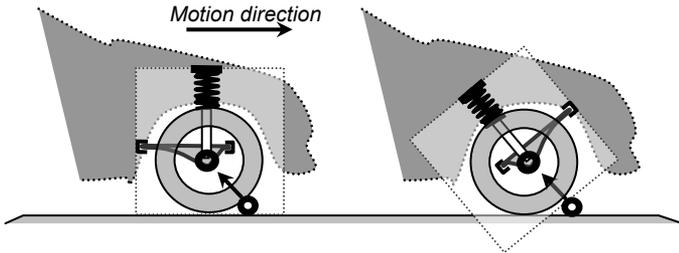


But watch out! There is a big object on the road and the speed is really fast. A strong **inclined** hit!

The tire will soften the hit, but the rest will badly influence not only the spring and the shock-absorber. The vertically placed spring and the shock absorber will “swallow” only a part of impulse components. The body of the car and the people inside will get their considerable part. Why is it so? The vertically placed spring is poorly coordinated with the inclined hit of a big object!

The vertical placement of springs is an old tradition. Once the driving axis of the car was firmly attached with the help of the cardan-joint shaft to the motor and wheels. It was attached to the body with the help of firm horizontal levers and wasn't allowed to deviate from hits, moving backward. The independent suspension didn't change this tradition. The majority of models allow their wheels to move only upward. And only some car manufacturers decided to allow the wheels of their vehicles to move slightly backward. That's why the bodies of the passengers still have to absorb part of the hit energy, which the tires and suspension springs can't cope with. But it's not only their fault!

Perhaps, the simplest solution of this problem is to turn the whole mechanism of the suspension towards the hit:



The stroke of the levers and springs will increase, but the wheels and suspension levers will suffer a smaller load. As a result of this, the hit power against the body of the car will considerably decrease.

Really, the function of a suspension is to soften hits, but not transfer them to the body or passengers. Levers must allow the wheel to retreat and gradually round an obstacle, at the same time preserving the direction of the wheel.

All constructors of motorbikes will remember that it's their method to support the front wheel of their vehicles! OK, but why do you support the rear wheels of the majority of your vehicles not the same way? Is this method suitable only for rally motorbikes?

Harley Davidson
FXDWG Dyna Wide Glide®



Harley Davidson
VRSCA V - Rod™



Rolls Royce is designed for even and smooth roads. Its constructors will hardly enjoy this idea. Amortization posts, turned towards strong hits, will cope worse with a small unevenness. But tires will definitely cope with this task. A small unevenness is their problem.

But if this idea doesn't suit Rolls Royce, it will definitely be useful for jeeps and the Paris-Dakar rally.

An even road is a possibility to drive fast, but great speed demands a harder suspension. And we'll get it free! And we'll be better protected from strong hits of large obstacles, capable of turning our car over.

There is one more paradoxical property of the “turned” suspension. An ability of the wheel to retreat while crossing an obstacle will prevent from damage not only the wheel itself. A jeep, equipped with such a suspension, will be less dangerous for the landscape. And as a reward for this “softness” towards the road unevenness we will get a noticeable **economy of fuel!**

What do we get this economy from?

We get it because **energy use for destroying the landscape will decrease!**

The only thing we are to find out is how the inclined suspension will influence the brake track.

A sharp braking will force the wheel move backward and upward. At the same time, the force of cohesion of the wheel with the surface will decrease. The danger of sliding will noticeably increase.

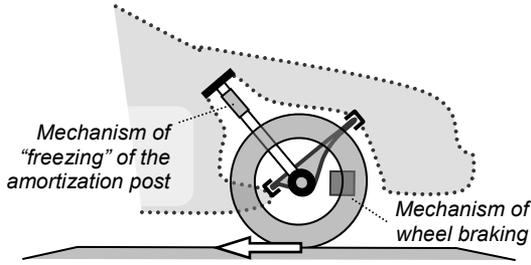
It often happens, that while resolving one problem, we create another!

Shall we renounce the “turned” suspension? Shall we find another idea, which will solve this problem?

Have you ever seen how a cat slows down, facing an abruptly appeared obstacle?

It does it with the help of the four paws, which are straight and moved forward. A hard action. No cat's softness!

We can do the same way. We'll have to immediately turn shock-absorbers into hard bars for this.



While smoothly driving and braking, the suspension remains soft. At sharp braking, the shock-absorbers will “become frozen,” thus securing a greater pressure and better cohesion with the surface.

It’s possible to calm down the skeptical people. It’s not necessary to equip the construction of the amortization post with a special brake for its “freezing.” A hydraulic valve inside the shock absorber, controlled by electricity, can solve this problem.

It’s really possible to get rid of the lack of ideas by adding one more idea!

You Want to Run – Tie Your Legs, You Want to Drive – Use the Brakes

Man’s legs are not only our best support and a means of moving. Each leg is a pendulum!

The speed of walking and running greatly depends on the frequency of free swings of our pendulums. We don’t always realize that, but while running, one of our legs, the one that is moved forward, is bent in knee. It’s an intuitive way to decrease the length of the “pendulum,” thus increasing the frequency of swings.

We can’t noticeably increase the frequency of swings only at the expense of muscle power. We need much energy for it.

Sportsmen know the best about it. To win tens and hundreds of a second has become a big problem. It's very difficult to remove the wall of natural restrictions. A powerful leg can't be very thin, and surplus of muscle tissue slows down the “pendulum” and the speed of running. The contradiction is obvious!

A Russian inventor once understood it and proposed to “bind” the legs with a flexible and resilient ribbon, so that it should help to increase the frequency of the swings of the “pendulums” and at the same time the speed of steps. It looks strange from aside, but it really helps. I tried it. The speed of steps is considerable increased without any noticeable efforts.

If you want to walk faster – bind your legs. What a paradox!

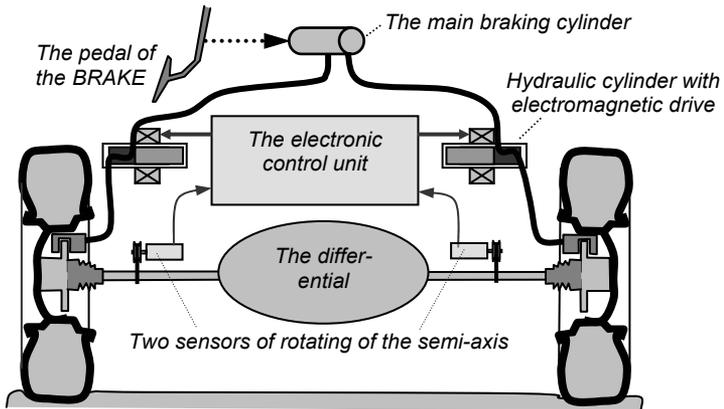
A trip to the lake near my dacha in April 1997 was “decorated” with a little adventure. One of the two driving wheels of my car got into a puddle with a slippery clayey bottom and was running idle. The second one was on the solid surface. The car remained motionless. A perfect invention was in operation – the differential!

We naively think that our cars have at least two driving wheels. But in reality, on a slippery road, only one driving wheel of simple car models remains, and this wheel is definitely trying to “slip away” from its duties and willingly “take a bath” in slippery mud or “frisk” on the icy surface. The differential and the principle of minimum resistance are to blame here. They transfer energy to the wheel, which rotates easier.

So, the only driving wheel of my car was stuck in a slippery puddle and at that moment I was dreaming to brake it, in order to pull the car out with the help of the other wheel.

It sounds strange, but the brakes can really make the car move! The brake may turn into its opposite, if it for a short period of time brakes the slipping wheel. A paradox!

I decided to improve my car and used the following scheme:



A standard braking system was equipped with two hydraulic cylinders with an electromagnetic drive. As soon as the data unit of the right semi-axis detected that the right wheel was stable, the left hydraulic cylinder started working and braked the left wheel. Or vice versa.

The whole system with data units could be put inside a shoebox, and I paid about \$50 for creating it and buying its parts. It took me only a couple of hours to compose and adjust my system because my 11-year-old daughter helped me.

We freed the air from the braking system and went to the pond. We deliberately drove into mud and the right driving wheel of my car firmly got stuck there. I turned the system on and tried to drive out. We heard a clicking sound. The right hydraulic cylinder started working. It periodically stopped the right slipping wheel. The car pushed off with its left wheel and moved forward! I drove out! The system worked!

One more attempt. Both wheels were in the mud. The car got stuck. I turned the system on and tried to move. The hydraulic cylinders were clicking one after the other. It took much effort but we drove out! Without that system I could hardly get away from slippery, clayey mud.

I sincerely considered **that** to be my invention and was full of resolution to patent it. But in February 1998, I read the detailed description of the new *Land Rover Freelander*. It had such a system! The only difference was that it served the pair

of rear wheels. My system was serving the front drive of an *Opel Corsa*.

It’s very difficult to be the first there, where a flock of giants has walked!

I have told you this history not to persuade you that efforts of “single inventors” are meaningless. Now I am really astonished that this system was born so late, because all necessary elements for it have existed for dozens of years. Since the ABS appeared, which was automatically turned off when the speed was less than 20km/h, the only missing element was the IDEA to brake the slipping wheel when the car’s speed was **0** km/h!

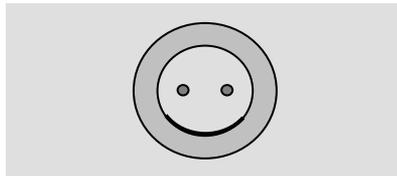
But don’t even think to set such a homemade system on your car. That was only my dacha entertainment and for any reason I didn’t even make up my mind to drive with such a system on an asphalt road. A small malfunction in this “system” could cause many unpleasant things. Such interference is simply prohibited by the road rules and regulations. I’m sure you remember about it as well!

The Theory of the Smile

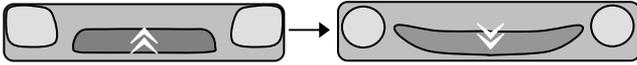
I was sitting on the sofa with my back to the wall, my little one in my arms. She was examining the wall behind my back and all of a sudden began to smile. How could a bare wall cause a smile? She was four months old, and of course I couldn’t ask her. After some time, I realized that she was looking at the round socket of the old European design with two tiny round eyes.

The girl and the socket were looking at each other and smiling!

There is no secret that each object has its own “face.” It may be gloomy or cheerful. There are machines you want to give a smile, there are others which make you flee. And that is known not only to children.

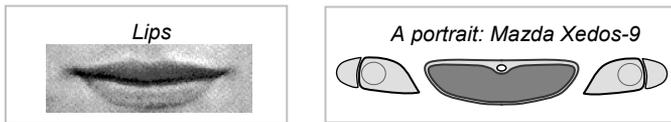


Looking at the Citroen emblem with the two V letters turned upside down I always have a desire to put them in their natural position and get the emblem rid of its inborn sadness.



Any child will easily explain that the grating of the radiator is nothing but lips and the headlights are eyes. Round headlights are a symbol of open children's eyes, and the radiator with slightly lifted corners is a smile.

What is there in common between these two pictures?



One is to be either a cynic or a man without any imagination to say: “*Nothing!*”

The emblem of the car is situated in the middle of the upper lip, at the place where there is a sucking slight swelling of a newborn child. Perhaps it is a chance coincidence, but the pleasant view of a *Xedos-9*, 1997 is convincing proof of the theory of the smile.

By the way, to decorate the car with enticing females or touching children's smiles has become a stable and effective device of the designer! Many car producers have already widely used it.

But smiles happen to be quite different. A *Mercedes* smiles like a “grown-up.” Its arrogant, hardly noticeable smile suggests solidity and superiority over all the others.

The self-satisfied “smiles” of a *Cadillac* and a *Lincoln* are decorated with tight rows of tiny teeth. And I can't really say whether it is a token of health or aggression.

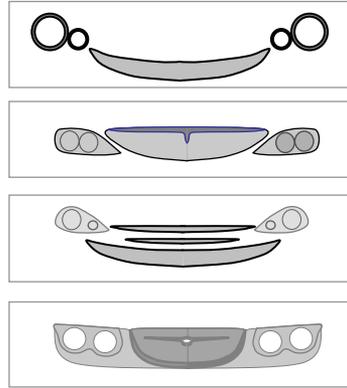
A *BMW* is decorated with two, and a *Dodge* with four energetic nostrils. In this way they demonstrate their power and determination to be the first. And the bigger and more expensive the car is, the fewer are the women's and children's

smiles. They show more self-confidence and gloomy determination.

The mini-cars are quite different. Its new generation is generously decorated with cheerful faces and frank smiles, and the spherical shapes suggest to us that we are not buying just a car but a tender thing alive which will require friendship and care.

Now I really understand why the “faces” of many new cars are so pleasant to look at.

They are smiling!



Masks for a Car

If you are lucky with numbers, the number-plate of your car coincides with the physical constant or sometimes shows the right time.

Why is it so seldom? Let it always show the right time!

It's only a joke.

We estimate the age of a person while looking at his face, and the age of a car by its design.

Sometimes people undergo plastic operations and change the form of the nose, lips or chin. That's why there is no wonder in the desire to change “the face” of your car. It's possible to make this troublesome and painful for your purse procedure easier, using masks and spectacles. Of course, not for you, but for your car!

In case of fog – an orange mask with bright sparkles and yellow glasses for headlights.

In case of collision with trees and stones – a solid and soft boxing mask for a forest trip.

In case of wedding – a festive mask with artificial flowers, fruit and a plaster cast of cake on the bonnet.

In case of dating a girlfriend – a “luxurious” mask with patterns and fashionable tattoos.

A strict mask with a black bowtie and white collar is for trips to diplomatic receptions.

Masks and stickers for disguising popular models and creating the appearance of ordinary and shabby vehicles are against hijacking.

Or, vice versa, masks for making old models look like expensive ones.

Hideous masks with scars and scratches are for trips to dangerous regions of a city, or simply for carnivals and jokes.

A mask with a pleasant smile (if it doesn’t exist) is for meeting children after school and trips to your friends.

