Amity and Enmity

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Two Archetypes of Social Existence

An Interdisciplinary Study

II

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Revised Edition

Production: Editions à la Carte Zürich

ISBN: 3-908730-48-1

Content

Flashback		1
Preview		4
Introduction		14
The MaFiT of Throwing a Stone		18
The Struggle With Consciousness		26
The Two Approaches		30
Part 1 -	The single loop:	
I	The Hypo- and the Hypersensitive Being	39
Part 2 -	Two level systems:	
II	It's a Sin to Confess a Sin	66
III	Damn the Authority!	87
Part 3 -	Two elements in parallel:	
IV	If You Can't Beat 'em, Join 'em!	104
V	Con mala persona, el remedio: Mucho tierra en media	121
VI	Faith, the Symbol of God Providing Help	152
VII	A Trilogy of Hostility	180
Part 4 -	Three elements in parallel:	
VIII	Viribus unitis	199
Part 5 -	Miscellanea	
IX	The Quarrelsome Clerics Become United About the Heretic's Hair	212
X	Nature Favors Aggression	228
Some Closing Comments		243
References		249

Flashback

This Volume II is a continuation of Volume I; therefore, a brief overview of Volume I could be helpful for the reader.

Volume I contains three parts. In the first part, the focus is on the description of a mathematical model of the mental-social behavior of an individual. The model is called the *social unit*. We use the article *he* instead of *it* when the unit represents an individual and is called *individual*. The unit is structured in the form of an automatically operating control loop that has self-control in working toward its goal. This goal is the unit's *self-realization*. The unit can become disturbed from the environment within which it exists; but it has no interaction yet with a second unit. It is in a state of autonomy.

Secondly, after this first topic is sufficiently elaborated, the forms of two basic archaic social behavioral patterns, *amity* and *enmity*, are defined. This second part is the main body of Volume I. The two patterns, or motives, of social interaction are called *consent* if amity is the motive, and *hostility* if enmity is the motive. Two individuals, or two units, now - as they interact - are called partners. They are set together, side by side, i.e., they are on the same social level and they unconsciously exchange information with each other. This unconscious information is the *attitude* the partners hold toward each other.

A third part of Volume I illustrates the intricacy of several social units in their information exchange in, firstly, unconscious information exchange only, and secondly, in unconscious and conscious information exchange. All units are put on an equal social level, i.e., there is no hierarchical arrangement considered.

The main point that comes to light in the second part of Volume I is that even in amity where the partners strive toward their individual goal, i.e., toward their self-realization, one partner has to be in an aggressive disposition toward the other, and the companion has to

submit himself to his aggressively disposed partner if a mutual agreement is to be established. One partner has to be progressive, i.e., somehow aggressive. In other words, one partner has to act; the other partner has to give in, has to agree. In a hostile partnership, in enmity, both partners - partners perhaps rather in quotation marks - are mutually in an aggressive disposition toward each other.

In the amity-position the meaning of one partner being aggressively disposed is merely an indication of the necessity of a readiness to go forward, to go ahead and to act, to progress. Although one partner is in an aggressive disposition, the partnership results in amity. The term amity is based on the fact that this form of information exchange between two partners - one being aggressive, the other submissive - results in mutual help concerning the partners´ self-realization, whereas in the enmity relation the mutual aggressive disposition results in mutual damage to both partners´ self-realizations. If two aggressively disposed partners struggle toward their individual goal, then conflict, damage, and self-damage are programmed. As a third state in this second part, it was found that if both partners submit to each other, the relationship collapses; it turns into a negative prospect for both partners´ self-realizations. One partner has to go forward; the other partner can hang on by submitting - but not both.

The remarkable point is that even in amity one partner has to lead, whereas the other has to give in, has to submit himself. This feature becomes - as the investigation illustrates - logical. If both give in, the relationship deteriorates, becomes paralytic. One of the partners has to lead; the other has to accept the leadership. Of course, in case the goals are not self-realization, if they have a temporary meaning only, then leadership and submission can be exchanged over the course of time and evolving circumstances.

A further extremely important fact becomes uncovered in this second part. Concerning the existential area of social homeostasis

and compared with the consentient partnership, hostility allows a much *larger willpower* for both partners that they can exert in their mutual struggle; and their emotional disposition operates much *faster* than in consent. For both parameters, the willpower to act and the speed of acting are about twice as large in enmity than in amity. In addition it was found that if in hostility one partner is noticeably stronger than his partner, the weaker one at long last dies away. Out of this fact the conclusion emerged that for the purpose of survival, nature necessarily has to favor aggression.

These two facts, higher willpower and higher speed in enmity, push amity behind enmity in the daily fight for survival. Therefore it is practically impossible - and history proves it again and again - that a friendship that once turned into hostility never goes back to a friendly state, to a peaceful togetherness. Hate extends to the grave: *Exoriare aliquis nostris ex ossibus ultor* - An avenger may rise up out of our mortal remains! Vergil, Äneis 4,625. Changing from hate to love is a dream, or at bests a miracle.

Although such findings are contradictory to any philanthropic claim, namely that peace and democracy on earth be possible, the facts are perfectly in line with historical events all over the globe and throughout time: enmity rules the world. This holds true for humans as well as for animals and plants, i.e., for any living being. Every healthy and normal being wants to survive and substantiates the universal truth*: Proximus sum egomet mihi:* I am myself the next. As the world does not exist for a being that does not exist, the living being is categorically the most important being for him. Each being is the center of his world.

Although friendship with its low power and low speed results in better goal attainment than hostility at the very end of an undertaking, hostility is all the more attractive. This is so because hostility acts at the very instant of actual life - and this is how we judge the importance of events. Hostility acts twice as fast or even faster than friendship, and it provides twice the willpower it can exert than amicable behavior. The model shows that in order to

maintain friendship in a favorably working manner throughout a lasting undertaking, modesty in willpower and an emotional restraint are severe and necessary requirements. In enmity, both partners are egoists. In amity, the aggressively disposed partner is called the *egoist*, the submitting partner, on the other hand, is named the *altruist*.

The third part shows, firstly, two forms of extended applications of the dualism to multi-partner systems. One form illustrates the outcome in monotonously growing partnerships from two up to eight partners, all unconsciously interacting with each other. The other form consists of two groups of two partners each, where the internally friendly groups fight each other. Then, and also in this multi-configuration, an investigation is provided showing the fundamental functional structure of the brain of mammals. This third part provides the awareness of the gigantic social complexity in which we live, and also the tremendous potential of brain activity we carry around inside us. In addition it comes to light what an enormous effort we face if we ever want to gain insight into the time-functional behavior of living systems, i.e., of us, the homo sapiens.

In an appendix, called *The Technical Unconscious,* the parallelism of automatic multiple controls on one hand and of socio-biological unconscious interaction on the other hand is demonstrated and formulated.

Preview

In the present Volume II, similarly as done in Volume I, we look first at a single partner, and this also in the form of the loop-model of Volume I. In contrast to the investigated parameters in Volume I, we choose a parameter of this loop that is not yet scrutinized. This parameter is *the feedback signal* of the individual's loop. It is demonstrated what effect a feedback signal has on the behavior

of the unit when the magnitude of this signal varies. This Part 1 in Volume II is titled: *The Hypo- and the Hypersensitive Being.*

I. The Hypo- and the Hypersensitive Being

The individual´s internal feedback feature is essential for any goal oriented, self-controlling, and automatically operating device. Because such a device can simultaneously become disturbed whilst struggling toward its goal, it needs constant self-control of its position in regard to its goal. Self-control is established via feedback. And we think that all goal-oriented contraptions and organizations need and have such a self-controlling feature. A goal-oriented being cannot find its goal without self-control. Self-control also helps to fight the influence of disturbances that tend to drive the device off of its track toward the goal. This is the very reason that feedback requires special consideration, especially in areas of political, social, religious, and military concepts. We consider *the feedback feature of providing self-control in connection with the ongoing perpetuation (integration) over time as establishing the consciousness, i.e., the awareness of existing.* Therefore, a goal-oriented functioning device with self-control has consciousness, be this functioning a human being, an animal, a plant, a virus, or any formation of cells in operation, e.g., the cells involved in the healing process of a wound. A new thought in modern physics is that even light particles, i.e., photons, might have consciousness.

We must detach ourselves from the narcissistic view that only human beings have consciousness and that animals live by instinct, and that plants shall have neither consciousness nor instincts for their survival. We do not know when the awareness of consciousness is activated, and we do not know how many different forms of consciousness might exist. Therefore, we risk our mentioned hypothesis and go forward with it. In short: *Consciousness is goal-oriented self-control integrating over time.* Further on, we will return to this definition with some additional remarks.

In the second step, in Part 2, we take the model of the single unit and add a partner above the first one in order to form a *hierarchy* of two partners. This means - compared to Volume I - a different structure. With this concept of a social unit above another one, we focus on two different characteristics of social hierarchies although with the same social notion, namely an authority above a subordinate.

One topic of these two essays of Part 2 is Chapter II.

II. It's a Sin to Confess a Sin

This model's interpretation has a hint of religion. If a person confesses to a second person of a higher caste, to a priest, the confessor sells his own self-realization to the superiority, i.e., he hands over his identity to the superior's system. This is so in our understanding and as we shall find out, because the confessor becomes a subject of the higher leveled person's domain, or power. The inferior person is no longer responsible for his mind, he has no longer to judge what is right and wrong from his own judgment and conscience. The superior in power or the domineering ecclesiastical institution defines what is right or wrong, what is godly and what is sinful - in the priest's opinion indeed - in order to maintain his influence and his power, and - *sit venia verbis* - to obtain the money necessary for the priesthood as an institution to survive. The obligation to confess could have been unwillingly created by birth, by indoctrination, or by a vow. Concerning a vow, Georg Christoph Lichtenberg (1742-1799) found: *To take a vow is a greater sin than to break it.* But breaking a vow or rejecting it can cost one's life. This happened for instance in the time of inquisition by burning of an apostate, or it happens these days in Islam as the stoning of a woman-adulterer.

The second essay of this Part 2 is related to disobedience against political, social or military authoritative superiors.

III. Damn the Authority!

In this essay we shall find an explanation, or partially a justification for subjugated people to riot; we mean a justification for terrorism. If one becomes oppressed by a higher regime, be the oppression political, social or ecclesiastical, one loses one's own value or otherwise one has to rebel. An attempt to escape from suppression into freedom or into better welfare is in most cases unsuccessful, often followed by incarceration, or execution (we mention the political totalitarian systems in Iraq, Iran or Afghanistan, to mention a recent few of many).

If top managers of the financial world - as an authority - assemble in five star hotels in South Africa to talk about fighting poverty, this can be regarded as outrageous, as an insult to the poor in the world. Top managers and mega-money owners should better fight, we think, their own affluence and lavishness. Will they ever? Never! Perhaps those managers know that reducing poverty of underdeveloped and undernourished people keeps up or could augment even the potential for terrorism. Therefore, they rather prefer the status quo. But they will not admit that this is the case.

After these two topics will have been scrutinized, we shall turn back to the more common form of the dualism of the one we set up in Volume I: Two partners socially leveled in parallel, side by side. But this time, in Part 3 of four essays, we look at different perspectives in contrast to Volume I.

The focus of the first essay in Part 3 deals with the proverb:

IV. If You Can't Beat ´em, Join ´em!

This essay shows the change of behavioral parameters in a two-goal structure where two partners are in hostility with each other, but where one partner is weak and unable to fight the strong one. The term *goal* is now no longer self-realization but any goal toward which a partner is striving. Each partner has his own goal in mind.

The weak partner in his feebleness being unable to reach his goal offers now a common goal structure with his strong, aggressive companion. He offers an alliance by giving up his own goal and accepting the opponent's goal. If the strong companion, on the other hand, rejects the offer to form a consensus with the weak partner, this one eventually will become eliminated; he will die. – Facts of day-to-day life manifest again and again that aggressively disposed individuals with a mania for power need a partner to exert their militant characteristic. Such individuals are unable to take part in an agreement. They are a priori socially destructive. In dealing with them, the weak goes inevitably to the wall.

The next aspect in view is the following. A delayed attitude information exchange between two partners is looked at. A delay reduces the tension their attitude-communication produces. The title of this essay is also a common proverb:

V. Con mala persona, el remedio: Mucho tierra en media

For handling an evil person, the remedy is: stay far away from him. Simultaneously, we see the old saying of nomads verified: *Have the hearts close together, but the tents far apart.* A sideswipe this chapter produces is that our increasing population density on earth with the forced globalization, the so-called free travel and trade, will result in unavoidable wars. A saying quite similar to the title is the French proverb: *Tais-toi quand tu parles!* It says: Tell the other person what he wants to hear, not what you would like to tell him. Make the information insignificant in order to save peace, i.e., to save yourself, because: *A trop dire la vérité, on perd plus d´une fois l´amitié.* Or a stronger saying is in this regard*: Bon fait mentir pour paix avoir;* a white lie can save peace.

As the third chapter in this Part 3, a very different idea is interpreted: We look at the form of a dualism by seeing the brain of one person separated into two parts, a conscious and an unconscious one, and letting these two brains communicate with each other as if they were two separate beings. This essay is titled:

VI. Faith; the Symbol of God Providing Help

This topic's subject also has a religious flavor – as did the topic in Part 2 - but it has a very different aspect. It shows that for a person who has a strong God-symbol in his unconscious and prays consciously to this God, this divine symbol can bring help to his consciousness - or indeed to the being as a full entity. As the brain is finite, *Almighty God*'s power, as an unconscious symbol, is necessarily finite too, and so is the help He can provide. The model indicates that a weak person gets the most help, but only if he also shows some basic effort to look after himself. In doing nothing and just praying for help, then the praying effect is zero. On the other hand, the model shows that a strong person has no need for praying to his unconscious because he is self-sufficient within his consciousness.

Beside the model's interpretation, a short insight into the two expressions, *infinity* and *eternity*, will be given, because these two expressions are related to God the Almighty as being infinite and who is supposed to provide life after death from eternity to eternity! The misuse of these two words, although their use is a harmless exaggeration, deserves some comment.

The fourth essay in this Part 3 is an exploration of a package of three different forms of aggression within a dualism.

VII. A Trilogy of Hostility

This dualism illustrates two bilateral information exchanges between two partners; first, mutual attitude toward each other and second, in addition to attitude, mutual observation of each other's doing. Three different constellations of the two goals are taken into account. These are *collateral* goals, *independent* goals and *antagonistic* goals. In each case the magnitude of mutual observation is taken as a parameter. The model indicates the advantage of observing each other's goal approach in the case of collateral goals, but shows the disadvantage in the case where the goals are antagonistic. The investigation makes it clear that if

one party is spying on another one (by observation him) that other party has to counter-spy - or it will be lost.

Part 4 then considers three partners in mutual communication. Within one and the same system there is a mixture of communication modes possible, of amity and enmity. Three different topics will be scrutinized although we put them under the same title of *Viribus unitis*.

VIII. Viribus unitis

It is obvious that three partners in interaction already have the potential of an enormous number of characteristics and that the corresponding outcomes, when the value and the magnitude of the characteristics vary, become confusing.

No person who interacts socially can live without having enemies even if he intends to be friendly to everybody around him. There is the saying: *A scorpion stings even without any reason.* But there are different ways to handle friends and enemies.

What makes a person an enemy toward another? Very basically it is the intention to work toward the opposite goal of the partner and simultaneously to have a hostile attitude toward him. Our three different sub-topics of the essay VIII are again related to proverbs. They are:
a) *Viribus unitis* (Unison is strength);
b) *Qui est trop bon, est demi-fou;* (He who is too lenient is a fool.)
c) *Corruptio optimi pessima* (Corruption of the best is the worst);

a) In *Viribus unitis* the fact appears that aggressive behavior is not necessarily bad behavior, i.e., aggressiveness is not necessarily a setting off for damaging another person. If goals are similar in their value, unconscious aggression is help for each other. We will find that the specific form of interaction determines to a large degree the attainment of the system´s constituents.

b) In *He who is too lenient is a fool* it will be seen that a partner

who is conciliatory to all other partners within a group loses in favor of these other partners who all will win. Even in a *perfect* democracy there are egoists and altruists, winners and losers. *What is one man's meat is another man's poison* - democracy or not.

c) *Corruption of the best is the worst* demonstrates that the corrupt guy is punished for being dishonest to his two partners: *Who spits against the wind, gets it back in his face.*

In Part 5, the final part, several social elements (up to 8 partners) are placed in a row on an equal social level, and different behavioral attitudes among elements are investigated. Two different topics to be proven have been chosen. Firstly we formulate

IX. The Quarrelsome Clerics Become United About the Heretic's Hair

In German, where the proverb comes from, the proverb is: *Die uneinigen Pfaffen werden eins über des Ketzers Haar.*

Another proverb is closely related to the topic: *Too many dogs are the rabbit's death.* Under investigation is the sudden behavioral change of attitude within a group of quarrelsome clerics or dogs to a conciliatory unification within the group of such individuals when an overall malicious pleasure is in sight for the otherwise belligerent group to go after a heretic. It is a common social encounter that groups of hostile people become temporarily united in their attitude when an outsider, an enemy, can become disparaged and eventually tortured or even killed. It will be found that two clerics, or two dogs respectively, are sufficient to kill a group member that disagrees with the group's policy. The second piece is titled:

X. Nature Favors Aggression

In this final essay once more and in more detail the motives for the attractiveness of hostility and the motives for the apathy for consentient social structures are shown. It becomes obvious
a) that the dominance of hostility over consent is firmly established and overwhelming on our planet;
b) that in both forms of behavior, in the hostile and the consentient, the agglomeration of involved elements causes achievements to deteriorate, stronger in hostility than in consent;
c) that the density of information exchange enhances the deterioration; and
d) that consentient systems are extremely vulnerable to disturbances that penetrate into the system, whereas
e) hostile systems have an autistic character in this regard. They cannot be disturbed; they are eager to remain hostile.

As our findings prove to be the same whether the social-hypothetical model is built with electrical, electronic, mechanic, hydraulic, pneumatic or any means, the rules we find are axiomatic. They not only exist on our planet earth, but out in space as well. Otherwise no space ship, no satellite would work that is made on the basis of earthly rules. And if we ever find living creatures in outer space, we will find that they have similar problems as we have on earth. There is one and only one nature with its immutable laws - and we are part of this nature.

The study of these 10 essays is rather demanding and the endeavor to peruse the relationships consumes quite some time. But we have to admit that life is, when we investigate ourselves, far more complex than problems we handle outside of ourselves, outside of our own complexity - one level down, so to speak. And *time-functional loop-thinking* - as our endeavor involves - is the very discipline of the future. Ludwig von Bertalanffy said*: In modern science, dynamic interaction appears to be the central problem in all fields of reality.*

It must be noted that the acceptance of the model of the unit in Volume I is a prerequisite for the acceptance of the compositions in this Volume II. Generally, to promote pure physical concepts - as our concept indeed does - creates a wall of resistance in all humanities. This is more so in our case as we work with a hypothesis taken over from pure technical installations, from automatic multiple control systems. Supporters, advocates and protagonists of the humanities attribute a rather low value to the pure physical world. Cross your heart, word of honor: such devaluation is merely an escape from the difficulty to comprehend physics and its related mathematics. As an academic once said to me: If a student is too dumb to comprehend physics and mathematics, he studies medicine; I studied medicine. Humanities often operate with pure spiritual contemplation, but this kind of thinking does not help to bring us forward to a new platform.

A word from Albert Einstein: *The problems created by our current way of thinking cannot be solved by that way of thinking.*

The way the world functionally works is extremely complicated. And we are born to magical thought and symbolism and not to mathematics of reality. However, without moving from the stage of philosophy, sociology, and religion to mathematics, we never will gain a true insight into the happenings of the world in which our live proceeds. - What cannot be understood cannot be changed. The deeper the world is penetrated, the more it becomes obvious that it is functioning by immutable natural laws; and that *it is matter that functions* is our categorical imperative.

It is obvious and quite understandable that one turns to higher leveled symbols, like God, soul, Holy Spirit, syndromes of love and feelings, if the secular level of matter of the functional world picture cannot logically be grasped and analyzed. However, it is our opinion that before thoughts about God can take place, one should have deep knowledge of functional physics - from galaxies down to molecules and further down to the subatomic world. Otherwise such symbols remain a product of subjective

imagination with the result of discriminating and even killing people who adhere to different symbolisms. People kill each other for symbols; for physical laws, there is no killing. - But physical laws are used to kill in the name of symbols!

It is attempted to structure the presentation of the ten essays in such a way that they can be read independently from each other after the introductory Chapter I is endorsed, or better, after Volume I is read. Due to the fact that each chapter is structured to be self-sustained and self-sufficient, much basic thinking is repeated in the different essays to make it easier to follow the author's views and also a little bit to hammer new terms into the reader's brain.

Before tackling the coming chapters, a more in depth explanation shall develop a picture of our way of thinking and how our ideas have developed.

Introduction

What is the basic idea of this endeavor?

Our contemporary thinking, as it presents itself today, became developed and structured simultaneously as this world changed in time. The world built our perception, our way of thinking, and our beliefs. Our comportment and behavior is somehow a mirror of the world in which we live at the very moment.

Beside the observable world that we recognize with our five senses, there are also the ethical, moral, social, and religious qualities that are part of our life. Despite these many symbol-loaded and rich fields of knowledge, it becomes more and more evident that the total world functions on the basis of Natural Laws. Nature with its laws constructed the two parts of the functioning of all beings, the consciousness and the unconscious. Hence, the unconscious, which is part of the mind, is not directly accessible

through consciousness - but the unconscious continuously affects the conscious behavior and forms foremost our emotions.

Consciousness and unconscious are strongly interrelated. Their separation into two individual parts is rather artificial. The unconscious world in us creates its own pictures (we know this from dreams) and works them into the consciousness; and the consciousness in turn projects such pictures partly into the outer world. This is the way we form gods, ghosts, angels, devils and all the millions of symbols in fairy tales. But such unconsciously formed pictures do not have the consciously required time-logical sequence, i.e., the time-functional characteristics of the outer, i.e., of the physical world. Such discharged images out of the brain are unreal in the outer world. They are unconscious and have to remain in this unconscious part of our head. But there they exist, and there and only there, they are real.

Our consciousness has to be able to give us the tool to handle the environment into which we were born, to defend our territory, to feed ourselves and to reproduce. The unconscious that acts *behind* the consciousness remains hidden for our five senses, although it is an imperative part of everyone's daily world.

We can observe that our reality, as it is and always was, is dominated, even domineered by conflicting interests of survival. Conflicts grow when beings are forced into close togetherness. Conflicting interests to ensure survival lead nolens volens to *every being against every being,* and the stronger wins. This fact is a stern basic requirement of nature, although it is definitely not as simplistic as our wording here formulates.

As the density of inhabitants of our world augments, the probability increases that cataclysmic wars will develop. Close togetherness creates friction and hate among any and all beings.

In order to make further interacting life possible, it is necessary to find ways of thinking that are beyond the scope of our

contemporary conscious mentality - always being aware that the unconscious continuous to work from *behind the scenes.*

As the unconscious is much stronger than the consciousness - if such a drawing in sections is allowed - the unconscious has to find a means of amalgamating with the consciousness so that conscious thinking can contain both. An illusion? Partly!

As we are just a temporary trifle of the immense world we live in, and as we mainly deal with the conscious expressions of our brain, a thinking that involves both, the consciousness and the unconscious, is extremely difficult to imagine and even to acquire. It even seems to be axiomatically impossible. By saying *axiomatically,* it is meant that a part - what everyone of us is - cannot perceive the total - that is the whole, i.e., the conscious and the unconscious of oneself, and including a partner we are involved with, and in addition the greater world around us.

Taking an approach to achieve such a goal we must find *Laws of Nature* that describe conscious and unconscious behavior of ourselves within our brain and a bridge to reach over to other beings. In attempting such a daring task it is inevitably necessary, first of all, to demystify and demythologize the world. Such tabula rasa appears almost to be apocalyptic.

In order to demystify and demythologize the million year old concepts of our beliefs and religions, a replacement of such faiths in symbols by a pure physical world has to take place. A rude and pragmatic concept of that kind would indeed go far beyond actual classical physics. We would have to acquire a physical world in its indiscernible complexity. In other words, we have to accept and comprehend *how matter functions in time* in all its details and aspects. For such a path of new thinking we could coin the term ***ma**tter **f**unctioning **i**n **t**ime*, and call this term *MaFiT*. What do we mean by this kind of - as it seems - far-fetched acronym?

The word *functioning* means how matter moves in time on its path in minute detail with all its bits and pieces. Further down, this notion is shown with the simple example of throwing a stone.

There are two very high hurdles to be taken for understanding and accepting such a concept. It is a thinking (rather a calculating) that involves the consciousness and the unconscious in the two perspectives:

1. The acceptance of the *imperceptiveness* of time and
2. The understanding of *mathematics* that describes interacting elements that happen simultaneously in time and in closed cause-effect-strings.

These two requirements seem to contradict each other.

Firstly: Time cannot be perceived and therefore cannot be stored in memory, unlike something we saw or heard. A building we saw, or a story we heard, can be retrieved; but not a certain length of time we lived through. We are in the time and move with it. To leave time and look at it from outside and to describe it in the same way we look at an object is not possible. To be in the time is somehow similar to sitting in a plane. We are in the plane and cannot look at it. We move with it; we are continuously in the same spot as the plane is, and we do not know how fast it moves with us, in what direction it moves, how far we move, and where we are between heaven and earth. We are - so to speak - in *absolute nowhere* with it, and so are we with the *time*. In the same way as we are a victim of the plane by sitting in it, so are we a victim of time; we are caught in it. We cannot go away from it to gain a perspective of it.

Secondly: Matter that functions can be looked at and followed on its path only if we know the time-behavior of the matter, only if we know its functioning in time, i.e., if we know its *MaFiT*. We have to know the laws under the command that matter functions. Knowing these laws implies knowing the mathematics of calculating the

time-functioning with which matter moves on its path in three-dimensional space, and also how a particular part of matter interacts at the same time with other matter whilst both are moving. Once the mathematical laws are known, the location of matter can be calculated as a function of time and also what this matter does with the other matter in their mutual interaction. We take the time out of the moving three-dimensional matter and make it - so to speak - the fourth dimension. Matter and time form a four-dimensional space.

It is difficult to acquire such abstract knowledge, but there is no other way if mystification is to be overcome. Such understanding would lead eventually to an interdisciplinary *universality* in handling the world concept. All faculties, be they sociology, biology, philosophy, theology, chemistry, arts, all would become interrelated into a universal science, the realm of *MaFiT*. At first glance, such a concept sounds pretentious. In order to combine two or several disciplines into one requires full knowledge of both or all of them. This already means a tremendous hurdle to be taken - and a fight with all faculties would arise. *Cobbler, stick to your last!* The capacity of our brain might be too small. Or the time of our life span to acquire such knowledge could be too short.

As a simple but illustrative example for the term universality we take the throwing of a stone as a three-dimensional device. It is the description of the path of a stone traveling through the air in two dimensions with time as the third dimension. The stone leaves the ground with a certain velocity and at a certain angle. Gravity brings the stone eventually back to earth some distance away from the point it was thrown. This phenomenon is already briefly mentioned in Volume I. Here we want to emphasize our concept of *MaFiT* anew and in clearer detail.

The MaFiT of Throwing a Stone

We have two ways to describe the throw of a stone:

the verbal description, and the *MaFiT* description.

A) The verbal description (as all faculties would handle it except engineering, physics, and mathematics) could be as follows: If a stone is thrown into the air, it goes up, makes kind of an arch, and comes back to the ground. The harder it is thrown, the higher up or/and the further it moves. This is what everybody knows by pure life experience. The knowledge is expressed in words. What the words say is sufficiently true for daily events.

B) The functional description as *MaFiT* can be expressed with the formula (F-1) (This formula was already mentioned in Volume I). A specific calculation results in the trajectory according to the Figure F-1. It appears as a parabola. In this formula (F-1), h is the stone's height above ground that is to be calculated; β is the angle from the ground the stone is thrown with the velocity v_0; g is the gravity constant ($9.81 m/s^2$), and s is the distance the stone travels away from the point where it was thrown.

$$h = s \tan\beta - \frac{g}{2} \frac{1}{v_0^2 \cos^2\beta} s^2. \qquad (F-1)$$

First we want to find the formula (F-1). In general, it is easy to apply a given formula; it is often hard to find an appropriate one. It is also relatively easy to handle mathematical equations; to set them is mostly quite a difficult matter.

The horizontal travel s is - horizontal velocity multiplied with time:

$$s = v_0 \cos\beta \, t, \qquad (F-1a)$$

The vertical travel h is - initial vertical velocity minus the slowing down due to gravity:

$$h = v_0 \sin\beta \, t - \frac{1}{2} g t^2. \qquad (F-1b)$$

From (F-1a) we get

$$t = \frac{s}{v_0 \cos\beta}.$$

Eliminating the time t in the expression (F-1b) results in the formula (F-1).