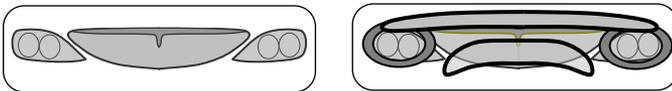
A mask with an acute slogan is for taking part in demonstrations.

Paradoxical masks with vividly improper objects, for example a model of an axe or a chain saw on the bonnet of a car, can force many drivers to make way for you. Nobody wants to deal with an idiot.

The front side of a sad light van can look more joyful:



And vice versa, a pleasant smile of a new car can disappear under the grimace of sadness and despondency:



A hijacker will take it for an unsuccessful advertisement of the telephone of trust, turn aside and find anything else to do. Let’s hope for it.

Vanguard Systems Against Hijacking

Our cars have so many movable metallic parts, plastic things and electric contacts, that sooner or later we find a malfunction or a breakage. If we fix this, something will go wrong

with another thing. I understood this and decided not to look under the “skirt” of my car any more without an acute necessity. Doing so, one feels more relaxed.

There is another problem. Cars are stolen. You have to set a signaling, which creates new problems. Frequent false alarms and malfunctions harass those “lucky men,” who wanted rest.

A new expensive set of signaling nearly burnt down my friend’s car. But it’s the electrician who installed this signaling to blame rather than the signaling itself.

The thirst for getting rid of unpleasant things leads to troubled things. And we should admit that this phenomenon reveals itself rather often. There is nothing surprising in it. It is just Murphy’s Law.

We start devising our own “super safe” anti-theft system with several slightly paradoxical slogans:

We shouldn’t hide our anti-theft system. Let it be outside!

- *A key of the...exhaust pipe! Let’s install a cork with a lock on the exhaust pipe, as on the mouth of the fuel tank. If the exhaust pipe is hermetic, the motor will cut out. But if not?*

- *A whistle on the exhaust pipe! The criminal starts the engine and people around hear a rich trill. It’s not possible to drive, but it’s difficult and too late to break the whistle. The signal about hijacking has already been transmitted!*

Let’s use the parts of the car itself, as parts of the anti-theft system:

- *A mere switch can “mix up” the signals of turning. The left for the right and vice versa. Sitting inside the car, it’s impossible to reveal this trick, but many people outside will pay attention to the hijacker.*

- *The driver’s safety cushion suddenly snaps into action and hits the hijacker’s face. If it doesn’t bring him to reason, the cushion will remain inflated. We’ll make it of super firm cloth, and it will be a great problem to get rid of it.*

The anti-theft system itself drives the hijacker out:

- *A petard with an electric fuse can frighten to death a saturated with adrenaline hijacker. But the owner of the car may also suffer if he forgets about his surprise.*

- *A small smoke box, set under the instrument panel, will be a more humane weapon. It will simply drive the hijacker out of the car.*
- *A dense sack falls down from under the instrument panel and starts inflating itself. It smoothly fills the niche for the driver's feet, pushes his knees and starts pressing the brake. The hijacker has to stop and fight against this sack. If he manages to cut the sack, the salon will be filled with pungent gas and smoke. Really, why should he spoil somebody else's property?*
- *An air balloon inside the car can press the hijacker to the top, front window, seat, door or even push him out of the car. That's a matter of your taste.*

The anti-theft system informs all people of the hijacking of a car:

- *A blinking STOP-SIGNAL and red illumination of the number-plate as a sign of hijacking.*
- *A thin stream of luminescent paint or powder will leave a perfectly noticeable track. Especially at night.*
- *It's possible to decorate the rear bumper of the car with an illuminating board with the sign "Hijacked."*
- *Everyone can attach a noticeable "tail" to his car, relying upon his taste and intuition. It's important that it is understandable and well seen to everyone except the hijacker.*

The hijacked car makes itself motionless:

- *A super firm sack is slowly inflated under the driving bridge of the car. Indistinct rustles are replaced by a strong noise and a smooth stop. The hijacker gets outside and sees that the wheels of the driving wheel don't touch the road. But not only he will notice it.*

But what shall we fill the sack with? With exhausts of your car! Because inflatable jacks are already available in shops. Our invention is to use an inflatable jack for another purpose!

A cushion inside, a cushion outside... It's all too difficult and expensive. An ordinary citizen has already spent much money on the car, and it's necessary to propose to him something absolutely free!

An imitation of malfunction:

Is it worth hijacking an obviously defective car? Is it possible to hijack something which can't drive?

Really, if smoke comes out of the power compartment and a loud crackle is heard, not every hijacker will make up his mind to drive in such a car. Those guys shun publicity of their work. Still, the price of the set of such a system against hijacking is no more than the price of an empty can.

- *A scrap of tin or a piece of belt spring must touch the ventilator of the generator. While starting the engine a persuasive noise will be enough. A piece of wire that runs through the salon will give the possibility to turn the “system” off to a person who is aware of it.*
- *One end of a piece of a steel pipe is attached to the bottom of the car, the other one is dragging on the surface. An ugly noise will make the impression of a dangerous malfunction. The hijacker doesn't know that the owner of the car attaches the scrap of a pipe to the bottom with the help of a piece of a thin steel hawser, which runs through the bottom under the seat.*

Anything else?

Now you have a strategy of search, a set of methods and even examples. A joyful company, a bit of good mood – and you can invent your own, absolutely unique and unpredicted system against hijacking! Isn't it so!

Tires are Life

Wheels of a car are its legs, but tires are not simply a foothold. It's something greater. Mental equilibrium and even life depend on them.

A good tire is a resilient and strong support. It shouldn't have any signs of plastic deformation. Such a tire is warmed only by friction against a road. Its task is not to absorb the energy of hits, but make any small unevenness smooth. All the rest is the problem of levers, springs and shock absorbers.

That's why light tires with thin sides and a high index of speed are close to the ideal. They are warmed less and the side

of such a tire doesn't rub out against the edges of the wheel disk. Minimum of interior friction and plastic deformation is the minimum of warming and risk of destruction.

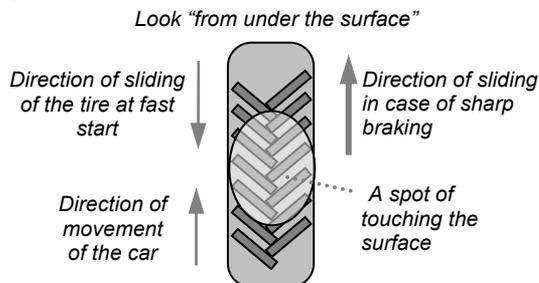
To put inside such a tire an inner tube is an awful stupidity. The wheel loses resilience, starts to resemble plasticine and begins to warm noticeably. And it not only increases fuel consumption. This is the way conditions for thermal destruction of a tire are artificially created. A false conception of safety turns out to be a loss of reliability and unjustified risk.

Constructors of tires are worried by the possibility of an abrupt break of a tire while driving at a high speed. They persistently seek anything to lean upon in case the pressure inside the tire becomes equal to zero. Reinforced with steel, the sides of the tire itself or a resilient comb, which is put inside, are proposed as such a support. Such wheels have already appeared and started to force out from cars the fifth (spare) wheel. Some people think we don't need it any more. But weight and price of the new four wheels are greater than the five old ones. That's why new tires will have to prove their effectiveness and practicality.

Choosing tires from a catalogue or by touch, we model their work in our mind and try to estimate their tenacity. We also would like to listen to an expert's point of view because our own intuition is inclined to trust simply a beautiful tracery of the tread.

We'll try to prompt some guiding lines to your intuition.

The "parquet" tracery of tread is an old tradition of tractors and trucks. It was born in the times when tractor tires were made of steel.



Such a position of combs gives the possibility to rake out mud from under the tire hoping to lean against a solid surface while starting or in case of slipping. It's justified for a tractor, which pulls a plough, and for a truck, which starts from mud. But it is not suitable for effective braking. While braking, the combs rake up mud inside the spot of touching. Such lubrication can make the car uncontrollable and will for sure increase the braking track. What is good for starting is bad for braking!

This drawback is partially removed by the tracery, which rakes up mud inside the spot of touching with one side and rakes it out with the other side. Tenacity while starting and braking on a “muddy” road will be approximately equal. But inclined segments and oblique furrows create the danger of side sliding along the edges of the segments!

Every driver wants his car to be solidly “glued” to the road and at the same time controlled. Tires must lean against a solid surface and not turn into skis. That's why two contradictory requirements are applied to them:

1. For a good course of steadiness and controllability, tires must be as narrow as skates in order to cut the layer of water, snow or mud seeking a solid support with an obvious intention to preserve strictly the chosen direction.

2. For the good tenacity with the surface tires must be broad and have a greater number of diametrical furrows in order to push off and brake on a slippery surface.

In practice, it's considered to be reasonable to divide these two properties. People have begun making tires for the steering axis of trucks and trailers with longitudinal furrows and combs, and driving axes are equipped with tires with polygonal segments where diametrical furrows are vividly seen.

We have to combine both requirements for the tires of cars. We got something intermediate. Longitudinal combs are in the center of the tracery of tread. Its task is to preserve direction. On the sides – diametrical segments, which ensure acceleration and braking. Diametrical furrows are the canals for water and mud, longitudinal edges are designed for preserving direction.

Smooth wheels are more preferable on a clear surface in order to have a maximum area of touching the surface and not to create additional noise by slapping against the road with the segments.

A relief tread **must exist and must not exist at the same time**. Segments of a tread must exist in order to push the car along a slippery road, and they must not exist on clear asphalt so as not to create noise and weaken tenacity with the surface.

Obvious contradictions!

People try to get rid of noise by a simple method. Segments are placed neither across nor in a row. They are arranged in as the same way as parquet or bricks are laid. The support is smoothly transferred from the middle of some segments to the edges of others, that's why our ear can't distinguish separate slaps.

If there are a lot of segments, there are a lot of sharp edges as well, which improve acceleration and braking. If there are too many segments, the tread will look like velvet. Production of such tires will turn out to be too expensive and wear and tear – too fast. We have to seek a compromise and choose the thickness and solidity of each of its “hair,” which won't force them to bend but “pierce” the layer of mud. There should be a great number of them for good tenacity and not too many in order to lighten the production of such a tire. So, there should be at the same time a great and a small number of them. They should be solid and soft. They should be placed along and across.

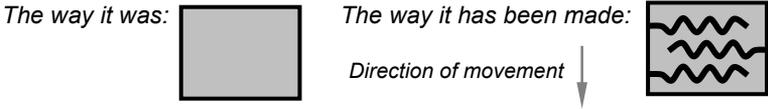
Contradictions, contradictions...

Long traditions and interests impel tire producers to support the image of their “ideal” product, which must look like more or less smooth rubber ring with an attractive and fashionable tracery, which meets the tastes of consumers and doesn't cause protests of experts.

On the other hand, manufacturers are restricted by the capabilities of their technological equipment, which was invented about a hundred years ago.

Are there any possibilities of changes in this system?

At first people had absolutely forgotten, but then invented for the second time “spiral lamellae,” which divided separate segments into figurative plates. They considerably increase the number of sharp edges, and gaps between lamellae withdraw humidity out of the area of contact.

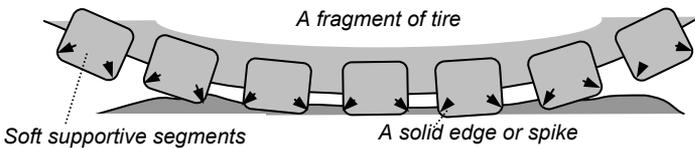


The force of tenacity with smooth ice has been increased by 30%.

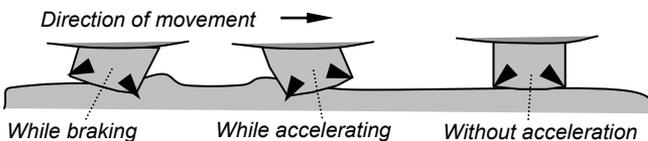
Is it possible to find anything else new?

Let’s make spikes and sharp edges work only in case a wheel pushes off or brakes. Let’s make spikes disappear when a wheel is simply rolling along the road. We need something for this, which looks like cat’s claws that are moved forward only in case they have some work to do.

In reality it happens so. Edges of segments of a tread perform the role of claws. But these “claws” are too soft and erased fast. It’s desirable to make them more solid and firm than the body of a segment. In this case, they will be preserved and sharpen themselves while the tire is exposed to wear and tear.



The basis of a segment must be soft enough to let the segment slightly turn and set outside a solid and sharp edge.



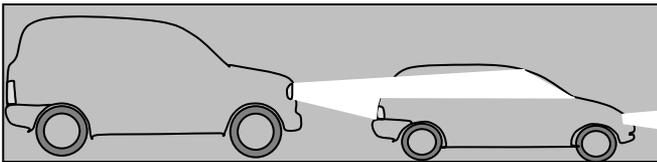
Sharp edges and spikes exist only when they are needed, and they disappear when there is no work for them.

If tire producers set such a task before them, they will carry it out with the help of steel mountings or a more solid sort of rubber on vertical walls of segments and lamellae. Nobody will forbid them to cast two treads, installed into each other and made of two sorts of rubber, on the surface of a tire. The only goal of such innovation will be to get many sharp and solid edges and preserve their effectiveness until a complete wear and tear of a tire.

Such tires are likely to appear within a short period of time. It will be the best tires for slippery roads at the beginning of the 21st century!

Light at the End of the Tunnel

The majority of cars have a relatively small size and height. Their drivers often suffer from one “inevitable” unpleasant thing. The light of headlights of a truck or a jeep that drives behind will always be directed straight at the back of the head. Part of the light will get into the eyes. Not very pleasant and rather dangerous!



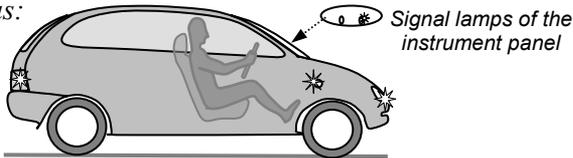
To make owners of jeeps and trucks place headlights lower than the windows of other cars is a hopeless thing. The use of colored or “clever” windows that weaken useless light seems to be more perspective.