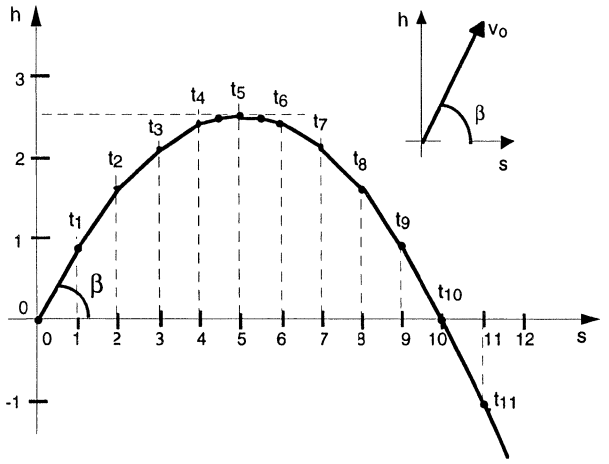


Figure F-1: Trajectory as a parabola.

The time intervals the stone travels from 0-time to t_1, to t_2, to t_3, ... can be designated as the fourth dimension. But as the parabola is here a two-dimensional figure, time is indeed only the third dimension.

It can easily be seen that the functional A-description is a human construct resulting from observed daily occurrence. To follow the occurrence in the B-form requires a sufficient knowledge in order to understand the process as a physical functioning, and to describe it with a mathematical formula. What is contained in the verbal A-description is merely a simple description of what

happens with or without our functional understanding. Thus, B makes A comprehensible, provided we understand the few basic laws applied here: the movement due to the velocity v_0, the angle β, and the influence of gravity, $-(1/2)gt^2$.

We might ask now some specific questions, because we want to know more:

a) How far does the stone travel before it hits the ground, and
b) What is the angle β the stone has to be thrown in order to travel the furthest with a given velocity v_0? We call the furthest distance s_{max}.

a) When the stone comes back to the horizontal ground, h is again zero after it went through its path. According to formula (F-1) we set h = 0, and s = s_{max}:

$$s_{max}\tan\beta - \frac{g}{2}\frac{1}{v_0^2\cos^2\beta}(s_{max})^2 = 0$$

We have to find s_{max}. One s_{max} in the formula above can be cancelled because s_{max} is not zero. In addition we set

$$\tan = \frac{\sin\beta}{\cos\beta}.$$

After some simple modification and canceling one $\cos\beta$, we find

$$s_{max} = \sin\beta\cos\beta\frac{2}{g}v_0^2. \qquad (F-2)$$

The question a) is solved when v_0 and β are given.

b) In order to find the angle β we reason:

If β is 0^0 then $\sin\beta$ is 0, if β is 90^0 then $\cos\beta$ is zero. In both of these two extreme cases, s in (F-2) is zero. Somewhere between $\beta = 0^0$ and $\beta = 90^0$ is the largest s, i.e., s_{max}. As g and v_0 remain constant, in the formula (F-2) the maximum value of $\sin\beta\cos\beta$ between $\beta = 0^0$ and $\beta = 90^0$ must be found.

There are three ways to do that. We make it a bit complicated and mention all three ways. We call them b1, b2, and b3.

In the b1-method β is varied and $\sin\beta\cos\beta$ is plotted as a function of β. This rudimentary procedure results in Figure F-2. It can be seen that s is a maximum at $\beta = 45^0$. This method is called *trial and error*.

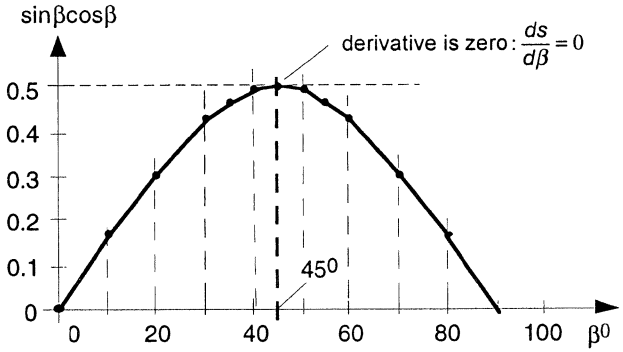


Figure F-2: $\sin\beta\cos\beta$ as a function of β in angular degrees.

The b2-method is a more scientific way. It can be called the engineering method. It is applied by using the trigonometric axiom:

$$\sin(\alpha + \beta) = \sin\alpha\cos\beta + \cos\alpha\sin\beta.$$

By setting $\alpha = \beta$ in this axiom we get $\sin 2\beta = 2\sin\beta \cos\beta$.
The value $\sin\beta\cos\beta$ is a maximum when $\sin 2\beta$ is at maximum. This is the case when $2\beta = 90^0$. Therefore $\beta = 45^0$.

The b3-method is a purely mathematical method. The procedure is to find the derivative of the equation formula (F-2a)

$$s = \sin\beta\cos\beta\frac{2}{g}v_0^2 \qquad (F-2a)$$

with respect to β and by setting this derivative equal to zero. The derivative is the slope $ds/d\beta$. If the slope is zero, i.e., if the tangent to the curve in Figure F-2 is horizontal, then we have the maximum h of the function s. When applying this mathematical method, there is no need to draw the curve Figure F-2. The derivative of formula (F-2a) is shown with formula (F-3).

$$\frac{ds}{d\beta} = 0, \text{ or } \frac{d\left(\sin\beta\cos\beta\frac{2}{g}v_0^2\right)}{d\beta} = 0. \qquad (F-3)$$

g and v_0 remain constant. In order to find β, it is sufficient to calculate the derivative

$$\frac{d(\sin\beta\cos\beta)}{d\beta} = 0. \qquad (F-4)$$

The function $\sin\beta\cos\beta$ is a multiplication of two functions of the same variable β, therefore we apply the formula

$$\frac{d(\sin\beta\cos\beta)}{d\beta} = \sin\beta\frac{d\cos\beta}{d\beta} + \frac{d\sin\beta}{d\beta}\cos\beta.$$

We know that

$$\frac{d\sin\beta}{d\beta} = \cos\beta, \text{ and } \frac{d\cos\beta}{d\beta} = -\sin\beta.$$

Now we get

$$\frac{d(\sin\beta\cos\beta)}{d\beta} = \sin\beta(-\sin\beta) + \cos\beta(\cos\beta) = 0, \qquad (F-5)$$

or

$$\frac{d(\sin\beta\cos\beta)}{d\beta} = -\sin\beta^2 + \cos\beta^2 = 0.$$

Where

$$\sin\beta^2 = \cos\beta^2, \text{ or } \frac{\sin\beta^2}{\cos\beta^2} = \tan\beta^2 = 1, \text{ or } \tan\beta = 1,$$

there is our s_{max}.

$$If = \tan\beta^2 = 1, \text{ then } \sqrt{\tan\beta^2} = 1 \text{ as well.}$$

And where $\tan\beta = 1$, $\beta = 45^0$.

A technician or engineer will draw Figure F-2 or follow the b2-path. A mathematician might prefer the b3-path. The b2-path is accurate and short. The b3-path can be considered to be the classical method.

It must become evident that there is a substantial difference between the superficial verbal description A) that requires neither any accurate knowledge nor the lengthy functional description. The B)-method presupposes physical knowledge and some comprehension.

In a similar way, although with many more different versions than the verbal description of throwing a stone in the air, we know

verbal descriptions of e.g., the terms hostility and consent, or hate and love. Verbal descriptions are emotional and depend on the person's concept that formulates a statement. What, we can ask for example, characterizes the two different loves: I love mashed potatoes and I love my children? Although everybody who speaks English might know what is meant in either case of love. Definitely *mashed potatoes* and *my children* are not interchangeable for the same mental term *love*. The word love is a huge syndrome of different perceptions.

So far, so good! But then here comes the first critical reader. She asks the question: Is the formula (F-1) really correct? Our answer is no. There are quite a few objections. Formula (F-1) is correct only

a) if there is a perfect vacuum in which the stone moves, and
b) if the ground is perfectly horizontal, and
c) if the gravitational lines are parallel and vertical to the ground, and
d) if there is no matter in the environment attracting the stone on its way due to gravitational forces; thus, making the problem 4-dimensional!

One could even add more conditions, e.g., if the stone does not lose weight (molecules from its surface) during its flight.

Formula (F-1) is therefore only an approximation of reality although it might already look quite complicated for the „non-physical" reader. This approximation, however, is so close to the real facts that we can live perfectly well with it. For a long-range rocket with a definite target, the formula (F-1) would not be satisfactory because the earth is not flat and there is no vacuum. Anyhow, any of the three methods of our calculation is multiply worth more than the superficial sentence: the stone goes up, makes kind of an arc and comes back on earth at a certain distance away from the point it was thrown.

Our lengthy - overdone and drawn-out - mathematical description of the traveling stone through the air is what we mean by matter functioning in time, *MaFiT*. As the horizontal speed v_s is constant, v_s is just $v_0 \cos\beta t$, and the time-parameter is simply the constant interval t_1, t_2, t_3, etc., as indicated in Figure F-1. Consequently, time is explicitly described!

How inaccurate a superficial truth can be (a verbal description), and how inaccurate still is a sophisticated truth (a mathematical explanation)! This example is of utmost simplicity. When it comes to living beings in social interaction with each other, it is obvious that the facts become immensely more intricate, and almost incomprehensibly complex. They become highly irrational.

The Struggle With Consciousness

The attempt of this Volume II is to show once more - as it was done in Volume I - that life is matter that functions in time, and - what we cannot prove yet - that emotions and feelings are probably also matter that are based on functional behavior in our brain. Global brain activities in this regard are already measurable. But to find descriptions of feelings the way we did here with the stone traveling through the air, might still be a long time away. First we must know what a single neuron in the brain does. *Man is only man on the surface. Remove his skin, dissect, and immediately you come to machinery,* Paul Valéry; and machinery is matter that functions.

Because we cannot know what time is, many phenomena in life cannot be described - yet - if they depend on time. We assume, for our purpose, that the continuous control function we have in our body multiplied with time (correctly spoken, integrated as a time function) provides us with consciousness. We postulate, as already mentioned:

Consciousness comes into awareness through the integral

$$\int (MaFiT)dt.$$

Such a daring postulate leads to the fact that every functioning matter that has self-control must also have consciousness. This functioning matter may be any living being. It may be a virus, a plant, an animal, or even a simple cell within a being. We humans still have to learn that we are just one kind of beings on the immense planet earth and that we are probably not the unique creature nature has provided with consciousness. Consciousness can be formed to be appropriate for the specific being's survival and therefore can have many different forms.

We risk a second audacious statement:

Once the functioning of a living being ends, there is no life anymore in this being as such. The living being, as matter that functions, is dead. It falls back into matter of its prime functioning, into biomass. However, the biomass is going to build other living beings with their specific pattern of functioning, indeed also obeying natural laws. Dying is somewhat similar to a clock that comes to a stand still. Once the clock ceases to run, it is no longer a clock; it is matter. Simple thinking might assume that there is a spirit or a soul in the clock that makes it operate, and that the spirit left the clock when it has ceased its functioning. It is obvious for our thinking that the matter and the movement cannot become two separate things; they belong together, they unify into each other to make the functioning matter a clock. It is impossible to take the movement, the soul, out of the clock and form a something in itself. It is just the same with a biological being. There is no soul in a being that continues to live after the living's being has ended. There is no soul in a person that lives on from *eternity to eternity* after the functioning of the person has *passed away*. It is the functioning that stands for the soul, and the soul ends when the person's functioning ends. We have to demythologize the world if we ever want to understand what we are doing in its actual reality. - What heretical cheek! By the way, to live ever and ever would be an infinite cruelty for a finite consciousness - or soul.

Mythology says: The body dies, its soul lives on. But we would not say: The clock dies; its soul lives on. We go to the clock-maker, or replace the clock's battery - or throw the dead clock away. The opposite is true: The soul of the clock dies, it stops being; its matter lives on. It is the same with us and all living beings: The soul, the functioning dies, the body lives on - as biomass to become food for other beings - or as gas and smoke in the atmosphere and ashes in the urn! If we reproduced, then some biological characteristics of ourselves continue in the descendants. This might be our very limited *eternity*!

As the physical world is so enormously complex and difficult, in the end impossible to be perceived in full with our limited brain capacity, at all times people transfigured its complexity into simple symbols. Such symbols gave them a meaning for forming notions and definitions of the world the way it came into being and the way it was built. Immense religions were created with powerful gods, good and bad ones, and with angels and devils. We have monotheisms and polytheisms and indeed all kind of attributes of them to find an explanation for good and evil, for miracles and catastrophes. In nature there is no good and evil. Lawyers, politicians, dictators, and creators of religions set up thousands of laws and rules, hoping this would be a way to control and rule our behavior - or, and often rather, to exploit the fellow man in their egotism for their own personal gain. Ambrose G. Bierce said: *Politics - a strife of interests masquerading as a conflict of principles: the conduct of public affairs for private advantage.*

Indeed, to imagine gods as a superior power who take the responsibility for what is happening on earth and in space is an easy way to free us from hard thinking. God Nature created us to such a perfect extent that we are able to exist in our environment and to defend it, to eat other living beings for survival, and to reproduce, all that without much - or any thinking at all.

We know from dreaming that our unconscious is a huge world inside our skull. On one hand, this part of the brain creates its own

images and pictures and transfers them partly into our conscious brain. From there we project such visions in the outer world and give, in this way, birth to fictitious beings of all kinds outside of us. On the other hand, these unconscious symbols are conveyed from one generation to the next. The very young malleable brain becomes indoctrinated and mythologized in order to become fit for survival in the environment it is born into. Once the brain is formed, it defends its content at all costs, whether the belief has a cultural content, or whether it is pure fiction, or direct blunt lies.

Hence, to defend our territory and to feed us requires killing of other beings: humans, animals, and plants. This cruelty is forced on us by nature. It cannot be avoided with ethical thinking alone, or with some forms of humanistic behavior. But with knowledge of nature's design and purpose we should become able to find less cruel ways to live together.

Nature does not qualify us to be something special; it does not put us on a higher level than any other living being. We need each other for better or for worse. It is we, we ourselves, who set up human rights and, alas, have forgotten so far to provide similar rights for animals and plants.

Due to our self-admiration (to be the image of the Christian God, or the chosen ones by Allah, or whatever) the population on our planet has increased to a number of inhabitants that killing each other becomes a necessary catastrophe. And this overpopulation could end in suicide for mankind. To present a rudimentary understanding that we are matter that functions in time - and nothing more, although incomprehensibly - is our endeavor laid out in this introductory context of the two Volumes I and II.

Demystification from being the image of God into the prosaic unromantic physical reality becomes an urgent necessity and - no doubt - it will create uproar as well. The awareness that the human being's value is not worth more than the value of any other creature is a very bitter pill we have now or later to swallow.

The Two Approaches

In Volumes II and I the aim is to give an insight into the basic functioning of the two contradictory behavioral modes, *enmity* and *amity*, i.e., the two archaic forms of social interaction. We will show how *hostility* and *consent* (or friendship) are based on functional matter with an unconscious exchange of information between two partners and how, this way, either a hostile relationship or a conciliatory togetherness becomes formed. The uproar of the world will come upon us because we quantify amity and enmity, friendship and hostility, in order to calculate their characteristic behavior by means of the computer - and we proclaim that there is no soul after death that shall have an eternal life. Our biological-social functioning will end. Reproduction transfers part of our behavioral characteristics into the next generation via our genes and it is this way that provides care for an earthly *limited eternity*. We must be humble enough to be satisfied with such a limited „eternity"!

In venturing into an investigation where time - time, that cannot be perceived - plays the main role in life, we basically have to distinguish between two topics:

a) The momentary action in an ongoing process, i.e., when action is in operating conditions. This is the *dynamic state*, or the *dynamic homeostasis*, and
b) The starting position and the final result at the end of a process, the *steady state* position after a set goal is reached and maintained. We call this end state the *steady state homeostasis.*

First we want to achieve topic b). We want to know how well we achieve the steady state. Then we come to topic a). Topic b) is less demanding than topic a).

Referring to our two main subjects - amity and enmity - it will come to light that hostility - indeed defined as functional behavior in time, i.e., in the dynamic homeostasis - is tremendously favored by

nature. Hostility ensures considerably greater willpower to exert in the state of ongoing action for goal achieving, compared to conciliatory behavior that allows only scant willpower in an ongoing process. Thus, topic a) deals with the instantaneousness.

Concerning the final achievement, the steady state homeostasis, of an undertaking, topic b), hostility has a huge disadvantage. It shows a great and fast-achieved damage to the parties that are in a hostile disposition toward each other. Friendly cooperation, on the contrary, results in mutual help in regard to final goals. But it takes much longer to get there than in hostility.

Enmity is favorable concerning willpower during the fight for one's own sake, and this happens on a highly emotional level and at high speed. Amity is favorable concerning the mutual final attainment in self-realization, whereas the willpower for one's own ego has to be small and the acting speed in consentient togetherness is low.

In short:

In a dualism of partners in an ongoing process, topic a):
in enmity, self-power and speed are high;
in amity, self-power and speed are low.

At the end of an event, i.e., at the achieved attainment, topic b):
in enmity goal attainments are very low;
in amity goal attainments are high.

Therefore, both of the behavioral patterns, enmity as well as amity, have a positive and a negative aspect.

We measure these two behavioral patterns in regard to the *autonomous* behavior of partners, i.e., partners striving toward their goal not being connected within a dualism. This means that in enmity, goal attainments are much lower than they are in the autonomous state, and in amity, goal attainments are almost as high as they are in the autonomous state.

This point requires some precision. We take two structurally equal partners for giving an example.

Assuming that in autonomy the willpower of each partner is 8 at the maximum for maintaining homeostasis; then both their attainments will be 89% out of attempted 100%.

In strong enmity, the willpowers will be 4 at the maximum; the attainments will be 44%. But in autonomy with a willpower of 4, the attainment would be 80%. Therefore, in enmity the loss is 80%-44% = 36%.

In strong amity with the same partners, the willpowers - again at the maximum - will be 2 only, the attainments will be 85%. But in autonomy with a willpower of 2, the attainment would be 67%. In amity the gain is 85%-67% = 22%.

Compared with he autonomous willpower of 8 and the attainment of 89%, enmity brings a loss of 89%-44% = 45%: whereas amity brings a minor loss of 89%-85% = 4%.

Indeed, hostility and friendship can be weak or strong. But whether a relation is hostile or friendly, in both cases the intensity to exert one's willpower has its limits. If the interacting relation becomes too intense, they both run from stable operation into instability and the relationship will fall apart, both in enmity and amity. The stability requirement is called *homeostasis* in biology. Homeostasis is of utmost importance in the state of momentary action, topic a). But also at the end state, topic b), homeostasis has to be maintained because the systems keep staying alive.

It sounds strange that an inimical relation can become instable, or on the contrary, that it can be called stable. The popular opinion considers a war, an enmity, as something instable in a social or ethical context, although history shows that enmities and wars last longer than amities and periods of peace. We will experience that the potential for maintaining enmity is multiply times larger than it is

for a friendship. Hostilities are robust whereas conciliatory systems are fragile. It also occurs that hostile systems are almost insensitive to disturbances, whereas friendly relations sense disturbances with great reactions. Such are some facts the investigation already discovered in Volume I, and they will be emphasized again in this Volume II.

In hostile relations, if one party is much stronger than the other, the weaker will be severely damaged or even be killed if he cannot separate himself and run away - just to mention another specific fact we will encounter.

There will be many different parameters that play a role in social systems. The effort, therefore, to investigate such systems mathematically is enormous. It seems that nature hides its secrets very carefully; or nature made us functioning automatically for our ease. To discover natural laws is cumbersome and requires great patience in studying interdisciplinary situations - as we already indicated with the elaborated throw of a stone. Physical knowledge and the capability to handle nature's laws is the key for understanding the world. - How long did mankind exist before the law of gravity was found by Newton? And before this occurred, for how many thousand years the earth was considered to be flat before it was allowed to be seen as a sphere by religious authorities. Today the belief in a flat earth seems to be ridiculous. - For how long did the Catholic Church pretend that Rome was the center of the Christian Kingdom? And it still has the queer idea that Jesus Christ and his father are the only right gods for saving mankind: *Dominus catholicus Jesus!* (Pope John Paul II). Today we know that religious denominations are predominantly longing for power to force conformity and - sit venia verbo - for money for the existence and expansion of their congregation.

The following statement could sound arrogant: He who knows no physics - and in parallel, no mathematics - has to manipulate his thinking with subjectively shaped words that are also subjectively emotionally motivated. But as words are the content of our

languages and as languages are the main means for communication, they still make up our mutual understanding - and as well our misunderstanding. - But even mathematics has to be explained with words.

To go back to your risky topic with a few more thoughts:

What Is Consciousness?

We stipulate that a functional entity that has a set goal and makes its way to the goal and knows at any instant of time how close it is to this goal, because it has self-control, that such an entity shall have consciousness about its doing. Self-control over time in the form of a self-control-time-integral generates consciousness. As we cannot perceive time, we do not know what consciousness really is.

Let us hypothetically put forward two different kinds of consciousness:

A. An entity's own consciousness.
B. The entity's consciousness together with the consciousness of a related being.

A. One's own consciousness

There is an axiomatic statement: *An identity cannot perceive itself.*

By saying that, we explain our opinion with the following allegory:

1. A toothpick does not know how it came to be, how and why its concept is formed. It has no goal and therefore no self-control in any regard. Therefore, the toothpick has no consciousness.

2. A machine that manufactures fully automatically toothpicks has a concept of toothpicks, because it makes this object after the necessary material and energy was given to it. But the machine

does not know how it came to be, how its concept is formed. It does not have self-control of itself. It cannot, e.g., control the form and the quality of the toothpicks it manufactures. The machine does not have any self-control within the realm of toothpicks; it does not have consciousness concerning the manufacturing of toothpicks. But if the machine had been given the ability to control quality and shape of the toothpick, and if it were able to automatically throw out toothpicks that did not fit, then we would say that it has consciousness in regard to the toothpick over time as long as it produced toothpicks. The machine then had a little toothpick-*soul* in this respect. As soon as the machine would be shut off, this little soul would have been gone into oblivion. The toothpick-machine would be dead. The functioning of the operating machine would be its soul.

3. A human being that has designed and manufactured the machine would know the concept of the machine and the toothpick, because he made the machine after the necessary material and energy (that is food and education) was given to him. But the human being does not know how he came to be, how his concept was formed. The human being, the engineer, has no self-control concerning his own entity. He therefore has no consciousness of himself. But he has consciousness concerning the machine he built. When he built the machine he had a goal in mind that he wanted to attain. If the machine does something right or wrong, he knows this in the course of time by checking the machine and the make of the toothpicks. Thus, the engineer makes up a part of the toothpick-machine. He has consciousness about the machine. He has a limited consciousness within the environment that he is able to control. But he has no consciousness about himself as entity. He has no consciousness about the functioning of his brain or other organs of his body, e.g., how his hair grows. God Nature who created this human being only *knows* how he made the human being that made the machine that makes toothpicks.

More so, the human being has the cardinal goal to exist. Therefore he has a consciousness about his existence, he knows that he exists - in relation to the goal survival: *Cogito, ergo sum.*

B. Consciousness about the next higher ranked being

Therefore: how shall the toothpick that has no consciousness about its own existence know anything about the consciousness of the machine that made it? Impossible!

How shall the machine that has no consciousness about its own existence have consciousness about the human being that made it? Also impossible!

How shall the human being have consciousness about the consciousness of *God Nature* that made him? Impossible as well!

We only have a partial-consciousness of our immediate need for survival and reproduction. And we have no consciousness of our next partner, whether he is on an equal social level or on a level somehow higher or lower. The other person lives inside himself with his partial consciousness. We might ask out of curiosity: do the Siamese twins (the Indian twins 2003) that have a common lower part of body, but chests grown together and two separated heads with common liver, bladder, intestines and genital, with one pair of legs, but two pairs of arms, have a common consciousness or two individual consciousnesses? We do not know because we are not in them, neither in their body, nor in their brains' functioning.

The provoking question we pose now is: does *God Nature* have a consciousness about where *HE-SHE-IT* came from? We must say NO; or better we are humble and say we cannot know.

The explanation for not being able to answer such questions is that our brain is only a partial substance of a *world consciousness* - if such a term does make sense at all. We have some kind of

consciousness that gives us the ability to survive within our by nature determined limits.

Why shall we then have the courage in this book to assume that we can amalgamate our unconscious with our consciousness and even reach into the consciousness and unconscious of a partner? The trick is that we can mathematically operate with time, although time cannot be perceived with our consciousness. But time can figuratively be shown graphically, and it can be calculated with the help of mathematics. This is - we might say - the miracle of mathematics. We used mathematics above with the discussion of the throwing of a stone. Mathematics, however, can be applied for much more complex events. This was already our hypothetical configuration in Volume I and will be the path in this Volume II once more.

Nota bene: Psychologists who analyze handwritings say that there are people who are able to sense unconsciously the unconscious of other people. This capability shall show itself in the handwriting at the lower loop of the letter g and at the down stroke of the letter f of the script of such a writer. The g-loop and the f-down-stroke are headed to the right direction for connecting to the next letter, figuratively to the next person. A g-loop, as requested, does not exist anymore. Figure F-4 below illustrates such a formation. It is said that that part of the handwriting that covers the area below the base line expresses the unconscious sphere. Indeed, such statement, if it is correct, can be valid only within the symbolism of the writing patterns of the Western world: The direction to the right is right and is headed to the next person the writer writes to.

Figure F-3: The Indian Siamese twins (2003).
The Figure belongs to a comment on page 36.

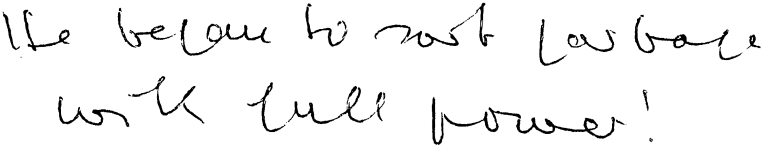


Figure F-4: Sample of the handwriting of a person who is supposed to be able to sense the unconscious of another person but not knowing consciously about this capability.

I. The Hypo- and the Hypersensitive Being

Introduction

Awareness of a person's own action is strongly related to this person's conscience. An unscrupulous being blocks off his *awareness* and does not care about the consequences of his doing. Such a person is an *autocrat*. He is *hyposensitive*. His ego is inflated. On the contrary, a person of excessive awareness, of too much forbearance, can become timorous. He is *hypersensitive*. His ego is rather depressed.

The autocrat with his oversized ego sets off toward his goal with unalterable direction and reaches his goal well, even overshoots it easily if nothing hinders him. The forbearing person, the hypersensitive one, operates leniently and, as a result, achieves only part of his desired or deserved aim.

The lower a person's awareness is with which he realizes and rates his doing, or the more he blocks off self-reflection, the more straight forward and effectively his excessive willpower works. This fact exists whether the person's doing is considered to be ethical or corrupt by the environment, whether it is in line with the society within the person lives, or whether he is a crook. The verity is universal. It is a *Natural Law* independent of moral, social, or religious notions.

The opposite is equally true. The higher a person's awareness is with which he perceives and rates his doing, or the more self-critical, the more subtle his reflection is, the more cautious and ineffectively his willpower will work. The person of too much sensitivity for his own actions can even fall into a despondence.

As the autocrat is socially and politically a public threat, the timid person rather lives in the background and the media gives emphasis to the autocratic behavior. The autocrat shows off. It is the autocrat that figures in the general public. He is the outstanding

example of a hurting egoist.

Awareness - as we define it herein - is equivalent to the feedback signal within a person. This signal originates in the person's unconscious. When his action is in the process, the feedback signal continuously tells over time what portion of the goal he wants to reach, he has already attained. - The effect of the internal feedback, therefore, is the very topic of this chapter.

The New Webster's Dictionary gives several definitions of the term feedback. Four of these are:

(a) The use of the output of a system to control and correct discrepancies in the operation of the system,
(b) Response following an action,
(c) A partial return of the end product of any process to its source,
(d) Sense of responsibility for the results of the own actions.

All four notions are embedded in our specific consideration of human behavior. We consider (d) as the dominant definition.

It will be found that the stronger the feedback is suppressed or - what comes to the same - less it is felt, the greater a person's willpower can be with which he pushes himself toward his goal. But such behavior involves danger. Firstly, there is the possibility that the person becomes unstable within him and loses the capability to strive toward his goal. This happens when he wants to exert too much willpower. His greed for power can become such that he ruins his chances of success. Secondly, with too much exerted willpower, it is easy to overshoot the mark, which has the consequence that the environment opposes the bold action when the inflated person's daring behavior becomes recognized. This is the case when strikes and revolts begin to fight the megalomaniac.

The model of the single loop verifies the operation of the

unconscious feedback signal, i.e., the *awareness*, and the consequences by hindering the conscious perception of this unconscious signal or by being unable to sense it.

The same model serves to describe the outcome when a person's awareness is excessive. Sensitivity can be so overwhelming that the person no longer acts to his full capacity. The goal can then no longer be reached to its full extent. The person might even collapse, e.g., in despair.

The Description of the Unit's Model

Although the model of the unit that describes the person is quite long-winded in Volume I, it might be helpful to repeat the fundamentals again for easier mental references.

Figure I-1 depicts the basic structure of an individual's functioning in regard to the notions to be investigated. It is a feedback-loop producing self-control that, in turn, provides awareness. Self-control, or awareness, takes place due to the feedback signal. This signal also can be called inner-response, related to responsibility.