Perhaps, arbiters have already noticed this problem. In 10 years some changes will occur and a new standard of “light” safety will be born. But today to dream about solving this problem is both boring and useless. To guess what will be tomorrow is far more interesting.

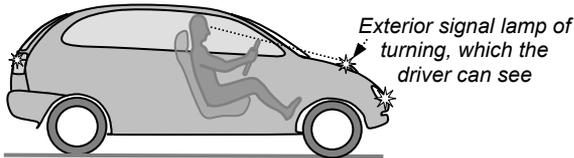
Sometimes I am confused by the fact that I don't see over-all and brake lights of my car. I can check the huge correct switching on of a turning signal only by having a look at the instrument panel. You may agree that it distracted the driver's attention. It's far better simply to see the lights of turning at the edge of your own bonnet. There is nothing difficult or strange in it. The headlights are simply slightly lifted up! Let all people who are interested in it see them.

If it is so, we may remove two lamps from the instrument panel and additional lights from the sides of the car. 4 lamps instead of 8 will remain for indicating turning.

The way it was:



The way many (or all) cars will look like:



It is just enough to slightly put up the overall lights and signals of turning – and the number of grateful spectators will increase! Your own pointers of turning will appear in the field of vision of the driver and their signal lamps on the instrument panel will disappear because of their uselessness!

Just imagine that you are driving along a multi-line highway in a dense stream and want to reform to the left line. But it's occupied by another car. In this case you'll be happy to see the signal of turning on the left side of its bonnet. You won't have to brake; you'll carry out this maneuver together.

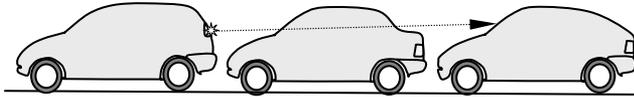
The stop-signal is also an object of creation. A lot of new places have been found for it. The tendency is vivid. The stop-signal is inevitably getting higher! It even gets inside the salon and the driver can see it with the help of the mirror. And that's

fine. Everyone will agree to have additional information about the work of their own stop-signals and brakes.

Where is the best place for the stop signal?

In order to prevent tumbling down while emergency braking, your stop signal must be in the field of vision of the driver of a high truck and the driver of a tiny car with small capacity, of those who are near and of those who are far behind.

This idea has already started to force its way. The most experienced manufacturers have been placing an additional stop signal in the rear window. Such a signal is capable of “piercing” several cars. Drivers who are far behind now have a possibility to react immediately, without a chain of inevitable delays.



A stop signal behind the rear window or on the edge of the top is a useful innovation. Can we add anything else? What's the next step? Is it possible to place signals even higher?

Is it possible to construct lighting masts on the top of a car?

Many people may think it's an irrelevant innovation. That's why we'll have to resort to cunning and use the elements of the construction that we already have.

For example, sledge runners for fixing the baggage! It's also possible to decorate their rear butt ends with stop signals. I think, somebody has already done it.

But there is an absolutely new direction – to turn the whole rear door of the car or the cover of the boot into an entire light. It's absolutely relevant, if it's possible to make this door (or the cover of the boot) entirely of glass or plastic. You may agree that everyone wants to see an object itself, but not only its edges, marked with extremely bright lights. In darkness, it's far easier to estimate the distance to a moderately lighted big object than simply a pair of bright lights. Besides, there are

even fewer chances of “overlooking” the stop signal, the size of which is equal to the size of a dinner table.

It sounds strange, but I’m interested to know when exactly the guy that follows me brakes. I’m really interested to know that. It may influence my maneuver. That’s why we need to place a stop signal not only at the back of our car. A small signal should be placed at the front in the center! It will at least calm down the people, who see it through the mirror of rear view.

Driving in a dense stream with a strain expectation of an unpleasant surprise is a tiresome occupation. And it’s not the “rotating the pedals” that tires you but the misunderstanding of what the guy in front of you is doing or going to do. We’ll be glad to know, which gear he has switched on and how strong he is pressing the accelerator. And nothing else. No interference with personal life. Simply some additional lamps and we are quite OK! If we add them, your neighbors in a dense car stream will become well predicted.

The laser has stopped being an exotic toy only for physicists and military men. Construction workers, school teachers and their pupils are already using it. People who don’t feel confidence while driving will also need a laser. Really, we want to know for sure, how right our car is getting inside a narrow gap, through which we are going to “slip.” That’s why two laser beams on both sides of our “ship” will exactly point its overall dimensions against the background of the road and obstacles. Fast driving with a laser sight can really become more accurate and less dangerous! If military men use it to kill, we use laser to survive!

An automobile horn is the scream of a driver filled with indignation. It’s the way the majority of people interpret it. Somewhere on our planet, it’s extremely dangerous to sound one’s horn. It may be interpreted as a terrible offence.

Don’t despair. Changes will come soon. There are already cars that warn pedestrians with the phrase, “Beware, rear gear!” The voice is turned on together with the lights of rear drive. But we should equip with additional sources of sound

not only the rear part of the car. We'll only benefit if our horn, apart from the banal scream, starts pronouncing a couple of words. For example: "Sorry" or "Thanks."

Somebody has made way for you, but apart from a smile or an indefinite hand gesture, we can't express our gratitude. But it's difficult to show a smile on the back of your head and express gratitude with your hands being busy. That's why we need a button, which turns on the sound or the inscription with the word "THANKS."

You have made a mistake and ready to apologize, press the button with the word "Sorry." Indefinite gestures can really be replaced with intelligible human speech!

An unpleasant thing has happened! Two cars have collided, and the road inspector racks his brains: who is right, who is guilty? Sometimes it's a difficult task, because a guilty driver is not always inclined to tell the truth, and witnesses may be mistaken. What should be done?

A "black box" will solve the problem. Experts say so. Sorry, but the price of this "treasure" can be compared with the price of a car. It's a dispensable luxury! Can we solve this problem with the help of other means?

To find out "who is right" is far easier if we exactly define the place of collision and the placement of the cars at the moment of hit. It's also desirable to know the force of the hit, because it indicates the speed.

On the other hand, we should try to minimize the task and totally move away from the charm of a traditional "black box," filled with a magnetic tape and crystals of silicon. We can only ask how we should mark the place of the hit and the placement of the cars at the moment of the hit, because it's possible to do it not only on the surface of a magnetic tape. It's possible to do it on the road itself, on its surface! And not only with the help of splinters of car windows!

If we put the task this way, we already have 80% of its solution. How should we mark the hit? Of course, with the help of the paint, which is squeezed out of the bumper! Because it's possible to hide easily a plastic syringe with paint inside the

bumper. A hit – and a tight stream splashes down, marking the trajectory of movement and indicating the force of the hit! The only thing we have to do is to define the place of installing syringe witnesses and the color of paint for front and rear bumpers. We will also have to decide where and how tanks with paint should be placed in doors and sides for registering side hits.

It seems that the problem of registering the point of hit has been solved. But what should be done with registering the position of the car body and direction of the car movement? We’ll have to lay a pipe with paint along the perimeter of car. A hit – and the paint splashes on the ground out of all the four angles, thus indicating the position of the body at the moment of the hit.

But it’s not necessary to do even this. It’s possible to make a tank with paint oblong and equip it with two nozzles. Two marks are enough to estimate the position of the car body at the moment of the hit.

So, some imagination and several plastic syringes with paint can definitely replace a complex and expensive “black box.” But, one thing doesn’t interfere with the other, because the electronic filling of a car is constantly developing. It’s not a remote future, when your own car fines you for speeding and wrong parking. And it won’t be difficult for it to memorize all that has preceded the car crash, including the chemical composition of your exhale and moisture of your palms.

Beware, cars are getting cleverer!

The Road to the Year 2022

To miss the necessary turn is a disappointing mistake. There is nothing to worry about if it takes you ten minutes to correct it. But while correcting your mistake, you may get into a traffic jam or lose your way – and such punishment will deprive you of some hours. But nothing can be done – you couldn’t discern the sign behind a bus or simply missed it.

Such unpleasant things on an unknown road and in an unknown city are inevitable.

What should be done to exclude such mistakes?

Navigational systems depicting the road map and the position of a car against its background are standard solutions for this problem. But we can't say that this pleasure is cheap. Can we find anything simpler?

Let's start with seeking systems, which solve such tasks. We may easily remember that a cash desk in a supermarket reads the stroke code and "recollects" the name and price of the product. We also know that a laser beam slides along the surface of a compact disk, reading the necessary information, which is also encoded with the help of tiny strokes.

We can act the same way. A stroke code on a road! A not a very expensive electronic device will read it which resembles a pager and is attached to the front window inside the salon. The device will look forward, at the surface of a road, or a little bit aside, at special striped posters, which are installed along the road. It will read and depict them on its indicator so that we can understand it. But the most important thing is that such a device will warn you about approaching the necessary turn by a sound similar to an alarm clock signal or by a distinctive speech. Because you have loaded into its memory necessary names in advance!

No, you won't type on a keyboard a long list of towns and villages, which you are going to pass by. You will simply take the device into your hands and pass its "clever" and sensible beak over the map of automobile roads, thus indicating your route. The device will read and memorize the key words, marked on the map with the help of the same stroke or magnetic code, INDEPENDENTLY. While driving, your pocket navigator will simply compare the read inscriptions with its data base and prompt the direction of turns, traffic line or even better speed in order not to be late for dinner.

It's not a plot of a fantastic movie. It's a draft project of a cheap navigational system, which even hitchhikers can afford to buy! You will also agree to pay \$100 for the thing that cost

other people thousands of dollars and looked like something expensive with a screen that people don't have any time to look at!

It's not difficult to compare a car that is running on a high-way with a reading magnetic head. And it's not only a metaphor; it's a direction of real researches. Some cars, controlled by computer, are already running on high-way #15 to the north of San Diego. They are guided by magnetic marks that are hidden under the surface of the road. If the system of automatic movement is on, the driver may easily have a rest. The computer will control the car!

Today nobody even thinks to control the movement of the head of a computer magnetic disk manually in order to find the necessary recording. But a car without a driver still looks strange. Many people think that automatic movement is a thing of a remote future. It hasn't been decided yet what the main reference point of such cars will be. Pieces of magnet, pressed into asphalt, a continuous tape (with magnetic or stroke code) attached to the road surface or a clever system of artificial sight with a laser range finder.

Something that is already written deeply pressed into asphalt or set high above our heads is difficult to correct. There's no possibility of quick changing of inscriptions. Nobody is likely to immortalize a traffic jam that expects us far ahead with long-term warning posters.

Can we invent anything more efficient?

Reading a stroke code on the surface of labels is registration of light/dark changing. It means that it's possible to transmit a stroke code as a beacon signal. Nothing difficult. A simple post with a simple road sign and a small beacon close to it. This beacon radiates the code of the road sign towards the cars which this sign is designed for.

Attention, here is a paradox! The road sign will appear inside the car! The light signal will be read by the car itself and depicted on the instrument panel! But it's a matter of the future. For the beginning, we'll have to admire road signs, de-

picted on the screens of cheap devices, which are bought in an automobile shop as supplementary equipment.

Apart from information about road signs, our new small navigator will manage to receive the encoded sound. We will manage to listen to local news and police warnings exactly in the place where it's really urgent. Besides, on our driving trip, we may need food and some place to stay. That's why we won't renounce some "fresh" local advertisement, which is good because it invites you to the place you are expected. Here and now!

And not only do we need a beacon signal from a road sign or traffic lights, but our car as well in order to choose the best speed. This information may also be useful for the braking system or denote an invitation to drive faster on a dry and even road. Because a "clever" road will know its present condition!

So, nothing difficult. From the stroke code on a beer can, we have smoothly come to the idea of a new navigational system, which can work without expensive space satellites and sophisticated navigational equipment. This equipment perfectly suits planes and ships, but not cheap cars with small capacity and bicycles.

The new navigational system will turn out to be useless in deserts, but on busy roads it will surely prove to be effective. Unlike a driver, it will see all road signs (including the red signal of traffic lights) and even prompt the best speed and traffic line to the driver. The price of this system for each user will hardly be greater than the price of a pager. And poor color-blind persons will finally get the right to drive a car in the place where they are strictly forbidden to use such a pleasure.

What will be next?

Cars will learn to read road signs and take a part of control "in their hands." Gradually they will manage to work without "stupid" drivers who are inclined to violate the road rules and regulations. And we already know what it will start with!

What will a road look like?

Thin tapes of different color will be attached to its surface. It won't be only road marking for drivers – it will be neurons of the road itself! They will be sensible and will escort each car, prompting the best speed and traffic line to it. Wires, sensors and grains of silicon intellect will be installed in them. They will ask questions and answer the questions of drivers and their cars. For example, how long and with what speed has the last car passed by?

It's sad, but a “clever” road will inform the police of our actions. Perhaps, it's not so bad if we take into account car crashes, because the road will feel with its “skin” damages, foreign objects, puddles of water and a crust of ice. “Having become cleverer” it will manage to prevent a lot of terrifying car crashes. It will really become safer!

A fantasy? Nothing of the kind. The market of microcircuits is overfilled and needs a new capacious sphere. The road will become a new consumer. Micro diagrams will literally pave the road. The road will obtain memory and “intellect.” Little by little it will turn into a careful guide for drivers and their cars, or into a “Big Brother,” whose only task is to watch you and pull you up.

5. *How to Convert Possibility into Money*

A Cheerful Story of a Plastic Bottle

Transparent and light plastic bottles are a wonderful example of an almost ideal product. They seem not to exist at all, but they do exist. A bottle weighing 60 grams can hold 2000 grams of liquid. The ratio is **1:33** – a seldom case of a great advancement to the *IDEAL*! After all, glass bottles have only a **1:1** ratio or something like that.

One evening I had a telephone call. It was an old friend of mine. During the last 10 years when we had not kept in touch, he had risen to impressive affluence in the oil business. We met in his posh office in the city center surrounded by a double ring of guards. The marble stairway and the attentive and polite staff impressed me greatly.

We were looking at each other across the large writing table, remembering our old common friends and smiling at each other. Indeed, it is so pleasant to see a handsome and talented man at the steering wheel of the ship he has built himself!

He wanted to be useful to people, and so he went into manufacturing toilet paper and plastic bottles. The bottles were sold to another company which filled them with soft fizzy drinks.

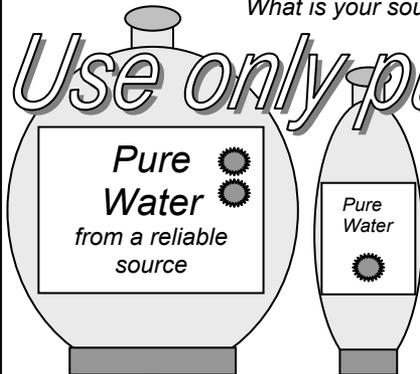
I told him I was writing a book about the principles of survival, also in business, and that I was looking for vivid and funny examples. He said that a book was a good thing, but the company needed ideas about where to invest in this country with its unpredictable political situation and laws passed in September, published in December and made operative from January the same year.

I saw the essence of my task in finding a way to invest a relatively small sum with a smashing result. It was a marvelous chance to prove whether my experience and ideas can help with problems of this kind.

A week later we met again. I placed three sheets of paper with illustrations and explanations on his table. It was a brief presentation of three commercial ideas. Here they are:

Do you drink pure water?
What water do you use for tea and coffee?
What is your soup made of?

Use only pure water



- Drinking water
- Soft water for tea
- A little mineralized water for delicious coffee

“A reliable source of water” is certainly the city water supply. “High purity” is achieved with a powerful filter which can be made by my friend from the chemical department of the University.

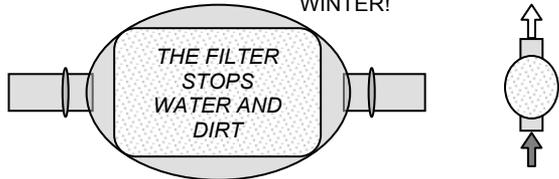
So, the filter and the bottle make the system **complete** and, consequently, **more efficient**. Instead of an empty bottle we obtain a product which is useful and ready for use. Stored pure water!

At that time in our city, they did not sell any locally bottled non-carbonated water which could also be used for cooking. So the idea was quite fresh.

The second idea was (and continues to be) completely original:

A NEW WAY TO IMPROVE THE HEALTH OF YOUR CAR IS TO USE A CRANKCASE GAS FILTER

THE FILTER WHICH COSTS ONLY 4.95\$ (0.95\$ production cost) WILL KEEP YOUR CARBURETTOR CLEAN AND MAKE THE ENGINE START EASIER IN WINTER!



The filter is inserted into the rubber tube of the crankcase ventilation.
The installation will take up only 3 minutes of your time.

The slogan “**improve the health of your car**” is simply a technique of **attaching a new sign**.

It is nonsense to attach a new sign to the void. In this case I had a mere coincidence. I made **this** from two plastic bottles (You can see their necks at both sides of the filter.) and used it for two years. The gas engine is now easier starting up in cold weather and does not need any warming up. It does not choke on the water condensation which is formed in the cold input collector because of the humid crankcase gas. The abrupt spurts, so common for a cold gas engine, have disappeared. The efficiency and value of the filter are evident. You only need to understand how to produce and sell it.

And what can be done about toilet paper? My friend’s idea with the label “**Ecologically clean**” proved to be quite effective. The demand exceeded their production capacity. But could we possibly find one more idea to keep in store for emergency? In case the problem of getting more demand arises again.

What features can be attractive for those who use toilet paper?

I remember my biology teacher once said with some ghoulish joy, “*The mouth is the dirtiest place of a man.*”

I learned later that the mouth and other “input” organs are much safer against infection than the “output” organs. That is why toilet paper, and not paper tissues, should be antiseptic!

So, **sterility** is an attractive property of toilet paper, and the consumer’s attention should be drawn to this.

But this is just a beginning. People who suffer temporarily or continuously from mucous membrane inflammation or even worse, hemorrhoids, will need paper saturated with some medication or anesthetic. These are new and attractive features which can turn ordinary toilet paper into a popular patented product:

Toilet paper – new quality!

Antiseptic # 1

Preventive # 2 with additives (the name of the medicine)

Medical # 3 with an additive (the name of the medicine)

Anesthetics # 4 with additives (the name of the medicine)

The Birth of a New Product

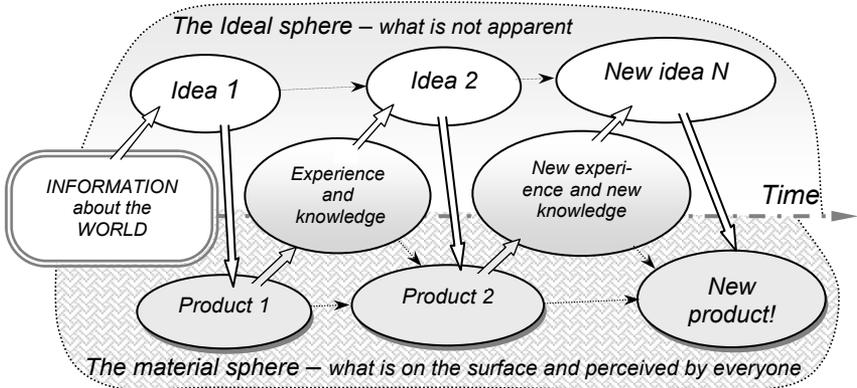
*“The highest levels of creativity include the discovery of new actual needs”*⁹ of people which they are not yet aware of. This idea came across as a thought of genius in the *USSR* of the *perestroikian* times. For many people it was a revelation to find out that the essence of engineering creativity lies not so much in the talented design of bolts and nuts as in the creation of needed and complete products which bring people joy and real benefits.

To discover a need (from the point of view of the inventor) is to be able to find a problem, a way to solve it, a new product image and the ensuing delight of the consumer! What else can be the reason for seeing the problem?

Creating a brand new product can take up years. The development of an idea is always faster than its realization, and the image of “the ideal product” behaves like a mirage. We approach it, and it draws back, suddenly disappears and then looms in the distance again. New facts arise, the understanding of their causes comes, and we are rewarded with a new ideal!

The product is not on sale yet, but we already know its drawbacks. But we see the business through. We sell it!

We get money and make a new and improved product. The new product gives new money. The new money rouses and brings up new ideas!



⁹ The Essentials of Engineering Creativity by Alexander Polovinkin. – Moscow, 1988.

This road is full of twists and turns snake-like but there is no other way. If someone would draw a straight line from Idea 1 to Idea N, it would simply be a lie. 99.9 percent. The one tenth of percent is left for those geniuses who can cross from one idea to another without the standard materialization cycle. But they are very few. Their ideas are almost always ahead of their time and do not agree with the social environment. These people usually lack money and power. And an idea without means and support is destined to a wretched existence or death, just like any unfinished or faulty system. However, there are some decisive fellows among the talented who refuse to join the might-have-been team. They strive to make their system finished. Either intuitively or quite consciously, they find the simplest and most reliable technique. They create a new finished product, learn how to sell and improve it simultaneously. They are delighted by the progress of their business. They feel the joy of creative work and are sure that this is the only worthwhile way of existence.

And if you decide to be like them, do not be surprised when at first you find out that to sell creation with your own hands is not easier than to create it!

To Sell a Dream

It seems impossible to guess what people dream about because they are not inclined to talk about their innermost thoughts. However, many of them simply do not know what they want. The layer of subconscious does not let the worm of rational reason, which is capable to dig and explain, penetrate inside. Therefore those who investigate the potential consumer's demands have to guess, identify and even synthesize the requirements under conditions of a slight informational famine. The advertising experts solve an inverse problem. They try by hook or by crook to persuade the customer that having bought that he, at last, will get his dream!

It is not necessary to be a genius of synthesis to draw the following conclusion. People require not only things which

satisfy their vital necessities. They also want to have things in which they can easily recognize their dream!

Financial opportunities grow like apples. And if the apple is ripe, it must fall into one’s basket. One has to get ready for it beforehand and take into consideration the natural regularity and temptations. Of course, a lucky chance can also be useful, but lawful success based on natural principles is more effective and reliable.

The main trick is to prepare the implementation of the sub-consciously ripening dream and offer a new product at the very moment the dream begins to be realized by the demand of the market!

90% of the customers’ dreams already exist as goods. To realize such dreams means to do things that are already done or probably doomed to lag behind or even failure. That is why it is necessary to lengthen one’s step. To offer something quite new and at the same time understandable and useful.

On the other hand, it is possible to “revive” and force to operate an old dream. To this end, it is necessary to coordinate the financial possibilities of the potential customers and the price of the new product. Plainly speaking, the price of the new product must be much lower than that of its magnificent prototype.



It is not for nothing that the *Ferrari 360* and *Jaguar S-Type* appear into the world. Long before sale, it was announced that they would be more accessible than their remarkable predecessors. The price is lowered but the trademark and prestige remain unchanged! That means that the number of grateful buyers will essentially increase! Many of those who only dreamed of it can realize their dream. They can buy it!

Examining the shop windows, each of us can easily distinguish between something modern and out of date. Some of us can even predict what the shop windows will look like in a year or ten years. (It goes without saying that you and I are among them.)

Many of us feel the tendency of development and will comprehend and depict without difficulty the genealogical tree of any product and its more or less perspective or deadlock branches. And of course each of us will be able to arrange a collection of teapots in a museum (in the Kettle Museum) in accordance with their steps of evolution.

Examining this amusing erection, we are sure to be amazed by the incongruity of its perfection (functionality and convenience) and the complexity and price. And the great demand of some models are in no way connected with their technological perfection.

Is that a paradox?

Only at first glance!

The tiny amusing car *Citroen 2CV* was born in 1937 on the wave of the idea of “a folk car.” The wave soon reached France.



Specialists looked at that “primitive” construction with horror calling it “*ugly duck*,” unanimously stating that “*nobody will buy that*.” Indeed, who can like a strange hybrid of a grass-mower, a hand cart and a tarpaulin folding bed? Is it possible to call *that* an automobile? Why should we step aside of the bright road which is called “*Technical progress*?”

Those were the questions of automobile specialists who knew the meaning of technical perfection! None of them could suppose that that “miracle” would be produced 42 years running beginning with after war in 1948. There were so many wishing to purchase it that the ordering was to be made 6 years in advance!

An acute demand is yet not an indication of the peak of technical perfection. It is the result of a natural and rational

desire of many people to get the necessary function for the money they possess. And while many people are still poor, success will attend those producers who will act in accordance with the following formula:

Problem number 1: *minimization.*

Problem number 2: *completeness.*

Consciously or intuitively but *Citroen 2CV* was constructed according to this formula: completeness was achieved by minimum means.

Today nobody doubts that *Citroen 2CV* is really beautiful. Because it makes good sense!

But time flies and many people become richer. Instead of beggarly rationalism, other means of evaluating quality and other criteria appear. Exterior attractiveness, comfort and safety appear on the foreground. How is it possible to please the customer now and which strategy will make it possible to get the highest profit?

Demands and possibilities go hand in hand. Having accumulated a considerable sum of money, the customer expects a qualitative leap, and in order to please him, a new approach and new strategic formula is required, one which should determine the priorities and indicate the main goal. “The Formula of Success” for goods and their sensitive producer acquires a new appearance:

Problem number 1: *new quality* in full agreement with the financial possibilities of the most perspective group of customers.

Problem number 2: *completeness.*

Problem number 3: *minimization.*

The customer is not interested in the intricate market mechanisms. He acts in his own interest and wants to get maximum quality and prestige for his money. That is why he is predictable. To take into account these circumstances and make a step towards him is just to be on the safe side without any unpleasant surprises from the side of the competitors. This simple prescription is much more effective and reliable than the expectation of a sudden “enlightenment” of the aggressive advertising campaign.

At first, possibilities are found, conditions of mass demand are created, and then an “avalanche” is organized. And if everything is done properly and the new product has obvious advantages the avalanche of demand arises by itself! It is provoked by some furious customers who are the first to recognize their dream in the new product. By their emotional way of purchasing, they attract the attention of the press. Is it necessary then to spend money on advertising?

A dashing appearance and a fascinating name — these are the two things the buyer of the car pays attention to first of all. Next are quality of the salon and the conveniences of the seats. Sometimes the customer is curious to learn what is hidden under the cowling. But is there anything new that can be hidden there? Just the motor... But the outward appearance and the furniture of the salon — gosh! That is something!

That is the way many customers reason, and that is well known to the producers. Therefore, the designers first of all draw and mold the new shape and only then the engineers charge it with its inner sense. Very few producers try to do it the other way round.

But only a new name for an old product is not enough. A mere extension of the size and power may attract quite a few. Some new change, some new indication of qualitative advance is required!

On the other hand, there is a necessity for succession. A stable and fundamental base. That is a guarantee of reliability and the possibility to understand what we deal with because we don't want to face the possible blunders of the people who elaborate a new model or to learn to drive a car anew only because the producer has installed in it an unusual gear-box.

Novelty attracts! The temptation is caused by the fact that here there is something closer to the ideal and a bit extraordinary. But for many a surplus of novelty may cause the loss of certainty and safety. Because people do not pay money for the feeling of uncertainty and worry. They do not want to face new problems and lose time to learn how to use a new wash-

ing machine only because it has some new knobs and a collection of multicolored lights.

How is it possible to solve this conflict and at the same time make a qualitative leap?

The principle of coordination answers this question. Both children and grown-ups will press the buttons of the new machine in the most improbable and dangerous sequence (Murphy's Law). Therefore a cleverly constructed machine must be able to stand such “mockery” and ingeniously guess what exactly they want to do. It must forgive all that foolishness and patiently teach its client how to use it properly and even make them cleverer. Under such circumstances there will be less ground for anxiety and complaints.