The purpose of the loop's configuration is to reach the goal u despite the entering disturbance (or disturbances) d that penetrate from the environment with which the person is related to (exogenously) or from disturbances coming from inside the person himself (endogenously).

The goal u can be called self-realization, because whatever a being does, the behavior is always in regard to the realization of the person himself: *Proximus sum egomet mihi*, I am, myself, the next.

In order to approach the goal u, a willpower is needed. This willpower is indicated with the symbol G. As every behavioral

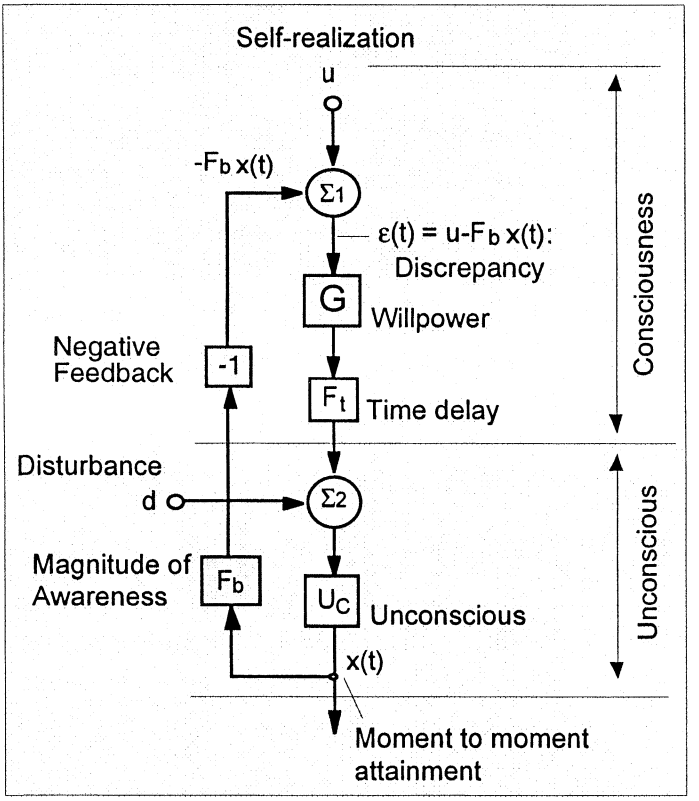


Figure I-1: Elementary functional model of the individual.

u	Goal self-realization (assumed to be constant);
G	Willpower or will for self-realization;
x(t)	Actual attainment, changing from moment to moment;
ε(t)	Difference (discrepancy) between goal u and actual attainment x(t);
F_t	Package describing the time delay;
F_b	Factor of awareness, feedback factor;
U_C	Unconscious (in Volume I called S_{11});
d	Disturbance signal (assumed to be constant);
Σ1, Σ2	Summing points of variables.

action to be executed needs time; an element describing the time dependency of acting is incorporated. This is the transfer function F_t. More about this function will be explained some lines further down.

The feedback signal taken negatively $[-F_b x(t)]$ compares continuously with the desired goal u the temporarily reached and by F_b deformed goal attainment x(t). The difference, that is what is not achieved yet, is named $\varepsilon(t)$. ε stands here for *error* (a technical term). This fact is expressed with the equation (I-1). The person's intention is to make the error ε as small as possible in order to come as close as possible to his goal u. For this operation he needs his willpower G.

$$\varepsilon(t) = u - F_b x(t). \qquad (I-1)$$

In equation (I-1) it is assumed that the goal u does not change as a function of time. That means that the goal self-realization (u) does not show time dependency u(t), it is just u, representing a constant. For easier reading, the notation of time, (t) for x(t) and $\varepsilon(t)$, will not be carried along - although time dependency exists because the process goes on in time. The individual is living. Thus, equation (I-1) becomes a simpler notation like equation (I-2):

$$\varepsilon = u - F_b x. \qquad (I-2)$$

The term F_b, that is the transfer function of x, is a deforming factor. It is multiplied with x and determines the consciously perceived magnitude of the feedback signal. F_b can make x smaller or larger before being compared with the goal u. In other words, the error ε within a person depends upon his awareness of what he is doing, or better of what he is achieving at every instant.

The loop, which is the entire person, becomes disturbed mainly because of the environment within the person lives (exogenous disturbance). The disturbance signal is called d(t), or also simply d.

For simplicity, d is considered to be constant and - also for simplicity - of equal magnitude as the goal u. Indeed, d can be smaller or larger than u. The influence the disturbance has on the loop becomes positive or negative depending on the effect it has for the person. A positive effect of the signal d means help, or a reduction to the distance on the way to the goal u. The difference $u-F_bx = \varepsilon$ becomes smaller. On the other hand, a negative effect increases the distance to the goal. A negative d-effect pushes x further back on the way to the goal; it increases the discrepancy ε. This will be shown with equation (I-4) further down.

In order to attain the goal u as accurately as possible, the feedback signal $-F_bx$ must be -x, i.e., F_b must be +1. This fact will be shown in Figure I-2.

To begin with, the time factor F_t is disregarded. In other words, F_t is put to +1. The transfer of the willpower G through F_t is, therefore, instantaneous and unchanged. Later in the study a time-delay will be incorporated for a somewhat more sophisticated - and more realistic view. This F_t will be needed for the dynamics of the loop, i.e., for its time dependency. To put F_t equal to +1 is equal to the end-state of a goal approaching process. It is the final attainment after a goal u was set. It is the *steady state attainment.* Because the description of the end-state is much easier to perceive than the dynamics, we first shall discuss steady state situations.

F_t is a necessary incorporation to take care of the time needed to act. The smaller the time delay, expressed with F_t, the faster the individual acts and performs. But for human beings there are other means of approaching u faster than with the short time delay F_t alone. In Volume I it is shown that derivative action - called anticipation - is a means of accelerating goal approach. Anticipation is described with the derivative action of the error signal: $d\varepsilon(t)/dt$. This feature is not considered herein. The focus in this Part I is only on the awareness factor F_b. The incorporation of

F_t as a time dependent transfer function will follow in the segment called „The Dynamics".

The purpose of the loop in its total concept comes to light when it is expressed mathematically and represented graphically. Then, and only then it becomes intelligible. This representation follows. Because the human brain can only perceive situations that happen at the instant, the brain cannot perceive continuous circular functioning of cause-effect-cause behavior as the loop action is. It is the mathematical representation that gives insight into the time-functional action, into the loop-behavior. And via the mathematical path a new somehow difficult thinking, the *loop-thinking*, will eventually be achieved.

The Mathematics of the Loop

In order to grasp the idea of loop-thinking, it is advantageous to know about the construction of a loop.

The feature of Figure I-1 is the following. At every instant when loop action is in process, the momentary x is composed of everything that comes - pictorially spoken - vertically down in this figure. This attainment x is composed of the following three parts, x_1, x_2, and x_3:

$$x_1 = GF_tU_Cu,$$
$$x_2 = \pm U_Cd,$$
$$x_3 = -F_bGF_tU_Cx.$$

Thus, the sum x is

$$x = x_1 + x_2 + x_3,$$

or

$$x = GF_tU_Cu \pm U_Cd - F_bGF_tU_Cx. \qquad (I-3)$$

The signal x_2 can be positive or negative, depending on the effect the disturbance d has for the loop. Rearranging equation (I-3), x

becomes equation (I-4):

$$x = \frac{GF_tU_C}{1+F_bGF_tU_C}u \pm \frac{U_C}{1+F_bGF_tU_C}d. \qquad (I-4)$$

Equation (I-4) says that the goal attainment x is a function of the desired goal u, the influence of the disturbance signal d, and of all the acting bits and pieces of the loop, that is of F_b, G, F_t, and U_C. These four characteristics F_b, G, F_t, and U_C define the character of the individual. The attainment x becomes a function of two inputs into the loop, the goal u and the disturbance d.

$$x = x_u + x_d.$$

It is advantageous to consider first the two parts, x_u and x_d, separately; that is, x_u when d is zero, and x_d when u is zero. This way, the two inputs come better to light.

The signal u is always positive for the person himself. The goal u is what a being wants to attain. Therefore, u shall be +1, or 100%, without any ethical value! Ethics is a subjective term used by a specific person and only appropriate to that person. It depends on attitude, culture, education, and religion. Nature has no ethics.

The signal d is somewhat more critical. Its effect can be positive, (+1), or negative (-1), or any value between (+1) and (-1) - or even lager than ±1. If the effect d has on the goal striving process is negative, d is to be taken with a negative sign. In technical control systems, generally d is negative. Its influence is unwanted. This is especially the case in the steady state or *flux equilibria*, the end state that has to be held.

Firstly now in (I-4) the term d is set aside by putting d = 0. Thus, equation (I-4) becomes equation (I-5), our first concern. F_t in our steady state position, i.e., at the end of a goal approach, is set to +1. The influence of the time is passed. And also U_C will be set to +1, because it is not a parameter of interest. That the unconscious

of a person, which is indeed a full and highly complicated world in itself, is slovenly put to +1, can be shocking for psychologists. To justify this mental crime we must refer to Volume I, where an explanation for doing so is given.

$$x_u = \frac{G}{1+F_bG}u \qquad (I-5)$$

This equation (I-5) is the expression to be investigated in order to explain this section's real meaning, i.e., the influence of F_b.

The Investigation

(α) The Feedback signal F_b is exactly +1.

In normal situations, in biological and technical control systems, the feedback factor F_b is equal to +1. Then the negative feedback -x is a correct measure of the momentary attainment. With this condition, equation (I-5) changes to equation (I-6). In this equation the goal u is put to +1, or to 100%.

$$x_u = +\frac{G}{1+G}. \qquad (I-6)$$

Figure I-2, curve A depicts this extremely important expression (I-6).

Because our investigation in this chapter is based on these two equations (I-5) and (I-6), we explain the feature of it although Figure I-2 was already a predominant investigation in Volume I.

The curve A shows that the higher the willpower G is, the higher the final attainment x_u will be; but the curve x_u as a function of G is by no means a straight line. The final attainment x_u is not proportional to the willpower G.

If G = 1, the attainment x_u is 50%. With four times this willpower, with G = 4, x_u is only 80% and not 4 times the attainment of G = 1, which would be 200%.

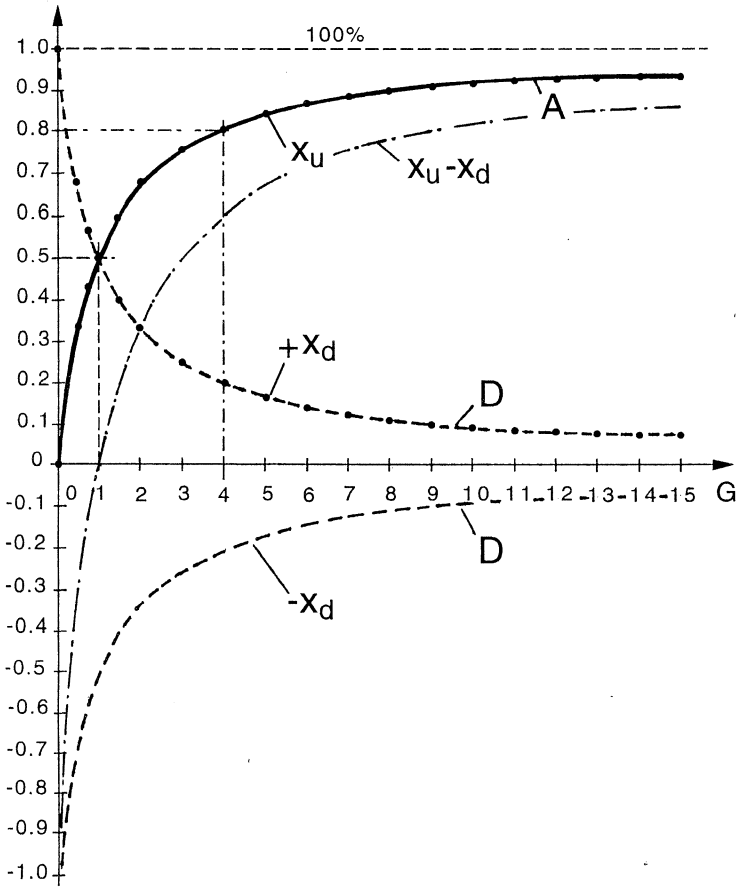


Figure I-2: Goal attainment of self-realization, x_u (curve A), and effect upon disturbance, $\pm x_d$ (curves D), as a function of the willpower G. Feedback F_b = +1.

By increasing G, the curve flattens out. The higher the attained x_u, the more willpower G is needed for an additional increment Δ of x_u, i.e., Δx_u. The higher up one is on the ladder with a certain willpower G toward one's goal, the harder it is to achieve a further improvement, a further increment Δx_u by increasing the willpower G. It is impossible to attain 100% of the goal u, which means what the loop is actually trying to reach. In order to attain the 100% goal, the necessary willpower G would have to be infinitely large, i.e., G would have to be ∞.

It is the feedback signal -x that flattens the curve. - But why is feedback so important? The constant immediate reporting back from the unconscious to the consciousness is necessary because disturbances can occur at any time; and they always come in daily life situation.

What is a disturbance's influence when the disturbance enters the loop? Let's take the formula (I-4), but with $F_t = 1$ and $F_b = 1$, and make it equation (I-7).

$$x = \frac{G}{1+G}u \pm \frac{1}{1+G}d. \qquad (I-7)$$

With u = 1, and also d = 1, formula (I-7) becomes formula (I-8).

$$x = \frac{G}{1+G} \pm \frac{1}{1+G}. \qquad (I-8)$$

It can be seen that the two parts become +1 when added together with a positive influence of the disturbance,

$$x_u + x_d = +1 \text{ or } 100\%;\ d = +1 \qquad (I-9)$$

The effect of a positive, i.e., of a helping disturbance d, is such that the sum of x_u and x_d together makes 100% (This implies that x_u and x_d have the same effect and equal magnitudes). The

perspective of d, and the dimension that the influence d has on the person, must not be the same. It is the *effect* the disturbance d has that counts. A negative d-effect damages the goal attainment x_u. This damage has the opposite effect on x. And vice versa: the positive effect of d increases the goal attainment x. But - as Figure I-2 illustrates - in both cases, the higher the willpower G is, the larger x becomes, and the smaller the influence d has! Note that in the expression of x in equation (I-8) the factor G is only in the denominator. G influences d by pulling down, i.e., by making x_d, the influence of d, smaller.

Without any willpower (G = 0), the influence of the disturbance d is ±100%. x_u becomes equal to x_d. The disturbance comes fully into play; nothing of the wanted self-realization u will be attained. The rule is: no willpower G, no gain x_u. *Ex nihilo nihil fit* - Nothing comes from nothing. Willpower is necessary for self-realization! And self-realization means to exist. For example, with a willpower factor G of 9 the attainment x_u is 90%, and a positive influence of d, $+x_d$, is only 10%. Both together, x_u plus x_d, make 100%. In Figure I-2 the curve x_d, which is

$$x_d = \pm\frac{1}{1+G},$$

is marked with D. With a weak willpower of G = 1, $x_u = +x_d$ = +50%, and x_u+x_d = 100%. But with $-x_d$, x_u-x_d becomes 0. Life is such that x_d is mainly negative! Therefore, the curve marked with x_u-x_d in Figure I-2 is definitely life-domineering.

(β) The Feedback signal F_b is smaller or larger than +1.

Our question posed is now the following: What is the goal attainment when the feedback signal x becomes smaller or larger in its amplitude, i.e., when the factor F_b becomes smaller or larger than +1? With F_t = 1 formula (I-4) becomes formula (I-10).

$$x = \frac{G}{1+F_bG}u \pm \frac{1}{1+F_bG}d. \qquad (I-10)$$

Looking only at the part x(u) with u = 1, the expression for x_u is equation (I-11).

$$x_u = \frac{G}{1+F_bG}. \qquad \text{(I-11)}$$

The parameter F_b is now the important variable. It shall be made, firstly, smaller than 1, say 0.5. The feedback signal F_b, which tells how much of x has already been attained, becomes obstructed. Only half of it comes *up* from the unconscious to the consciousness. The awareness of what the person is doing (for his own self-realization) becomes reduced. The response, or the responsibility is only 50%. The autocrat does not want to realize or is not capable of fully recognizing how much his attainment really is, i.e., what he is *doing*. He just wants to exert his willpower G in somewhat uncontrolled action. Or better expressed, he wants more than what he has. With F_b = 0.5, equation (11) becomes equation (I-12).

$$x_u = \frac{2G}{2+G}. \qquad \text{(I-12)}$$

Figure I-3 depicts the goal attainment x_u for this situation. It is the top curve marked with B. For comparison purposes, the curve A of Figure I-2 is incorporated. The goal attainment x_u of B becomes larger than x_u of A. For G = 1 it is now 67% instead of 50% in Figure I-2, and for G = 4, x_u becomes 133%, and no longer only 80%. The person can easily overshoot his goal! With a willpower of G = 2, 100% of the goal is already attained. The attainment x_u that can be attained with G = 8 is 160%.

The two curves A (x_u and $\pm x_d$) with F_b = 1 belong to a normal person. The two curves B with F_b = 0.5 belong to an autocratic person. And the two curves C with F_b = 2 belong to an oversensitive person. The explanation for F_b = 2 follows.

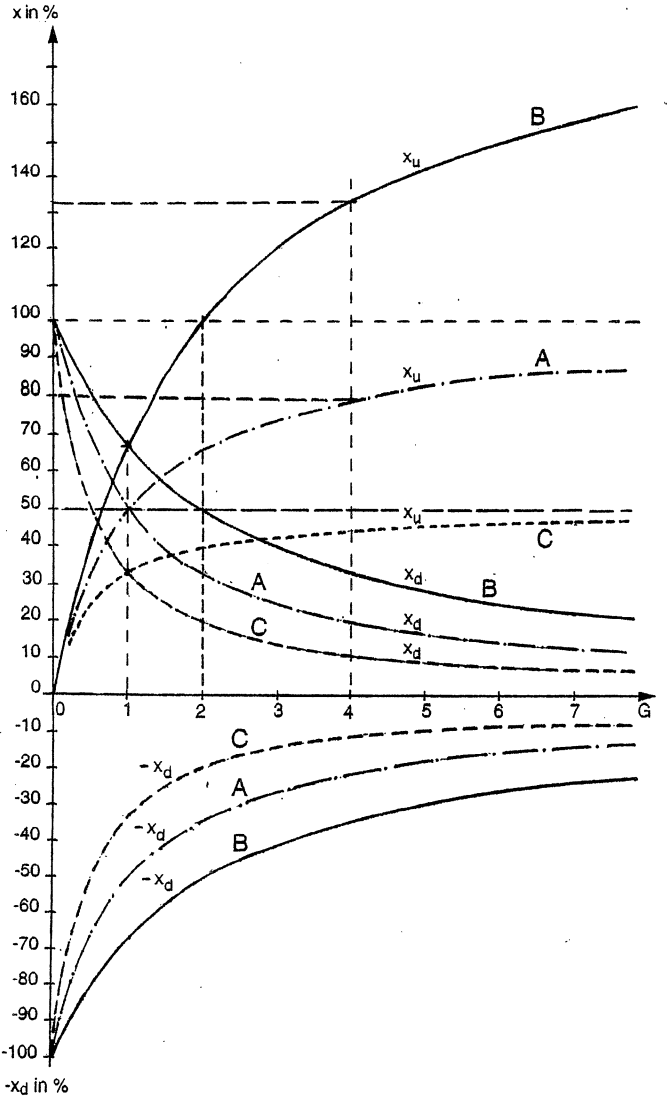


Figure I-3: Goal attainments x_u and effects of disturbance x_d as a function of G and with awareness factor F_b as parameter. Curves A are x_u and x_d of a normal person, curves B are x_u and x_d of an autocrat, curves C are x_u and x_d of a timid person.

The interpretation for $F_b < +1$ is: reduced or faint perception of the doing, or - what comes to the same - denied awareness, increases goal attainment far above 100%. The egoist can overshoot the mark. Disregarding self-control, disregarding what one does, makes the achievement erroneously going up! This is the way power-hungry people act. They don't care what they do. They simply do: period. And every so often, they can become corrupt. An autocrat generally is a despot. *Toute grandeur est dans l'assaut,* Platon said.

What is the problem concerning the effect of a disturbance? The effect of d on x with $F_b = 0.5$ is as equation (I-13) indicates.

$$x_d = \pm\frac{2}{2+G}. \qquad \text{(I-13)}$$

The effect of d on x becomes almost doubled compared with the case for $F_b = 1$. x_d is also about twice the amount compared to the situation when $F_b = 1$, i.e., at normal sensitivity. Being insensitive brings about better goal attainment, but also higher effect of a disturbance. In the social world the benefit for exerting bold power is double-edged; disturbances very often occur and work against the execution of willpower. There are strikes, revolts, and rebellions.

What now if the contrary happens: hypersensitiveness instead of hyposensitiveness? For a person who is hypersensitive, F_b shall be taken as 2. Then formula (I-9) becomes equation (I-14).

$$x = \frac{G}{1+2G}u \pm \frac{1}{1+2G}d. \qquad \text{(I-14)}$$

Looking at x_u first, and with $u = 1$, the expression (I-15) is valid.

$$x_u = \frac{G}{1+2G}. \qquad \text{(I-15)}$$

The goal attainment x_u of the hypersensitive person is shown in Figure I-3 with the curve C. The maximum attainment, i.e., at very high willpower, is only 50% of u. Too much sensitiveness is detrimental to self-realization! Sensitivity reduces the effect of willpower. It is in vain to force a very sensitive person to exert more willpower in order to reach a much higher level of his goal. If his unconscious renders a feedback signal of 2, then even an infinitely large willpower achieves only 50% of the set goal.

If a disturbance d becomes involved as - say a psychiatrist who wants to help - the patient absorbs only about half of the therapist's signals x_d. The second part of the formula (I-14),

$$x_d = \frac{1}{1+2G}; \; (d = 1),$$

indicates that the help signal d is divided by about 2G and not only by G as this is the case in Figure I-2. The effect of the disturbance signal d, $\pm x_d$, is indicated in Figure I-3 with the curves marked with C.

A person suffering from depression, because he is oversensitive, does not promise much success for a cure - unless he is capable of reducing his awareness. He must be able to become less mindful. Otherwise achieving the goal to the highest potential remains an unattainable wish. But the awareness is originated in the unconscious, and the unconscious is not directly accessible by means of the consciousness.

All three x_u-curves, A, B, and C, are similar in that they all start at G = 0. When there is no willpower for one's own realization, the disturbance takes full control and *does it* for the disturbed person by 100%! A hint to drug addicts where the negative effect of d has its say: no x_u, and full $-x_d$, (if d = -u).

The ratio, disturbance $\pm x_d$ divided by x_u, is for all three cases the same, namely $\pm 1/G$. All three kinds of persons suffer (or benefit in

case of a positive x_d and suffer in case of a negative x_d) the same proportion for the same G. It seems that this might be a nature's axiom. No being shall sacrifice more attainment due to a disturbance, whether it is bold or gentle. (This statement will be reconsidered in the following section: The Dynamics.)

One is tempted to allocate the person with the characteristic B to a dastardly dictator, and the person with the characteristic C to a highly introverted, a *noli me tangere* being. A dictator's behavior with a feedback signal even smaller than 0.5 might be an outrageous tyrant; an introvert with a feedback transfer factor of larger than 2 might be a psychopathic patient with endogenous depression.

In social interaction with other people, boldness as well as timidity, both can have a positive effect as well as a negative one. It depends on how an individual senses the influence coming from interaction. But interaction with a second person, that is a matter of bilateral information exchange, is considered further down in later chapters.

Our opus of this Part 1 is not finished at this point. In order to be complete we have to look at the loop's dynamics.

The Dynamics

What was said up to now is only part of the story. As every action needs time in order to achieve, the time factor F_t has to be taken into account. *Tempus rerum imperator:* time is sovereign over all things. And time cannot be eliminated. *Time is the currency of survival* [1]. The time of acting is highly responsible for the stability - or instability - of a functional loop. Instability means that the person becomes unable to strive toward his goal. We know that the time needed for functional behavior can be expressed with differential equations. As suggested in Volume I, readers who are not familiar with this kind of knowledge shall skip the formulae and

read only the text. The transfer function of three linear, simple differential equations of first order in a series will be used to represent F_t in Figure I-1. This function F_t is shown with equation (I-16) in the Laplace domain.

$$F_t = \frac{1}{\prod_1^3 (T_i s + 1)}. \qquad \text{(I-16)}$$

In order to determine the stability, the characteristic equation of the system has to be investigated. The loop's characteristic equation is equivalent to the *character* of the modeled person. The character contains all intrinsic values of the person when he acts. In our simple model, these values are F_b, G, F_t, and U_C. The equation in question, the characteristic equation, is equation (I-17).

$$\prod_1^3 (T_i s + 1) + F_b G U_C = 0. \qquad \text{(I-17)}$$

Taking - for simplicity - for T_i three equal time constants of T = 1, and setting U_C = 1 (U_C is not taken as parameter), makes equation (I-17) to the simple equation (I-18).

$$(s+1)^3 + F_b G = 0. \qquad \text{(I-18)}$$

In order to find out how large the willpower G can increase before the person *collapses* in megalomania - or depression, that is how large F_bG is at the stability limit in the complex expression of s, ($s = \alpha + i\omega$), s has to be set to $i\omega$ (no real part α!). The result is simply:

$$F_bG = 8. \qquad \text{(I-19)}$$

The detailed - yet elementary calculation - is given in Volume I.

The product of F_b and G as 8 is now the limit value the person, expressed with equation (I-18), can exert without becoming

unstable, i.e., without becoming incapable of striving toward his goal u. Now the three situations of F_b can be considered anew.

For $F_b = 0.5$ $G = 16$,
For $F_b = 1$ $G = 8$,
For $F_b = 2$ $G = 4$.

With the assumption that there are three equal delay elements in a being [as assumed with equation (I-18)], the hyposensitive person can exert a willpower of up to G = 16 before he runs into instability; the normal person can afford a willpower G of up to 8, and the hypersensitive person must and will be satisfied with a G up to 4 only. G = 4 is a fourth of the bold being's willpower of 16.

The sensitive person has to hide when the bold fellow pushes himself to the front line. A sensitive person cannot cope with an arrogant, or an aggressive person - unless he could act much faster than the audacious creature - namely to run and hide, or to emigrate. This, however, is not very probable and not investigated herein. The dominant person, being a dictator, generally has the police to execute his power and to get rid of anybody who are in his way.

The above made statement, which claimed that all three persons would suffer equal amounts of disturbances x_d relative to their attainment x_u remains: $x_d/x_u = 1/G$. This can easily be detected from equation (I-4) with $F_t = 1$. But as the requirement of time has to be included, homeostasis demands to be considered. Formula (I-19), $F_bG = 8$, says that all three persons, megalomaniacs, healthy, and depressed persons get the *same* influence from a disturbance, namely

$$x = \pm\frac{U_C}{1+F_bGF_tU_C}d, \text{ or } x_d = \frac{1}{1+F_bG} \text{ with } U_C,\ F_t = 1, \text{ and } d = 1.$$

This results in $x_d = 0.11$ or in 11%. Therefore, with respect to the allowable willpower and the accompanying goal attainment, the

more arrogantly somebody behaves (large willpower), less he recognizes being disturbed. Peacemakers, who are very often weak personalities, and who think they can turn dictators into angels - just by means of dialogues (the dialogue as a disturbance) - should get this notion into their head. Peace lovers who want to preach peace to autocrats are too credulous. Peace demonstrations have no effect other than to satisfy the peace lovers´ weak, somehow naive opinion. Unfortunately, peace fighters often do more harm than good in the world. By the way: *pax quaeritur bello*; peace is sought by war (motto of the Cromwell family).

And on the other hand, the more timid a person is (low willpower), the more seriously disturbances affect him. In addition, a sensitive person generally acts more slowly than an insensitive one. This adds to the disadvantage of the sensitive individual.

The sensitivity for the three cases looks the following:

Hyposensitiveness:	$F_b = 0.5$,	$G = 16$,	$x_d/x_u = 11/178 = 0.062$
Normality:	$F_b = 1$,	$G = 8$,	$x_d/x_u = 11/89 = 0.12$
Hypersensitiveness:	$F_b = 2$,	$G = 4$,	$x_d/x_u = 11/44 = 0.25$

How to recognize a bold, aggressive individual *before* he can grasp too much power, and how to identify a sensitive one, a timid person? A perfect means is the person´s handwriting - if it is available! Having a personal script at hand then the direct - and too often dangerous - confrontation with this person is not necessary for finding out his boldness; but the handwriting has to be found. This is especially difficult for samples of handwriting of dictators, because they do not want to identify themselves. Despots have their lackeys and police force to execute their will. Despots do not give written orders.

In the realm of the western alphabet and symbolism we can find the following signs:

Bold people's script shows double angles with determined pressure and long t-bars that are set high and cover more than the letter t. If the t-bar has an arrow-like ending, the writer hurts others´ feelings and is very defensive. Angles are associated with aggressive individuals, people who are hard working, competitive, determined, serious about their work, and not easily influenced. These people will impose their will on others and on their environment, and they do not deviate from their purpose. This trait is also associated with stubbornness. In order to get rid of a despot, he has to be killed - before he has killed too many opponents around him. Don't try to use conferences, dialogues, diplomacy and nice words!