To sell a dream often means not to sell some tempting result but only a promise in the shape of a means to gain the desired goal. As it is well known, it is not health that is sold but medicine which promises better health. It is not intellect but clever books that are sold to help you become cleverer. And not delight in its pure state but a means capable to present you with some instants of delight.

Such a means should not necessarily be a mysterious medicine, a strong drug or a giddy amusement. But it may not necessarily be a material object either!

For the producer, that property of goods looks very attractive. If people are ready to part with their money for a nonmaterial product that means, from the seller's point of view, that the product is ideal, especially if it is possible to easily multiply it and transfer it over long distances, thus increasing the profit.

Any circus or booth at fairs is always meant for the vast masses of customers. They were born and acquired strength at fairs at places where there were grateful spectators capable to pay for the performance.

The trade of goods nonmaterial and material only partly increases year by year. It is not only the software and Internet publications nor the growing wave of compact discs with a wide range of informational products. It is also television,

newspapers, magazines and books. Sometimes one has an impression that the market share for such products grows faster than their quality. It looks as if a gigantic paradox is ripening. People spend more and more money for such passion but the efficiency of such investments and their own labor productivity do not increase. Computers with their magnificent abilities are used in offices as decoration or typewriters, and masterpieces of software as toys for teenagers.

This is typical not only for computers. Similar metamorphoses happen to expensive cars. The more expensive the car is the less it is used. The material implementation of the ideal turns into a lifeless relic and a subject of cult. The real efficiency of such a machine is close to zero. There is simply no place to go to by such a treasure. And there is no need to. Everything is already achieved! The ideal has turned into an idol. The effect of absurd self-sufficiency is obvious!

On the other hand, ornaments of gold and jewels came into fashion thousands of years ago, and ever since, nobody has ever tried to prove the absurdity of this tradition and its economic inefficiency.

“A deep moral satisfaction!”— that is the most significant result of such possessions!

But let it pass, the rich collectors of expensive cars and jewelry. For us it is important to stress that the tide of “non-effective investments” does not even begin to decline despite the decrease of the demand for gold and the people’s intellectual growth all over the world.

In what way is the story of collecting cars, jewelry and “dead” computers in offices and studies of aging directors connected with our topic?

All these gigabytes of memory, megahertz of calculating productivity, hundreds of horsepower and karats of diamonds promise to make people prompt, strong, influential, effective, attractive and self-assured. People are eager to get all those qualities. They are ready to pay for everything that promises such exclusive opportunities and indications of their own ex-

clusiveness. And the stronger the thirst for exclusiveness, the easier to sell new promises, drugs and symbols!

Of course, the seller is not going to remind the buyer, and the buyer himself will not try to recollect that he will hardly be able to make use even of half the promise even if he has paid for it double. The thirst to win the competition or the utmost possessions is blinding. This passion is frequently limited only by the shortage of money.

In most cases, expensive tablets do not do any harm, but they may not help either. In any case, the drugstore is not going to return the money you have paid for the tablets.

The ticket for the movie is bought. The film appears to be good for nothing, but nobody is going to pay back the money.

Thus, the money is paid and the dream remains a dream. Whose fault is it? "Well, certainly the customer's for it is he who has not made use of his chance or made a wrong choice, or misused it." That will be the seller's answer. To prove the opposite will be extremely difficult or simply impossible.

People, however wise and practical, are inclined to buy the promise, not the result. They are looking into their own inside, and not at the goods. The goods in a magic way become a magnifying glass through which they see their dream. And it is just at this very moment that they decide to buy! Talented sellers make all possible efforts to attain it. And their "victims" are as a rule enthusiastic dreamers with a well developed imagination. An experienced seller will always find a key to their soul.

However sad it may be (from the customer's point of view), but such a way of selling goods is quite legal and extremely effective. In any way this principle is interlinked with any product or service sold by means of a smile or advertisement. And if the customer is disappointed the seller looks as if not guilty: he was offering an opportunity and not a final result. The disappointed buyer might be hinted that a lost lottery ticket does not give any chance to get even the smallest part of the prize. And they will be right. But only in case the customer is able to swallow that piece of cynicism without pain. In case

he knows the rules of the “game,” has accepted them and makes use of them not only to lose.

The Ideal Product

The maximum profits today and tomorrow are not the same. Every morning the consumer wakes up with new preferences and new opportunities. And those who invest their money in ideas of tomorrow stand to win more. Tomorrow their product will be closer to both the ideals and tastes of the consumer.

A large machine made of sturdy metal guarantees a continuous fulfillment of a needed function. But most of the time, we need **only the bare result**, not its metallic guarantee. We want to move freely. We need clean clothes and tasty food, not bulky and noisy mechanisms decorated with smoking chimneys which claim to work for us. That is why eventually **the ideal machine, the ideal product and the ideal service are one and the same thing!** They are the means to materialize a need and tools for achieving one’s goal!

You will save a lot of time and money if you keep in mind not a pile of standards, projects of your employees and advertisements of your competitors, but **the ideal model of your product**.

Of course, its real material realization will be greatly “spoiled” by preconceptions of customers and limitations of modern technology.

We already know that all healthy systems and their creators’ common sense develop towards **the Ideal**. The capabilities of manufacturers and the tastes of consumers slowly drift in the same direction. That is why, knowing the history of our product and the situation in the market, we can predict its development. But it is not enough. We also have to find a painful compromise between **the Market Ideal** of today and **the Ideal machine** of tomorrow. After that, the only thing left to be done will be to prepare the product for manufacturing in due time in proper quantities and wait for success. But do not die of hunger before it comes!

If we are too ahead of the consumer’s taste, we shall lose a part of the market. If we are too late, we can lose everything. So we should choose the “optimal” point between the two “ideals.”

Suppose we produce refrigerators. Let us try to deduce what is “the Ideal fridge” in the eyes of the consumer of the beginning of the 21st century.

Come up to your fridge. Without opening the door, tell yourself what exactly can be found inside. You do not remember? That means the door of the fridge should be transparent! The “hunt” for the needed food should start before opening the door. It is not advised to let much air into a fridge!

A good supermarket, as well as a good museum, has labels with basic information about the “exhibit,” optimal storage conditions included.

Frozen fish – minus 24° C. Its salted caviar – minus 5° C.
Cheese – plus 8° C. Salami and Bismarck herring – plus 5° C.

So what? Do we need a separate fridge for each foodstuff?

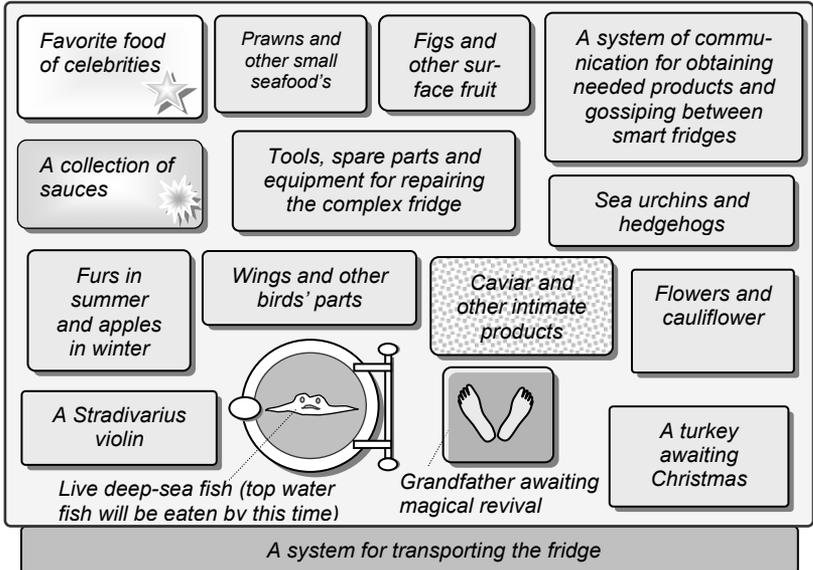
No, one fridge consisting of several chambers with their own temperature, humidity and light behind more or less transparent doors would be enough.

But how can we find out the best size and shape of each chamber?

Let us go to the administration of the supermarket where food is bought by our prospective customers. We will be more or less happily given the information about the quantity and range of the foodstuffs sold in a day or even in a year. We only have to generalize and place all our imaginary purchases into our new multi-chamber fridges. This experience will help us to find the optimal size and shape of chambers for various kinds of food supplies. This will give us the model of the “ideal” fridge of today from the point of view of the “average” consumer.

If we want to look into the future, we should know what new things will be kept in fridges and how this can influence the size of the chambers and other requirements. We shall need data from the latest congress of nutritionists and their

predictions about the diet of people in the nearest future. It would be useful to know what new products will be grown by farmers and caught by fishermen. Just a little decisiveness, and we shall finally “guess” what the ideal fridge should be like and what technological problems we will have to solve in order to produce it.



We have some creative techniques, and we shall try to use them for attaching unique features to our product.

Division. One large fridge can be turned into a set of smaller ones. Each foodstuff should have its own fridge! Each kind is sold separately. They can be put on top of each other. They can be combined into a large fridge. The buyer selects the needed minimal set depending on his taste or diet. He decides to use a new product and buys a new fridge chamber.

Combination and transference of functions. A built-in microwave generator will turn one of the chambers into a microwave oven. A switched-off chamber will become a larder. A kitchen cabinet, a food container, a pan and even a kettle can be made into fridges!

Sounds absurd? Not at all! A special semiconductor heating element will boil water first and cool it down later. You

simply have to change the direction of electric current which passes through it.

A change of material. A fridge chamber is a solid box with good insulation which is not necessarily made of metal.

So, a few simple techniques can radically change the image of a fridge and show productive directions in its development:

- a set of universal chambers with transparent doors;
- a lightweight shallow box which can be hung on the wall;
- a narrow box which can be fit into an empty hole;
- a super-reliable fridge which can be passed over to your grandchildren;
- a fridge warm on the outside for heating the kitchen;
- a super-efficient fridge which does not heat the kitchen in summer;
- a super-rational fridge which warms water and stores it.

And all this glory can be offered in one package with installation, an after sales guarantee service and “free” soul-stirring funeral of the old fridge!

If you think your idea is ripe, go ahead and put it into practice. The customer is capable of appreciating the value of this novelty in no time.

You will be lucky if your competitors do not get wind of your plans. You will have a chance to snatch a part of the market from them.

But you can also choose the opposite way. You can share your idea with your rival and listen to his ideas. You will share the costs of developing a new line of refrigerators and preserve your market without any risk. No wonder that a fridge for European cuisine will be very different from Chinese or Japanese. It will be hard to produce all the range on your own. And here lies one of the reasons for and conveniences of partnership. Trying to corner your opponent is always connected with the risk of being cornered yourself.

At last the highest ranks will reach an agreement and the designers of the partner companies producing refrigerators will finally meet. There will surely emerge “a clever head” saying that the Ideal fridge is not a transparent cupboard with many doors, but one magical door with a still life on it. You point your finger at the image of the food you need, the door opens and a packet of your favorite frozen shrimp is presented to you on a warm tray.

“Why frozen?” another “clever head” will ask. “Let them be already cooked, after all, we need not just a box with stone frozen foodstuffs, but we want a tasty and fresh meal! A huge supermarket behind a small kitchen cupboard door or just an assortment of tasty dishes! Something like a “living” cooking book! Yes! Let it be a virtual exhibition in a French or Japanese restaurant. We will go around it with the help of the Internet, “take” delicious dishes with a click of our mouse, and they will instantly appear in front of us! In our own bowl, if you wish!”

The boss will be the first to come to his senses and say indignantly, *“We produce refrigerators, not food processors! Why don’t we go back to a cold box with a door...”*

The dreamy haziness will vanish. The participants of the meeting will sober up and remember their capacities, but they will never forget the fridge which can store itself up and cook delicious meals. Now they have a new image of “the ideal fridge,” and they will hope that one day they will offer THIS to the consumer.

But here is a paradox: “the ideal fridge” which magically creates a finished product is no longer a fridge. It is something entirely different. That is why future machines will hardly have one and only one direct prototype in the past. The techniques of combining and replacing functions will come into action. The image of the ideal fridge and its main purpose will be changed. What was once a cupboard, a fridge and a microwave oven, can become one whole or...disappear. The principle of practicability (A novelty has the right to exist provided it solves more problems than creates.) will stop many unsuc-

cessful attempts and let through just the best and most natural innovations.

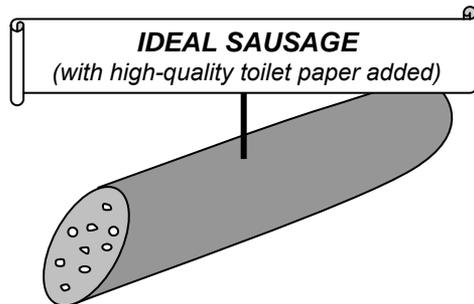
My mother had refused to buy a new fridge for 10 years only because she did not know what to do with the operating old one. If she had been offered some money for it and told it would be taken care of, she would have gladly bought a new one.

Consumers need more than goods. They need an easy way to obtain a new feature without heavy things to carry, expensive construction work, loss of time and painful parting with old and tried things.

The customer can be helped to make “the right” choice if you show in a simple and obvious way the efficiency of the new product compared to his “junk.” The comparison technique can be used by everyone and is highly effective. The problem is how to find the opportunity to show to the prospective buyer the new product as opposed to his “old junk.”

A system view of your business and a set of creative techniques will provide you both with new ideas and with a prediction of the market development. This is the basis for your sure existence in the future which must never be a source of unexpected troubles. The future can really become a proof of your foresight. Just a little decisiveness, a little attention to the actual needs of people, some imagination, and you will know exactly what your ideal product should look like. You will get a chance to be the first to offer its materialization to the consumer.

And, by the way, what should the ideal toilet paper be like? Should it exist at all and should we add it to our food, using the creative technique of *PRELIMINARY ACTION*?