Words of double-angle writers also have initial strokes starting from underneath the base line. An initial stroke is an onset. The letters also have an inclination to the right - a sign of extroversion. Every so often, words grow in size toward their end, building a wall against the fellow citizen.

Sensitive persons write garlands with a fine ductus. The size of the script is rather small. T-bars are light and short and set low, or are even completely missing. There is no initial stroke at the beginning of a word. Word endings are tapered, i.e., the writer makes himself small for tuning into the partner. The letters are vertical or very often have an inclination to the left - a sign of introversion.

Conclusion

This simple model demonstrates a further characteristic of social behavior of remarkable importance. Of the four definitions taken from the Webster's Dictionary the one that says *response following an action* is definitely related to the awareness of what one is doing (the (b)-case). But the others, (a), (c), and (d) fit perfectly as well into the model of Figure I-1.

With reduced feedback, the output x depends predominantly on the fact that the willpower can be pushed up high. History is available to present innumerable samples: Caesar, Nero, Hannibal, Popes, Napoleon, Stalin, Hitler, but also founders of religions. - And if a butcher could and would feel what he does to mother cow when he kills her baby to make sausages with its tender flesh, his F_b would be considerably larger than 1. To fulfill the daily butcher's slaughter quota, his professional F_b must be close to zero. The butcher must assume that a cow has no consciousness about her baby.

It can be said that if we recognized what we are doing to our fellow man and woman and all other creatures, we could dislike our own self. From this standpoint it would be justified to call somebody whose F_b is much larger than 1 not only timid, but rather insane. In order to survive, killing of other living beings is compulsory - therefore an F_b of 1 or somewhat smaller than 1 is necessary for survival. Surviving means to be forced to kill for food, for self-defense - or for the simple reason of aggressive disposition to the sadist for rendering him pleasure. Our F_b for weed and snails in our garden is close to zero, our F_b for our dog considerably larger than 1!

Although the model Figure I-1 is of utmost simplicity, the circumstances become already rather involved. This first chapter gives us a feeling about the complexity that exists beyond our recognized reality: an enormous functional perplexity. Life continues in an automatic, self-controlling maze. The feature of the automatic loop is the way to approach biological functioning, and this happens via loop-thinking.

Some domineering signs in the handwriting of hypo- and hypersensitive persons might be of interest.

Signs of hyposensitive persons:

1. Angular ductus: power hunger, forcing their own categories upon other people, determined individuality, refusal to adapt.

Urania (Urania)

nach Hause gekommen

(nach Hause gekommen)

Professor Starkermann

2. Straight line going upwards: aggression, anger, fury, rage, feeling of power.

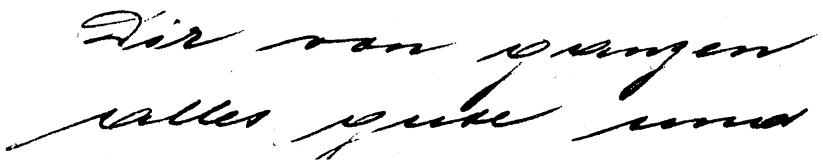
If you go

3. t-bars high and extended forward: Increase of ego expansion, greed for might, demonstration of power, protectionism, domination.

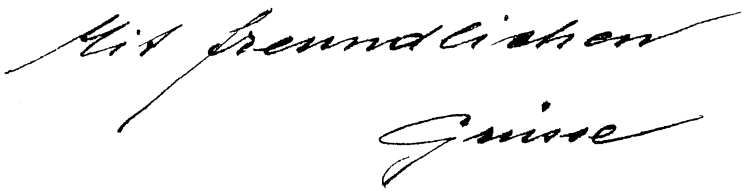
Hello Betty

Dr R Starkermann

4. Onset from underneath the base line: dogmatic behavior, attacking disposition.



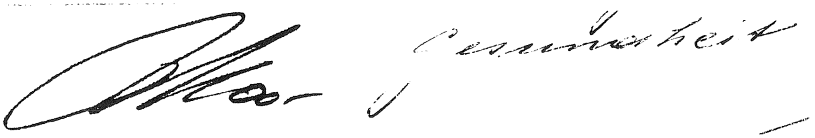
5. Regularity in connection with aggression: harsh despotism.



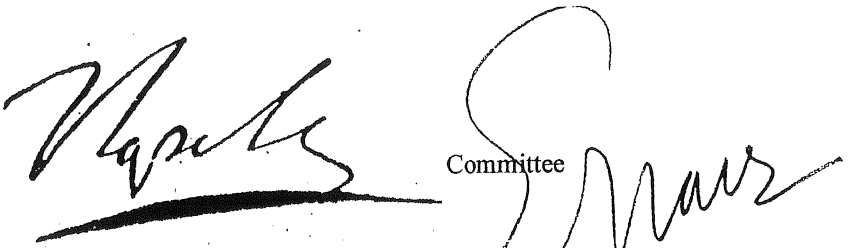
6. Growing angle at end of a word: collision with partners, coarseness, crudeness, and toughness.

7. Long steep stroke in upward direction: thorny aggressive character, tendency to go to court, expression of rage, fury, anger.

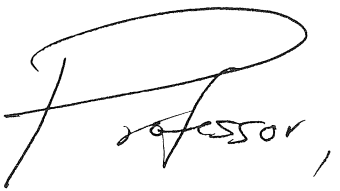
8. Strongly slanted to the right: lack of restraint.



9. Exaggerated space with large letters: reckless consumption of the environment and claim of territory.

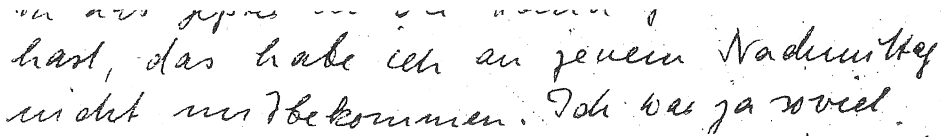


(Napoléon)

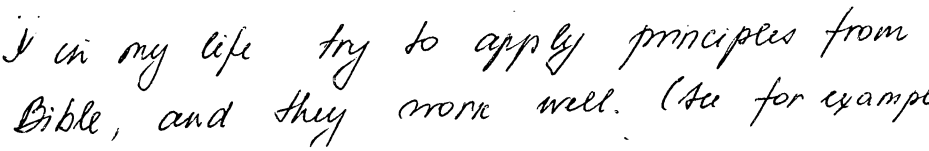


Signs of hypersensitive persons

1. Small writing: small self-evaluation, no desire for power, small self-impetus, and feeling of guilt after failure, elimination of self-value, shyness.



2. Narrow letters: reduced intention to expand, inhibition, scared to show him/herself.



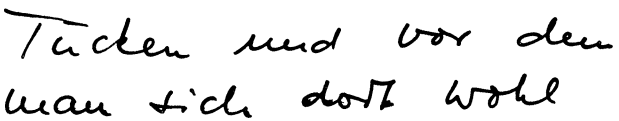
3. Garland: natural adaptation, no collision with the „you", giving way in conflicts, rather avoiding collisions.

(immer nur minimal)

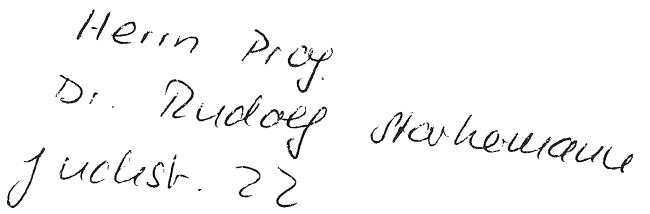
4. Garland with light ductus and weak pressure: no demonstration of willpower, prevention of wilful actions, high receptivity.

(denn Hänsel und Gretel)

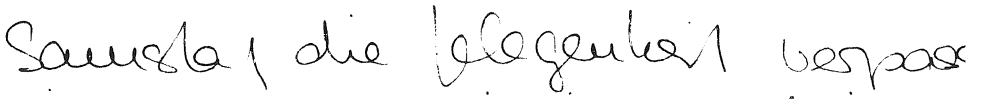
5. Decreasing i-heigth toward end of the word: capability to tune into the other.



6. Straight descending line: depression, resignation.

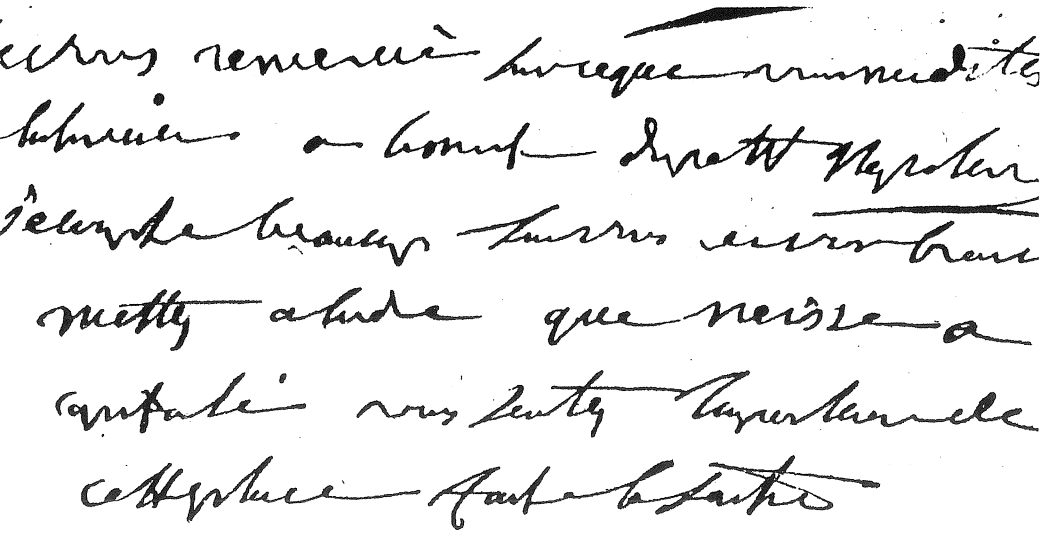


7. Light or no t-bars: weak willpower, a follower rather than a leader.



(Samstag die Gelegenheit verpasst)

A showpiece of a hyposensitive being: Napoleon Bonaparte:



II. It´s a Sin to Confess a Sin

Introduction

To unburden one's sins that have been defined and established by the sacerdotal class of a religion, is a self-abasement performed to show penitence. Such contrition is rendering oneself to the will of another, which, e.g., in Catholicism, is a priest´s. With our concept of nature's edict of self-realization, confessing can be called a *sin*. Religious laws and commandments, resulting in sacraments, are an act of power to rule and control social and ecclesiastical behavior. Transgression of ordained laws is a violation, defined to be a sin that, in turn, produces guilt, humiliation and remorse.

In order to receive remission of misdemeanors, confession to a priest is required to show ruefulness. Such administered ruefulness means giving oneself to the will and control of another, who, e.g., in the Catholic Church, is the priesthood. On the other hand, absolution sets a person free from guilt and allows one either to behave conform from thereon or freely to commit new sins, as there is always the possibility to confess again and thus *clear* the conscience once more. This double standard allows the continuation of life within the existence´s complexity.

Each being created by nature strives for its self-value, its self-realization, which is a contradiction to being ruled and conducted by any power-endeavoring system. To violate nature's purpose is therefore a damage to one's self.

A mathematical-cybernetic model illustrates herein the enormously pernicious effect that confessing can have on the confessor's self-value. This harm to the self causes damage to self-fulfillment and reduces in turn self-responsibility. Thus, confessing can be considered a misdeed toward the fundamental intention of nature.

The model, with which such a statement shall be proven, reveals also the positive influence of disobedience to the priest's order.

Disobedience increases self-value. However, becoming priest-ridden or even cruelly controlled by religious power results in self-destruction. The extent of damage depends only on the threshold of sanity of the oppressed believer.

Our model consists of two levels comprising one person on each level. The upper level is the priest who receives the information about the breach of the expected religious conduct. The lower level is the confessor. The outcome of two confessors of different intelligence is investigated. In one case one confessor is considerably less intelligent than the priest; in the other case the sinner's intelligence matches the priest's intelligence.

Confessing can be called inflicting pain by men ordained to the service of God - the God who, indeed, was brought into transcendental existence and defined by man. God is a powerful unconscious picture in the believer's brain; see further down, Chapter VI.

Some French proverbs may support the topic to be proven:

> *C'est le grand mal d'être esclave, même du meilleur maître.*
> *Folle et simple est la brebis qui au loup se confesse.*
> *Ne te confesse pas à un vieux renard.*
> *Qui se fait brebis, le loup le ravit.*

Before the investigation got under way, it was assumed that the more *intelligent* sinner would be less damaged in his self-value than the less intelligent disciple. Surprisingly - as will be seen - the difference turns out to be very minor and even to the disadvantage of the more intelligent *transgressor*. The model also reveals that the detrimental effect on the self of the confessor is the higher

α) the more extensive the confession is, and

β) the greater the priest's willpower is that he exerts.

The highest self-value an individual can maintain is at zero-value-confessing, or better at no confessing at all. This goal can be achieved by either confessing trivialities or by restraining from confessing, the prior according perhaps to the French saying (already previously mentioned): *Tais-tois quand tu parles!* - Keep quiet when you talk. The advice would be: Do not reveal to the authority what will allow them to hurt you with their power!

Description of the Model

This introductory description is meant to help the reader to understand the concept of *loop-thinking* in another aspect, although the basics were given in Volume I and here in Chapter I. - But: *Repetitio est mater studiorum;* repetition is the mother of wisdom, or at least, is a help. The *modus operandi* of loop-thinking is time-functional continuity. Such thinking is a necessary requirement of the future for gaining deeper insight into human behavior.

Figure II-1 depicts the underlying model to be investigated. It consists of two social units, two persons, P_1 and P_2, in a hierarchical arrangement. The figuratively upper level is - as has to be expected - the priest, P_1. The level below is a confessor, P_2.

During the continuous process of confessing, the priest constantly evaluates and continuously weighs in his mind and assesses the offence. The assessment gets formed on the ground of the sinners' misdemeanor and results in the appropriate ecclesiastical value x that the priest attributes to the severity of sin. This operation is an unbroken functioning during the time of confessing. The priest's evaluation of this misdemeanor results in the appropriate ecclesiastical weight he assigns to the sinner's sin. This weight is expressed with the factor F_1. It becomes multiplied by x and is taken into the next *round* of the confessing action as a negative feedback signal $-F_1x$.