It is with sadness that we conclude: every completeness has its limits! We need not only a happy end. We are more at-

tracted to a successful start and intriguing process. This is where the greatest joy lies. The joy of life!

Attractive Features of a Product

If you are a beginner, no one waits for you and your product in the market. You are faced with the long and difficult task of proving to everyone, yourself included, that your product is really worth something. Your product is only at the beginning of a long way of evolution and sudden discoveries of its faults. If you are able to live through this, go ahead.

1. **A clear-cut purpose.** A clearly put basic function with an example of use should be present on the label and in advertisements. A pleasant flavor and a lemon featured on the label are a good reason for testing your detergent by the tongue. That is why many “advanced” liquid soap producers have learned to picture spotless plates smelling of lemon, not just the fruit itself.

A clear and unambiguous idea of your product is an evident advantage. If the label explains how to use the product and its package and “war paint” make it easy to find among other goods, it has a chance to become more popular than his more efficient but “modest” competitor. So do not hope that someone will read your long work manual and guess hidden pluses of your creation. The consumer has no time for that.

2. **Unique characteristics.** You should have a good reason to demand the customer’s attention and his interest to your product in particular. Add an attractive feature! Endow it with a unique characteristic. Let the toothbrush that you produce demonstrate a set of principles or techniques: ADAPTATION – FUNCTIONS COMBINATION – ABSORPTION. Let the toothbrush itself create necessary conditions for brushing teeth. After all, it is easy to outfit it with a special container for cleaning gel. It can be fitted inside the brush or screwed onto the other end.

It is tempting to get a range of fruit aromas or consistent treatment for teeth and gums in one package with your

toothbrush. Or a daily set: for better sleep with a sedative or simply with a smell especially pleasant for the person you love. And for brushing your teeth in the morning with a pepper-upper and long-lasting defense for the whole day. Finally, let the brush itself analyze the surface of your teeth, the composition of your saliva and let out necessary substances, also independently. A new unique feature of your product is the best reason to attract public attention and create a demand.

3. **Self-sufficiency and easy use.** If people spend money on buying your product, they should not waste too much time and effort on studying, installing and servicing it. A strip cartoon of 3 - 5 pictures with clear and recognizable elements can be a wonderful replacement for a voluminous manual in 10 languages.

Supply your product with a “free” addition useful for the consumer. Paint goes well with a brush or a cheap foam rubber, roller plus rubber gloves. A detergent can be accompanied by a sponge or a brush. A tub of toothpaste can be combined with a tooth brush or vice versa. It is not only a present or “free” addition that the consumer needs. He needs a complete and concerted system!

4. **Friendliness and safety.** If you don’t know how to make your product look attractive and friendly and provide it with a convenient and safe construction, visit a toy shop. There you will find the best shape for your vacuum cleaner and new ideas for your other products.

There is an inventor in Russia who outfitted his car with a large rubber bumper and now is not afraid of any collisions at the speed of 20 km per hour. We also have the right to demand that cars stop crashing our knee joints and hips with their hard prows, angular bonnets and terrible spoilers. After all, why not place one safety cushion outside? In front of the bumper or instead. Let the unhappy guy fly to the edge of the road with a better chance of survival. A simple sheet of foam plastic on the bonnet of a truck can reduce traumatism and save the life of that unlucky person who happened to be on the road at the

wrong moment. Many drivers will agree to that, because they and their children sometimes walk too.

5. **An attractive design.** Your product should have a talented realization! It certainly pays to trust professional designers. They have accumulated experience which consists of a set of standard techniques. They will save you from childhood diseases and help you avoid rough mistakes, but they will hardly provide you with a brand new idea. Find it yourself! A student of the arts department, your merry friend or your own child will offer you as many ideas free or for 1/100 the price. They will be raw and unshaven, but they will be numerous. And it is highly probable that you will find what you need. Only then you will need a professional designer. But if he easily persuades you to abandon your idea, you will have to look for a new one.

Good design does not bear any compromise. It should stress the main function of a product or, vice versa, mask it in a curious way, but not interfere with it. Actually, if you keep the main function of the product in mind, it is easy to get rid of all excessive features, also of excessive quality which you have to pay for and then give to the consumer for free.

6. **A full range of events.** A good manufacturer and an prestige store offers only very good things. They have style and good taste!

Where do these come from?

It is simply work done carefully. They put themselves in the consumer's shoes and try to use the products they offer. At least in their imagination. This is modeling, and the more precise your model and your experiment are, the more positive and negative features you can find.

Positive features are for buyers. Drawbacks are for the suppliers.

You take a beautiful ceramic cup in your hands and find its handle very convenient. You like its shape. You touch its edge with your lips and feel that it is rough. It will accumulate dirt. No, we won't buy this!

A transparent glass cup gladdens our heart with its glitter and an even upper edge which does not scratch our lips. We take it in our hands and find a sharp seam on the inside of its handle. It can be sawed off with a nail file, but why should I do it myself?

In sunny weather, I see a large bright spot on the front window of my car which evidently reduces the view. This is a reflection of the top of the gauge board. Had I noticed this fault before, I would have bought a different car where the shape and material of the board are more suitable.

My friend, looking at the glass from his car sees the reflection of the flat board behind the back of the rear seat. The upholstery is too light!

These are only trifles. But if the consumer is constantly faced with them, his irritation accumulates. That is why we do not feel thankful towards the guys who made THIS THING and sold it to us; we feel no gratefulness. They should have seen these drawbacks themselves and removed them.

The most reliable data about the product belong only to the consumer. The manufacturer simply must find a way to get them. It is not an easy job to gather a full range of all possible unpleasant events and convey them to designers in a subtle way! This information is coded in the consumers' emotions. The reasons for their inconvenience are not clearly seen by everyone. But this information is essential for the manufacturer. It is not a simple list of complaints. It is a draft of a program for better quality!

7. **Advertising.** No one in the whole world likes TV advertisements but small children. Do not spoil their childhood. Do not show rubbish to them, and do not speak about minor things. Speak about the main function; show some exciting details, and do this at an unusual angle. It is easy to do if you study the object and its environment.

If we deal with a large Jeep, we do not have to show it in whole at all. Everyone knows what it looks like. It is much more interesting to see it in action. Are the people inside comfortable and what do they feel?

You can show one wheel gracefully running over a large and beautiful boulder and a pleased grin of the driver who feels only a light bump from below. You have shown the main function of the product and the emotions it arouses. Minimalism plus completeness!

Symbols of confidence and reliability should always go alongside your product. The principle of a good advertisement is: *DELIGHT* + the product. Delight comes first, the product second.

Hint at the fact that your product is the key to self-confidence, comfort or any other pleasant things, and prove it laconically with the help of a simple example.

Your product should not be surrounded by emptiness. Create a feeling of life around it. Let people remember it in good moments of life, when they have enough money.

For novel products, the comparison technique is also very useful. You can show how the scene looks without your product and how it is magically transformed if you use this work of marvel.

So, where is the key to a good advertisement? New information about an old product? A well-timed reminder? A new angle of view and unfamiliar sensations?

The fact that advertising stimulates and even creates demand is evident. But advertising can also be seen as a model of the system where the advertised product plays the central part. If this model is precise and accurate, it is taken for an authentic fact. If it is also tempting, advertising achieves its purpose and greatly increases the demand.

It is wonderful when you have reasonable arguments. If there are none, you have to appeal to feelings and the subconscious. The principle is quite simple. We like and need familiar and understandable things. We fear the unknown. We do not trust it.

A thin borderline between the familiar and the intriguing new is a temptation which can mesmerize people. It attracts everyone.

To picture a sex culmination with the help of fireworks or an egg broken over a heated pan are expressive tricks which use the most popular artistic super-technique, a metaphor!

Why so much joy and delight? Well, it is your own product! But showing mere delight is not enough. You should also show what goes before this, a moment of expectation of this bliss or inner peace. Can it also be connected with your product?

A crack of a ripe water melon and its juicy core?

A gift box in a child's hands?

A soft landing of an aircraft?

A happy elderly couple?

A school of swift fish?

A jumping antelope?

A clean wet carrot?

A cloudless face?

An inviting smile?

Live prawns?

One detailed article or a fast succession of shots with easily recognizable events! And those who see THIS should find an unexpected or even paradoxical connection with your product. Otherwise, who will have it on his mind but yourself?

8. **Hidden chords of the consumer's soul.** You have managed to buy a basement on Bread Street, and you want to turn it into a restaurant. But how can you attract your clientele if this damp place is entered down a steep narrow stairway, and you have neither the money nor the right to change it radically.

How can you make the better of these inconveniences?

A sign "Golden mine" or "Diamond Pit" on a wooden extension with a cast-iron wheel on the wall can justify a "risky" climb down. But what is attractive for enterprising men is totally wrong for delicate women. So, names like "Wine Cellar" or "Cheese Collection" can prove more effective.

Tasty food and drinks are the main purpose of a restaurant, but a romantic setting is also not of the least importance. That is why a sign "Yellow Submarine" can be an attractive feature

in itself. In addition, it does not foist any particular diet or cuisine. The very name will make you arrange a sort of deck superstructure and regularly play some old and familiar tunes. The money spent on yellow paint can be compensated by ventilation. The submarine is old, and it makes the stuffy atmosphere and fishy scent logical. However, a wish to keep your customers will sooner or later lead you to make the air sufficiently dry and fresh. And the name will also explain the thick ventilation tubes on the walls and ceiling. What is unacceptable for a usual restaurant is quite fitting for a submarine interior!

This is just an example of how to combine two of the techniques: to add a characteristic and to finish the system under the guidance of an attractive feature!

9. **A sign of quality.** Have you ever noticed how attractive a sport jacket becomes if you adorn it with smooth “golden” buttons with a delicate pattern and letters reminding of antique metal signets? Have you seen how an ordinary cotton T-shirt is transformed if it has a small and neat silk embroidery? Have you ever paid attention at how the trust for the product grows if its label is decorated with a small holograph? Do you know what sellers of secondhand cars do in the first place? They repair broken emblems!

Once I witnessed a curious scene. A young woman, before getting into her Mercedes, took the famous logo out of her bag and attached it to the car bonnet. I smiled and asked her, “Does the engine work without the emblem?” She was not offended and replied almost seriously that with it the engine works much better!

Such small symbols and “quality islands” have a strange influence on us. They give us confidence even when we are not aware of their story. We see them as a sign of a well-done job. They really give products a better look and arouse trust and respect for the manufacturer. If he has time to pay attention to such trifles, he must produce things of really high quality!

Paradoxical Properties of Advertising

Quite often, the producer faces the fact that his novel product has no demand. There are not so many possible reasons for that as might seem in a moment of despair. The pluses of a new product are not apparent and prospective consumers are not yet aware of them. The manufacturer himself does not know about all the advantages as well as disadvantages which will emerge later. The situation is just like any gamble. A chance to win is balanced by risk to lose!

One of the most probable causes of failure is that a new product has prototypes and substitutes which are well known to the consumer. The technique of replacement which the manufacturer had in mind does not work. On the one hand, beginners are not really trusted. On the other hand, no one is eager to change his habits and throw away his old fridge only because he is offered a new one which seems precisely the same.

But you have to pay back your loans soon, whereas the demand for your new product is close to zero. You begin to seriously doubt the choice of your aim and the work done. What can you do?

This critical moment makes it especially important to understand that your problem is not in looking for past mistakes and drawbacks of the new product, but in completing the system! The product exists, but it has no link to the consumer. The ones who might be attracted by it, are ignorant about his existence. And in order to survive you have to believe in this, to do your best to find your own market niche and to build a sales system.

The ones who will not buy can also be of use. They often tell you about their needs and sometimes point out important drawbacks of your product. This “free advice” helps to get rid of blunders and give birth to new ideas! But this medicine is useful only in small doses and not now. At the moment you have to make both ends meet and get some profit in order not to feel a failure. You need not only a flashy advertising trick,

you need something that might attract the consumer without deceiving him.

If you invested some new ideas in the creation of this product, you surely can add one more, which will make away with a “congenital” defect or simply increase the demand. You must have faith in your creation and in the wise words that it is easier to cure than to bury!

People who are in advertising business usually deal with traditional products. They have only one aim – to attract attention with the help of their own arsenal of favorite techniques – and do not trouble much over finding all the great properties of the product and putting them into the advertisement. They stick attractive features onto an old product. That is why the good old sweet water is drunk with greater pleasure. It has a new image, but the chemical composition is just the same! Here is the first paradoxical feature of advertising: *OLD SEEMS NEW*.

You offer a new product to the market. To create it you had to invest huge sums of money, and you cannot count only on some accidental passers-by. You need all people, their interest and attention. So, your product should look as a harmonious addition to the existing system. Its value and practicability should arouse no doubts. People should believe in it! That is why you will need a second paradoxical property of advertising which can be expressed like *THE NEW BECOMES CLEAR AND NECESSARY*.

You will have to be patient and devote some attention to other things except advertising. Here you can also apply the principle of beauty – completeness + minimum. You will have to learn how to describe “the amazing qualities” of your new product in a brief and clear way and how to find those who would like to hold it in their hands. You will have to achieve harmony, to build a bridge between the product and its consumer. And this bridge is built from two sides. On one hand, you study actual needs and find a place for your product. On the other hand, you adapt your product to the needs of the most promising consumer groups. This is the way we can find

something new and useful which is really close to the market ideal. This gives us the opportunity to use the third paradoxical property of advertising: *A GOOD ADVERTISEMENT BRINGS FORTH AN IMAGE OF THE IDEAL PRODUCT.*

If you have taken care to achieve harmony between yours creation and consumer, your product has chance takes the place of the ideal in the consumer’s mind at least for the time needed for him to open his wallet and pay.

An ingenious manufacturer strives to improve the quality of his product by adding new features. A new unusual feature is a sign which should become the ginger and the core of the advertising campaign.

Wonderful if you already have the pep or spice. If you do not, you can create it together with the advertisement page or trailer. And now it is very important to make wishful thinking real. After all, you are not going to disappoint the consumer’s expectations!

An advertising idea can outpace the actual achievements of the manufacturer, and it can prompt him what should be done in order to make his product more desirable. And here is the forth paradoxical property of advertising: *WHEN BORN, AN ADVERTISEMENT CAN GIVE AN IDEA OF A NEW PRODUCT AND SOME WAYS TO SELL IT.* Not for distant future, but for today, using the resources literally beneath your feet. That is why it is really worthwhile studying advertisements of your competitors and taking an active part in the creative process of advertising your own product. To give birth to new ideas you need a creative environment full of passions and new information.

We all know that there are some really efficient and beautiful goods sold at a reasonable price which give people a feeling of satisfaction. Such goods do not need any aggressive and expensive advertising campaign. The information about them seems to spread on its own. So, we have the fifth paradoxical property of advertising: *AN ADVERTISING OF A PRODUCT, WHICH IS PERFECTLY COORDINATED TO DREAMS OF THE MAJORITY OF THE POTENTIAL CONSUMERS, FUNCTIONS AS*

A TRIGGER; ONE SMALL PUSH AND THE PRODUCTS SETS OUT TO ADVERTISE ITSELF AND CONQUER THE MARKET!

That is why, the more talent is used in the creation of a product, the less effort is needed for its advertising.

In this case a designer's ability is not enough. You should see how the product will behave in people's possession and how close it will approach the ideal from the point of view of the consumer today and in a year.

Advertising reminds people of an old need. But this does not necessarily turn to your benefit. Having seen a happy family by a picturesque river in a trailer of an insurance company, my friend went to buy a rubber boat. He had promised his son to go fishing with him!

The consumer will smile at your successful advertisement and buy a similar product from another manufacturer or something totally different! Here is the sixth paradoxical property of advertising: *ADVERTISING STIMULATES NEEDS, BUT DOES NOT GUARANTEE AN INCREASE IN THE SALES OF YOUR PRODUCT.*

This bitter pill has some sweet side. Someone else's advertisement can also increase the sales of your product as a substitute or something associated with what people will see in the advertisement. So do not lose hope and make your "charitable" contribution to the enlightenment of the population.

A simple task of describing the product briefly and clearly can give an unexpected result. You can find new features and even its "philosophic" essence in it!

Hidden advantages of a product are not sold. You have to give them as a present added to the apparent advantages which people are ready to pay for. And here we speak about the seventh paradoxical property of advertising: *TO FIND HIDDEN ADVANTAGES OF A PRODUCT IS TO CREATE ITS ADDITIONAL VALUE.*

This is like money from nowhere. From style and good taste! From a simple ability to look deeper inside your own product or the product you advertise.

Sometimes we hear an old motto: “Advertising is the engine of progress,” but it is never explained why. The gap is filled by intuitive understanding of the fact that advertising is “the nerve of economy” which unites people, stimulates their wishes and decisions to buy something. After all, we all want to have these nice things and houses. To get this, we try to earn more money by efficient and rational labor. Here is the eighth paradoxical property of advertising: *ADVERTISING STIMULATES CREATIVE ABILITIES OF PEOPLE, THEIR SOCIAL ACTIVITY AND THE WISH TO EARN AND SPEND MONEY.*

You look at an advertisement poster of your competitor and envy his daring or inventiveness. This is a reason for using the ninth paradoxical property of advertising: *SUCCESSFUL ADVERTISING AROUSES THE SPIRIT OF COMPETITIVENESS AND ACTS AS AN INCENTIVE FOR IMPROVING YOUR PRODUCT.*

There are people whose smile brings confidence and hope. There are people whose hands are like a philosopher’s stone which turn into gold or cure everything they touch. Maybe we are speaking about you and your product? Your product is so good that it inspires your pride! So share this feeling. Here is the tenth paradoxical property of advertising: *PEOPLE NEED YOUR CONFIDENCE AND PRIDE WHICH ARE THE SIGNS OF THE QUALITY OF YOUR PRODUCT.* People do not want any failures who try to make up for their blunders at the buyer’s cost!

From 10 to 50 percent of the money spent on advertising are spent in vain. This is what experts say. But some of this money is not simply wasted. It is spent on harm. Here is the eleventh paradoxical property of advertising: *UNSUCCESSFUL ADVERTISING CAN TURN INTO ITS OPPOSITE – ANTI-ADVERTISING – WHICH HINDERS SALES.*

You want an example?

A cute dog “smiles” happily holding a fresh newspaper in its teeth. The author of the advertisement must have thought it to represent the popularity of the paper. But will you read a

paper if its implied slogan is something like: “Every dog reads our newspaper?”

A cryptic phrase or an unsuccessful metaphor can often cause irritation. We do not want to deal with things which are dim, irritating and ambiguous. We have no time left for seeking out the hidden sense of mysterious metaphors. An advertisement is not a crossword puzzle. Clear meaning and brevity – this should be the motto of talented advertising! These qualities will be of poor use to a mystic series like “Twin peaks,” but an advertisement will only benefit from them!

Sometimes advertising can be intimidating.

At the tourist bureau you will be readily told that the Pisa tower continues to tilt and will soon fall down, and Venice is gradually submerged in water and will surely drown. And you will come to a perfectly natural conclusion that you should book this tour of “fragile” sights of Italy. And in the same package you will be sold a unique binocular or camera designed for the particular purpose of watching and registering rare events.

Rumors about a new tax or the introduction of new customs fees on import can also stimulate demand. Those who are aware of that tend to intimidate their potential consumer. They try to use the twelfth paradoxical property of advertising: *PEOPLE ARE AFRAID OF MISSING A UNIQUE OPPORTUNITY OR PROFIT, AND THAT IS WHY THEY TEND TO BUY THINGS THEY DO NOT REALLY NEED.* Just touch them up a bit, and they will buy THIS. Only the threat should be convincing.

The majority of new goods and services have their counterparts and their introduction into a well-established market is a great problem. The calculation of their profitability is based either on higher quality or lower production costs. These are fighter goods. They are lead to wars for unoccupied pieces of market areas. They are used to oust rivals from profitable territories. They face severe competition and have to fight for their survival. This is their destiny. And you have to be more than an optimist to expect great profits from participating in this kind of business.

Well, large companies have their own methods. “Killing” small fish and negotiating with larger specimens.

Producers of novel goods have other problems. They do not have to look for drawbacks in similar products and fight them in a devastating competitive war. Their task is to reveal to people the unique properties of the new product which can do them a lot of good or bring great satisfaction. To do this is to *CREATE DEMAND!*

The Pep of Modern Marketing

There are few people nowadays who doubt that organizing trade is not only sly skillfulness or art. It is science! And its name is *Marketing*.

If we want to express it metaphorically then, marketing is the building and advertising is its decorated front.

The naive age of “total” advertising and “mass” marketing is coming to an end. Marketing and advertising become selective and aiming. Even class differentiated.

For such adverts, expensive magazines are widely used which are sent to addressees, men and women, with a definite way of thinking, social status and level of income. Things that are sent to people dwelling in prestigious houses will be never sent to those living in sectional house buildings. Samples are free of charge and the attention of sellers is primarily meant for rich people. Nowadays there is no secret that a database containing 1 million addresses of well to do clients is worth more than 1 million dollars, the more so if it contains reliable information about the families. By means of modern technologies, marketing is gradually changing into something very much reminding us of a careful wife with all accompanied delights, temptations, obligations and even jealousy.

“You’ve stopped visiting our shop. Tell me, why? We need your advice. Please fill in this form. You’ll become a participant of our grandiose lottery!”

“We are missing you! You are one of the best passengers of our airline. Today we are ready to organize your trip to any

part of the world. Let us know where you are going next week or in a month. We'll send a taxi free of charge for you to the very door of your house. On board the plane you'll get a special present!"

Specialists on marketing are preparing letters containing such ideas and texts. And it is not mere courtesy. Many of them have already discovered that strange (at first sight) appropriateness that turning five percent of chance fellow travelers into regular customers increases the profit of the company more than 50 %¹⁰. And they are fighting for "fidelity" preparing to give presents to new perspective clients and prizes to old ones instead of wasting money on gigantic advertisement shields.

It was not so long ago that you could have read on the forehead of anyone who wanted to sell his goods the following slogan: "I need all who have money!" Times have changed. "I need only those who will get interested in my goods" — that is the motto of a modern specialist in marketing. He understands that it is impossible to humor everybody, just as it is impossible to embrace the unbounded.

The space around us is satiated with goods, services and adverts. To add something to it is rather expensive and doubtful, especially for auxiliary things. Today a "weapon" diverse and primarily exact, is needed. Telling tales won't do. Nobody is paying any attention to them. There must be means more persuasive. The most important of them is **to give to taste!** Today many people act in this way. You have 10 million for the promotion of a new product, 5 million out of it will be spent on samples free of charge! But only for those who are capable of buying **that**. This is the way not only perfume sellers act. Car salesmen arrange drive tests not only for journalists but also for the public. Such arrangements are widely advertised, everyone who is eager to attend it is invited. They are

¹⁰ Stan Rapp and Tomas L Collins "The New Maximarketing" McGraw-Hill, 1996

not asked to buy but just to try it, to taste it. To give to taste means to tempt!

You’ll have to agree that to get by mail a sample of sauce, shampoo or even wine in a small plastic packet is a very pleasant surprise. Do you like it? You can buy **that** in the shop the address of which is written on the envelope. Now you are dealing not with advertising overseas firms on TV, but with its dealer who is personally participating in advertising and taking care of his customers. Decentralization is a universal means. It does not matter how to call this process: segment marketing or micromarketing. What is more important is the principle itself, which sounds like a populist slogan: Move towards the customers and try to achieve conformity with his various and changing desires!”

A token of a possible demand is not only a city district, a house or the level of income. Weddings, childbirth, preparation for the school year create a natural demand for goods related to such occasions. To find these people and offer them necessary goods and services and at a proper time is to do something useful. It may happen that some people will suspiciously reject it, but most of them will thankfully accept it.

The main principle of modern marketing is to complete the system! Suppose, you are the manager of insurance company and you want to extend your business. Should you just remind people of your existence through the press and TV? But there is another way – partnership. The shop network may accept your offer to sell alongside bikes, skis, inflated boats and tents your insurance policies. People will see your bright emblem on the boats and roofs of the tents. They would like to have the same!

Selected and direct appeal to potential customers is a means to increase effectiveness at the expense of exactness. Indeed, why cry at the top of your voice at each crossing and bang your fist at the door while it is just enough to press the button of the doorbell, because you know that behind that door your goods are welcome!

Very often, the advert is placed under the windscreen wiper of your car. In this way, the man learns about a restaurant quite near his place of work. And about a new car repair shop just for his car and near his house.

Those are just a few examples of ways and means related to coordination and a desire to get mutually profitable cooperation. Indeed why waste tons of paper and an avalanche of words, while it is possible to address directly those who are beside you and who could be interested in your offer.

In a shop where there is a specialist on marketing you may be given a check not only with the inscription, "Thank you." The number of prize scores, which you have received for today's purchase, may be indicated. And at the exit you will see an announcement: "1000 scores give you a prize. A cake for your birthday!" And you shouldn't be surprised if you begin to more often attend this shop and start counting the prize scores. That is not greediness. It is almost a subconscious desire not to lose a chance.

You have received a letter in which you are addressed by your name. Hence, you are known and respected. A letter with a personal address will never be thrown away like a common advert, you'll read it with interest! A bit of care and attention to people turn to attention and reliability to your business. To keep a reliable relationship is profitable for the customer himself. For he knows exactly where to get goods and services he needs without any trouble and unpleasant surprises on the side of beginners or swindlers. All of us, both sellers and buyers, need a feeling of completeness and reliability of the system.

Sometimes it happens that your own strength is not enough. Your hands are busy attending your customers of your small restaurant, and you simply have no time to take care of your advertising shield on the other part of the town. Therefore, it is reasonable together with your colleague or competitor to publish a map of your town or a tourist prospect with carefully attached routes past your enterprises.

You don't want to do it yourself. Let others do it. They will jump at the proposal and get part of your profit, and in

return they will see to it that a stable flood of guests just leaving the tourist bus or their own car will cross the threshold of your restaurant.

Besides personal efforts to improve one's own business, it is always possible to participate in common programs and business of other businessmen. The principle is quite simple. Establishing new ties improves the effectivity and reliability of any system!

Low Start

The most alluring business is that one which brings “lives” money. It is the sphere of service: hotels, restaurants, taxis...

The simplest and rather reliable method to begin your own business is to become a private taxi driver. A little psychological training and the business will start. Working alone influences the individuality of a person as a stimulus to become self-sufficient.

It is not pleasant for everybody to squeeze extra money from the customer. Therefore, people burdened with engineering inclinations decide to earn money by repairing automobiles. But here, starting expenditures are noticeably greater if you mean your own garage with the proper equipment. More knowledge is required and strange love to the oil smell and constantly black nails.

Want something more extravagant, and also connected with the automobile? Purchase, or hire an automobile completely unique for your district. It is much better if it is an American car of improbable size, a large old *Mercedes* or a *Jaguar*. A little amount of persistence and accuracy, and you can bring a limousine to a working condition.

It is more complicated to find generous clients. Here, again, it is better to rely more upon regularity than on chances. Funerals, weddings, anniversaries - all these are natural and widespread events. This is what your work is.

A poster with a quality photo of your limousine in mournful fashion should hang at a funeral office.

Near the places of marriage registration and its celebration, you should place advertising boards with the image of your limousine, but in an utterly different mode. The mournful symbols should disappear, giving place to wedding attributes. It is better to change the color of the automobile as well, too. Everyone who will see the advertisement at a funeral office should not guess that it is just the same automobile.

Thus, let us suppose that the business has been properly adjusted. You are accurate, obliging. You are wearing a beautiful service jacket with some metal buttons and a cap with a brilliant peak, and all that looks excellent against the background of the limousine. You are seen, gazed at with pleasure, and never confused with the visitors on a wedding or a funeral repast. You smoothly lead the limousine and your modesty is pleasant for the clients. You are not a round peg in a square hole!

The start has taken place, but monotony and routine begin to bother you. It is time to expand the business!

A partner is necessary for you. It is better, if it is a modest guy, capable of giving the right evaluation to your treasure and respects it with quivering.

To work alone is boring, and assistants are welcome. With the passing time, more automobiles will appear at your disposal. They must be kept in order, and you should ensure their work.

So, you have 5 different limousines in a tidy condition. It is already a collection, and many curious people wanting to have a closer look at them and even take a drive will also appear. It is one more possibility to earn money.

Years will pass before you manage to get a worthy collection. During this time you will learn a lot of technical details and amusing facts. You will have something to tell to your visitors, or even to write a book.

Dropping at an advertising department for the automobile sales, I'm always excited to find something rare and not very expensive. I've always dreamt to have such a collection.

A Short Course of the History of Privatization of Country Z

Country Z had three problems. Two old and a new one. The authorities did their best to forget the old problems or at least to pay no attention to them. But they were systematically and painfully reminded of themselves.

The new politicians of country Z are ingenious guys. They discovered for themselves a paradoxical and mysterious principle based on the first two problems: *“Fools” and bad roads are a reliable source of authority and wealth.*

An honest man will decide that all this is absurdity! How is it possible to make wealth out of sorrow, and in what way can fools and their roads be of any use?

But the sly guys know how to turn sorrow into happiness. For themselves, of course.

The secret of the paradox is very simple. The presence of fools and absence of good roads make a stable ground. The people isolated from one another and the civilized world easily become “fools,” and then are transmuted into reliable voters. They just cannot find any other place and samples of other mentality. No money, no reliable information, no roads and hence no possibility to run away from poverty or the arbitrary rule of the local authorities. Besides, from the very childhood they were taught to vote for one candidate only and then at the polling stations they were given food and drinks. Under such conditions, the people do what the authorities require of them. And rebellious and proud people simply disappear.

The third problem for country Z is still fresh. It is privatization!

In country Z the climate is such that from the very birth the problem of privatization has a bad smell. And no foreign-made washer-men and bath-house attendants could do anything. The problem is already gone, but the bad smell is still in the air.

Ivan *Sidoroff* was director of a candle factory. He was conceived and born at this factory, i.e. as its leader. It was strange

to him to hear that the leader could be somebody else, not he. For a long time, he had been putting aside money for a cheap secondhand car and kept it in a glass milk bottle under an old pig-iron bath at home. Green notes with a gallery of portraits beginning with Lincoln and finishing with Grant were rubbing shoulders with his red booklet of X-party member which had no marks of paid fees since 1989.

If his native town *Izuminsk* had the same fate as Pompeii, the archaeologists, judging by the marks in his party booklet found in the milk bottle, would mistakenly record the date of the catastrophe 2 years before and would get a strange impression that *Izuminsk* had trade relations only with one and very far away country. Isn't it a Paradox!

But the archaeologists' problems did not worry *Sidoroff*. He had his own problem. How is it possible to make the factory his own? To purchase new equipment and make new working places? What for? It is a ridiculous business! That would make the factory more expensive on account of new intellectuals and *Sidoroff's* energy, but his own personal pocket would have a hole!

After some meditations, *Sidoroff* made "a brilliant move." He made everything the other way round! He sold the best equipment and tools to his son-in-law. The son-in-law sold them again but for a tenfold price. The son-in-law got 10 % profits. The rest is put aside, into *Sidoroff's* pocket for privatization of the factory.

Moreover the son-in-law got 40 % of the productions of *Sidoroff's* factory.

And where is the rest 60 %? It is sold by *Sidoroff's* junior son. His firm got productions lower than the cost price, and the factory is gradually immersed in debts.

Who was the creditor?

The bank, which was founded by *Sidoroff* for his elder son. He is the most reliable partner, so he kept all the Family's money.

"The brilliant move" kills five birds:

1. *The cost of factory (together with the debts) is*

promptly approaching zero;

2. *Being offended by the low salary all the “smart Alexes” as well as the bowlers leave the factory together with their ridiculous vouchers;*
3. *All of a sudden Sidoroff finds money for the privatization of the factory, building a new house and purchase a luxurious car;*
4. *Sidoroff becomes a respectful person, and now he has many influential friends with whom he learns to play golf.*
5. *Sidoroff never or almost never violated the law. He told everybody so, and now he believed it himself. And can it be otherwise? All the documents are in perfect order. He is a distinguished person and the only lawful owner. He “has built” this factory and has all rights to own it!*

This sad history has a silver lining. Now that *Sidoroff* is rich, he is respected by the workers. Bankers trust him. And his trick with privatization is “the purest” of those which were applied by his golf partners. But the most remarkable thing is the fact that *Sidoroff* is indeed a good boss. He is the only one of his kind in *Izuminsk* who can create new working places and knows exactly what for!

While preparing the plan, you'll discover your own reserves of which you probably knew but didn't take seriously. The plan will force you to look for new possibilities and make active your connections. It will disperse the illusions, find out limitations and disclose shortcomings. You'll become more careful, effective and reliable. It will be useful for you even if it doesn't bring a cent.

Business Plan

A business plan is a bright and dynamic description of your intentions born in the surrounding of the discovered tempting possibilities. That is just the way it should look like and shown to the investors that everything is OK. There is only a trifle of a detail missing. Money!

A business plan is often written by one person to persuade another to give money to a third. That looks strange but such a scheme works and helps to get credit.

If you are a beginner, nobody will give you any money despite your smile and good suit.

Don't be afraid. A good business plan is only a program of sensible usage of money and everybody understands that it will be slightly colored. That's why before your business plan is opened, you'll be carefully looked at!

On the one hand, you should demonstrate inexhaustible enthusiasm and an extraordinary creative impulse. On the other hand, reliability, solidity, conservatism and an obvious desire to “play according to rule.” This is a standard requirement to anyone who wants to get credit, and you must confirm it. Nobody will give solid money to a shy dunderhead with plastic principles.

But money is given not only “on the personality.” It is also given on an idea the essence of which is easily expressed by answering the following two classical questions:

WHAT ARE YOU GOING TO SELL?

WHY SHOULD SOMEONE WANT TO BUY IT?

The respectable people who will read your plan must have definite answers because they want to know what exactly you are going to do. Now there is only a little trifle left – to persuade them that you know how to do it. It is difficult to say beforehand which definition and combination of arguments will penetrate the “stony” heart of the creditor and persuade him in your solvency. Therefore it is desirable to present one and the same idea two or three times making use of the most suitable arguments. The words, intonations and arguments should differ but the essence of the idea must remain unchanged.

Of course, in your short and colorful speech, you'll gather all arguments, but in your business plan to do it is not obligatory. Those are piquant spices, and they should be distributed evenly on the whole product. And it is better if they are various. A reference to an article of a famous economist must be a

solid argument, but a witty remark of your wife (with references to the author) will also do a lot of good. It means that there is at least one sound person in your family who supports you.

The business plan reveals the essence of your project, and its aim is to explain the novelty of your idea and how exactly you will get profit. Of course, in practice everything may appear quite different, but your business plan must look impeccable. It should be absolutely clear that the money wouldn't be wasted.

There is no problem if you have decent property, and a noticeable status. This is pledge and guarantee. But what could be done if there is no property, no status, or both are too modest?

There is only one way out – to write a staggering business plan and get money on it and your own personality.

You'll have to defend your plan before your investor. That is why it must be your plan. You'll have to invent the basis of yourself. It should demonstrate all features of your ideological competence. You must show that “indisputable” fact that you and your idea are a ready-made and reliable machine for making money.

While preparing the plan, you'll discover your own reserves of which you probably knew but didn't take seriously. The plan will force you to look for new possibilities and make active your connections. It will disperse the illusions, find out limitations and disclose shortcomings. You'll become more careful, effective and reliable. It will be useful for you even if it doesn't bring a cent.

Hope for the best and try to be effective in everything. You'll learn a wonderful and easy style of presenting your plan on splendid white paper. Such trifles as a computer and a printer will cost you less than the service of a stylist, designer and typist. There are no standards for a business plan, but in every solid bank there is a stable image of an “ideal” business plan, which most likely you will be given to see. And you will

sorrowfully find out that it doesn't suit you even as a sample. You'll have to do everything yourself.

It is doubtful that your plan will be read from beginning to end, unless it is a sheer anecdote. Therefore it is better to divide it into 6-10 paragraphs. That is easier to orient. Besides, the list of paragraphs will demonstrate a solid skeleton of your business and your system thinking.

Let's again make use of the old good method – to do things the other way round. We'll begin to write the business plan from the conclusion and the list of paragraphs. We'll make use of the conclusion as a description of an ideal final result and the list of paragraphs as the plan.

1. You and Your Idea

You were born. You've got an education. You've worked and acquired experience. You've worked hard and have become a success. This is proof of your competence and reliability!

You've long cherished the idea, and now when it is ripe, you've decided to realize it. It shouldn't present your story in the way of a militia report. Let it be a story with touchy and funny circumstances. That will make clear how the idea is enticing and how well you realize the final product and the customer's joy. This will be certified by a short but complete description with a few “extra” traits. For example, peculiarities of packing and a pep of the advert company. And there is full reason for that because the quality of your product is unique!

If your idea is raw and looks mad, nobody will give you any money. You'll have to overcome hard contradictions. On the one hand, your idea must be original and enticing, on the other hand, simple and easy to realize. A clear understanding of what you are going to do is a serious token of your competence.

It is much better to tell about one idea. You'll never be forgiven for a plaser of many ideas. People will think that you simply don't know which idea to choose and in what way the credit will be used. Let the plaser be your “secret weapon” or the “lifebelt” in case the main plan fails.

2. Motivation and resources.

An enticing idea is the best proof of the seriousness of your intentions. But now it is time to show resoluteness and the possibility of its realization.

Describe how you imagine the organization and the juridical mounting of your project. Tell about your connections with people and organizations supporting your project. Tell about the founders and their competence. About the distribution of functions, financial participation, the number of qualified personnel. About their whereabouts and interactions.

Thus, if we put together your idea, professionalism and experience of your employees, friends, partners and the required capital, the result will be wonderful. and in all that there will be full competence, agreement, reliability, a high degree of readiness and resoluteness:

*There is no necessity to carry out additional investigations.
All circumstances are absolutely clear.
The completeness of the system is obvious!
Everything is absolutely clear!*

For otherwise will there to be any bank to give you money for preparation and maturing?

3. Technical details.

Tell about the world level of your product or likewise services. The investors will most likely want to compare your product with that of the world standard. The comparison of your product with the world level needn't be necessarily in your favor. But your advantages must be absolutely clear. One of them is the fact you are here quite at hand and you guarantee the promised quality, teaching and technical service.

Do your novelties have juridical mounting, patents and brands? And if everything mentioned is real, there must be also copies of the certificates in the enclosure to prove it. Thus, the basic level is designated. Now you may tell about the perspectives, about the future possibilities of the qualitative development of your product and how quickly it can be done if such necessity appears.

4. The market situations of your strategy.

If determination and resources are in proper condition, the only thing that is left is to demonstrate your knowledge of the situation on the market and the possible competitor. You'll have to give another look at your product but not from the point of view of technology, but your customers. What are the peculiarities of the product your customer will get? How does he manage to do without the product you're going to offer him? Enumerate your customers. Who are they? Where do they live? Where do they work? How exactly will they learn of your product? Because you yourself must also know in what way your product or service may entice the customer.

The profitability of your product is easy to estimate if it is compared with its cost price and the price of similar products of other producers. The differences should be to such a degree that the mediators, adverts and unforeseen expenditures should not be able to swallow everything.

One should also demonstrate his independence of the suppliers. If they notice the profitability of your product, they are sure to "tight the rope" – raise the price of raw materials and service.

You must joyfully inform that you know how to keep balance because you have extra channels of provision and new suppliers of key service.

Is it possible to oust your product by a striking analogue?
How long will you be able to keep your advantage?

There are not yet any advantages, but you must think of ways to preserve them!

In order to be able to answer these questions, it is not necessary to demonstrate fantastic tricks with a time machine. It is just modest enough to repeat your own arguments and confer them by the opinion of experts. The difficulties of finding such an "opinion" are easily overcome, suffice it to look through a couple of reviews in a reliable journal. And it is not obligatory to look for a prognosis for your own product. It's just enough to find its system analogue. A product which is similar to yours at the market.

The prognosis of the production of toothpaste is quite enough for the prognosis of the production of tooth brushes. And the automobile statistics of your town will quite suit the forecasting of the demand of spare parts, renewals and account materials.

It is also worthwhile mentioning the legislative limitations concerning your product. You must know exactly of the existence of quotas and prohibitions and the way you can receive your license.

If your project is connected with your work, you will be able to tell about it without any mistake. But if you don't know of the existence of legislatures and technical limitations your plan will be justifiably put to doubt.

5. **Financing.** Nobody wants to enter a new elevator first. No one is sure that there is nothing wrong with it. That is why you'll have to show that somebody has already entered your "elevator." You are also there, and you have the money for starting the project, and you have solid partners wishing to "go upward" together with you. You have agreements with other creditors and even a financial plan.

6. **The schedule** of the development of the project.

It is only a clear plan of actions. Without any excessive interdependence of separate items and loops of the "feedback." Only essential items built up in a reasonable sequence.

Of course, the draft plan will contain many details. It is, as it were "playing grounds" for training and acquiring skills of "survival" under the conditions of "local jungles" with their unpredictable surprises of the local "fauna" from bureaucrats and gangsters.

The final version should not contain points which may be called redundant or too expensive. And here it is also appropriate to make use of the formula of beauty (completeness + minimum). In any case, you'll have to find the golden middle between exquisite minimum and heavy redundancies. "Reasonable" redundancies are looked upon by many as a main feature of competence and reliability.

Good luck, guys!

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