The priest compares this momentary piece of sin-evaluation with his goal u_1, the goal he has in mind for the sinner's worth. In the model, the term $-F_1x$ is added to u_1. Thus, the information in the model, denoted as ε_1, is u_1-F_1x. This piece of information ε_1 is the discrepancy between the goal u_1 and the weight of the sinner's sin in the priest's opinion. The discrepancy ε_1 is multiplied by the priest's exerted willpower G_1 with which he imposes the punishment on the sinner. It is assumed that F_1 is proportional to the severity of the sin in the priest's estimation. If the sin is confessed in full, then the violation is deemed to be extremely severe and F_1 is equal to 1. If nothing of the real sin or nothing at all is declared, then F_1 is 0. But the priest's intention and inquisitiveness is to hear honest confession of real and serious sins.

A droll example: In the children's confession, a little boy's list of sins is very harmless and short. „Is that all?" the chaplain asks disconcertingly. „Yes, that's all", the boy replied. „Think about it! Did you perhaps sometime try to take money out through the slot of your piggy bank with a knife?" „No - but thanks for the idea." [2].

It goes without saying that if trivialities or sins not actually committed are declared, the resulting penalties do not harm the confessor's self. He may take the punishment, if any, for not telling the truth. The intention u_1 the priest has in mind for the sinner depends upon the attitude the priest has toward the disciple. After an instant of delay for reflection, described by the transfer function D_1, the priest acts on the sinner P_2 by assigning in his mind the next increment of change of the sinner's value. - As every emotional action needs time to be executed, this time-dependency D_1 is a necessary parameter in the model. Mathematically, it is irrelevant whether the time delay is incorporated in the model before the willpower factor G_1 or after G_1, or whether it is split into any two parts. But it must be kept in mind that the process of confessing goes on in time. It is a time dependent continuous functional process, happening within a functional loop.

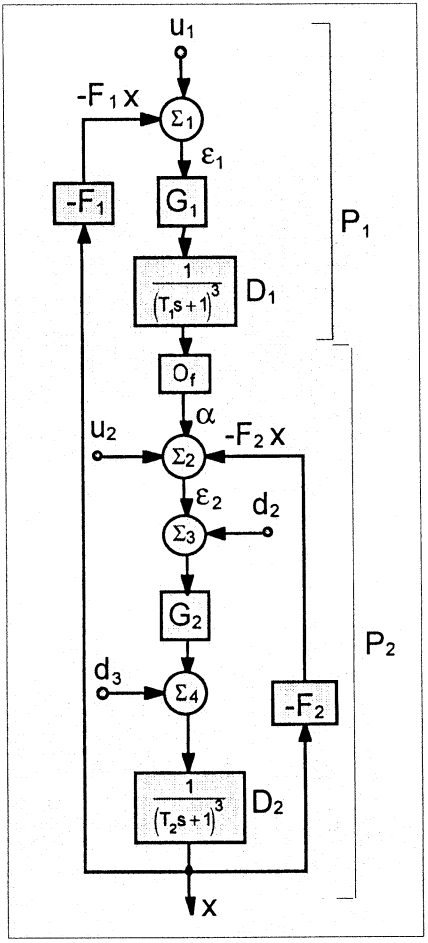


Figure II-1: Structure of the model of the hierarchical arrangement of two social units, P_1 and P_2.

The factor O_f is the obedience factor. This is mathematically a modifier to the priest's order. The willpower factor G_1 is reduced -

or amplified - by O_f to G_1O_f. O_f has the magnitude of +1 if the confessor intends to obey 100% to the inflicted penalties. If the obedience is zero, O_f is zero. Thus, the confessor can reduce the effect of the priest's willpower by reducing in his mind the obedience to fulfill the encumbered punishment: $0 < O_f < +1$. The investigation herein disregards any disobedience. That is, O_f is kept to the magnitude +1.

The volition G_2 of the sinner is his own willpower to realize his own self-value, i.e., the goal u_2. u_2 is set to 1 or 100%. u_2 is nature's urge for P_2 to exist to his desired extent.

The informations d_2 and d_3 can be additional counseling that may influence the confessor P_2. Such information can decrease P_2's confession if he is critical of the procedure of disclosing his faults, or the information can increase the face value of the committed sin in the form of a psychological guilt-increase in P_2. An influence d_2 will be amplified by G_2, i.e., the effect of d_2 will be conscious, whereas an influence d_3 will be incorporated unconsciously by the confessor on himself, i.e., the information d_3 does not pass through the volition G_2 that would provide conscious recognition of this d_3-information.

The inherent feedback $-F_2x$ of the confessor can be larger or smaller than 1. In the present investigation F_2 is set and kept to the magnitude 1, because it is assumed that P_2 is fully sensible of the breach of his conduct. - The reader must be aware that loop-thinking requires very different reasoning compared to the usual customary thinking. And although our loop-model looks simple, to think *through* it can create some headaches.

Once the confession comes to an end, the variable x reaches its maximum, and the discrepancy $\varepsilon_1 = u_1 - F_1x$ becomes a minimum. The priest comes to the end state of his duty, pronouncing the sentence.

The Points of the Investigation in Detail

a) Additional remarks to the model
b) The characteristic equation
c) The ultimate self-realization

a) Additional remarks to the model

P_1 The social unit P_1 - in the present context - the priest; basically any superior authority can appear in the role of a priest;

P_2 The social unit; the sinner, or confessor, or reprobate;

u_1 The intended goal of the priest, this is his subjective aim he has in mind for the confessor's value;

u_2 The self-value of the confessor, as his perspective goal in mind, i.e., his self-realization;

G_1 The exerted willpower of the priest;

G_2 The willpower of the sinner for attaining his self-value;

T_1 Time constant to describe the emotional time-functional action of the priest;

T_2 Time constant of the confessor´s emotional activity in the confession´s procedure;

O_f Factor of seriousness with which the sinner takes the priest´s punishing modus;

x The momentary confession-status during the process of confessing. The variable x is expressed as a function of time, i.e., x(t); in short only x;

F_1 Factor of seriousness allocated to the confessed sin x assigned by the priest P_1 to P_2 during confession;

F_2 Feedback signal; the sinner´s awareness of his confession´s status x;

d_2, d_3 Intervening information that can influence the sinner in a relieving manner, i.e., not taking confession seriously; in other words, evaluating his behavior himself; or in a depressing manner by adding a feeling of guilt through additional guilt-supporting information. Additional guilt feeling can arise from inside himself (endogenous) or from outside (exogenous).

It is assumed that the feedback factor F_2 has the magnitude +1, i.e., P_2 is fully aware of his action. P_1's feedback -x is indeed what P_2 confesses. P_1 has to take what he hears from P_2. Then, he, P_1 modifies -x by the factor F_1, according to his evaluation of the seriousness of the sin without self-reflection or awareness of the consequences of the punishment he inflicts on P_2. In other words: there is no feedback within P_1. The priest (any authority) considers himself to be a domineering, yet absolute power, bequeathed by his unconscious God-symbol.

The exponent 3 in D_2 for the denotation of the speed of action, or of emotional behavior, is due to the fact that P_2 can become unstable (e.g., through hysteria) at too high a volition G_2 when he is anticipating the punishment. (As mentioned earlier, the third degree in a linear differential equation is the minimum degree to provide the possibility of instability to P_2, see also Volume I.)

In order to perform a direct comparison between P_1 and P_2, P_1 by D_1 is kept at a third order delay as well, although P_1 cannot become unstable directly, i.e., on his own. He has no time-functional self-reflection. He is just acting forward on P_2 without feeling responsibility for his action. As an ecclesiastical authority he can exert almost any power he wants to, because he considers his status as divine and as established by his God (Epistle to the Romans, 13/1&2: Let every soul be subject unto the higher powers. For there is no power but of God: the powers that be are ordained of God. - Whosoever therefore resisteth the power, resisteth the ordinance of God: and they that resist shall receive to themselves damnation). But P_1 he has time-behavior, incorporated with T_1.

b) The characteristic equation

As the priest and the confessor together form a higher ensemble, i.e., a two-stage-unit during confession, it is the character of this two-level unit's behavior that has to be investigated.

The characteristic equation (II-1), that is the character of the total system Figure II-1, taking into account all its elements, becomes equation (II-2). It shows the interrelation of the system's parameters G_1, G_2, O_f, F_1, F_2, T_1, and T_2. (The mathematics shall provide the reader for controlling or for further investigations.)

$$1+\frac{G_1O_fG_2F_1}{(T_1s+1)^3(T_2s+1)^3}+\frac{G_2F_2}{(T_2s+1)^3}=0 \qquad (II-1)$$

It is to emphasize that this simple structure Figure II-1 already leads to a functional complexity that can no longer be perceived intuitively, or ad hoc, but needs to be treated mathematically in a computer and investigated step by step. To determine the outcome of an act even as simple as talking to another person involves in reality an immense intricacy of influences. The expression (II-1) leads to an equation of 6^{th} order linear in s. This is equation (II-2).

It is obvious that there is no way to comprehend complex systems by looking *at* them. It is necessary to look *into* them what requires calculation, time-functional calculation. We repeat our saying: *What cannot be thought must be calculated.*

$$1+G_1O_fG_2F_1+G_2F_2+3\left[G_2F_2T_2+T_1+T_2\right]s+$$
$$3\left[G_2F_2T_2^2+T_1^2+T_2^2+3T_1T_2\right]s^2+$$
$$\left[G_2F_2T_2^3+T_1^3+T_2^3+9T_1T_2^2+9T_1^2T_2\right]s^3+$$
$$3\left[T_1T_2^3+T_1^3T_2+3T_1^2T_2^2\right]s^4+3\left[T_1^2T_2^3+T_1^3T_2^2\right]s^5+T_1^3T_2^3s^6=0 \qquad (II-2)$$

c) The ultimate self-realization

When confession is in process, it finally reaches an end state. At the end of the confession, the priest will verbally state the punishment. This state is called the steady state punishment. This punishment determines the ultimate and remaining self-value of P_2.

At this point of the final state, x is mathematically only a function of the input signals u_1, u_2, d_2, d_3, and the characteristics of P_1 and P_2, i.e., of G_1, G_2, O_f, F_1, and F_2. The variable x no longer depends upon the time factors T_1 and T_2. D_1 and D_2 become +1 and they both *disappear* as transfer functions. At the ultimate state, the time no longer has any influence. In other words, the transgressions are fully confessed when the fixation of the punishment occurs. The damage to confessing is done! - T_1 and T_2 no longer appear in equation (II-3), in the description of the final state of x.

Equation (II-3), as the final state, has the lucid form:

$$x = \frac{G_1 O_f G_2}{1 + G_1 O_f G_2 F_1 + G_2 F_2} u_1 + \frac{G_2}{1 + G_1 O_f G_2 F_1 + G_2 F_2} u_2 + \frac{G_2}{1 + G_1 O_f G_2 F_1 + G_2 F_2} d_2 + \frac{1}{1 + G_1 O_f G_2 F_1 + G_2 F_2} d_3 \qquad (II-3)$$

Formula (II-3) shows quite a series of parameters that have to be taken into account. In order to demonstrate principles, a limitation of these parameters is necessary. The signals u_1, d_2, and d_3 can increase or decrease the value of x. We disregard any influences of d_2 and d_3. The priest's goal u_1 has the following meaning: It is the intended value the priest has in mind for the confessor as an existing being. If he is kindly disposed towards the confessor, the goal u_1 is positive ($u_1 > 0$); but if he is an inquisitor with a malicious disposition, the goal u_1 is negative ($u_1 < 0$). If the malicious intention takes place, we have the situation already mentioned: *C'est le grand mal d'être esclave, même du meilleur maître.* Or: *Ne te confesse pas à un vieux renard.* Taking the neutral view and setting u_1 equal to zero, and thus also limiting the extent of the essay (d_2 and d_3 are 0), equation (II-3) results in the formula (II-4):

$$x = \frac{G_2}{1 + G_1 O_f G_2 F_1 + G_2 F_2} u_2. \qquad (II-4)$$

As the goal u_2 is the confessor's generic goal to exist, it has to be set to +1 or 100%. With this reduction, x will depend on both willpowers G_1 and G_2, on O_f, F_1 and on F_2. These are still five factors to be scrutinized.

In the case when the *priest* is a psychologist, or psychiatrist, or a helping teacher then u_1 would be positive and could not be put to zero. However, we will leave it as zero. The priest wants to punish, not to help!

Formulae (II-3) and (II-4) indicate that the denominator

$$1+G_1O_fG_2F_1+G_2F_2$$

is the *heavy* part that *pulls* the values of the numerators in (II-4) *down*. For our case of equation (II-4), the confessor has to exert a great willpower G_2 (G_2 exists in the numerator) if he wants to reduce the confessing damage for his survival x. Before investigating the formula (II-4) we must have a look at the dynamics of the process of confessing. We have to involve time. This is so because even at the very end of the process of confessing, the system stays dynamic. It still lives but no longer changes its end state. The steady state, the end state, is the *static flux equilibria*. But it is from the dynamic realm that the values for the denominator's parameters will have to be taken.

The Homeostasis, the Dynamic flux equilibria

A functional system has to work dynamically in a permanent equilibrium in order to function properly if it wants to reach a clearly defined end-state. This is well known by now from Volume I. The equilibrium is called homeostasis. It is determined by the intrinsic properties of the total system. In the present case, these properties are the seven parameters G_1, G_2, O_f, F_1, F_2, T_1, and T_2. The time factors of the happening, T_1 and T_2, now play an eminent

role. Referring to Figure II-1, T_1 and T_2 come into play in the following form:

$$D_1 = \frac{1}{(T_1 s + 1)^3}, \text{ and } D_2 = \frac{1}{(T_2 s + 1)^3}.$$

These expressions are both included in the characteristic equation (II-2).

Figures II-2 and II-3 show homeostatic limits for two different types of confessors. In order to facilitate the mental depiction, in both figures we set O_f = 1, and F_2 = 1. Therefore, only G_1, G_2, F_1, T_1, and T_2 are variables, or parameters, respectively. In Figure II-2, there are the limits of stability (or of the equilibrium) for the offender who is less intelligent than the priest. That means the inferior confessor is mentally less flexible than the superior priest. In Figure II-3, there are the limits of stability for the confessor who is as intelligent, i.e., as flexible as the priest. The question was posed: Will the less intelligent confessor be more severely damaged in his self-value than the intelligent, the more flexible one?

Our definition of intelligence in the realm of a biological concept is the following: The closer and the faster a person (a social being, any being) reaches his desired goal, the greater is his intelligence. Endeavoring to reach one's goal is self-value, or self-realization. Additionally, this attempt is the fulfillment of the ultimate command of nature.

In the presented mathematical model this term intelligence is defined by two, and only two parameters, the willpower G a person can exert, and the speed of action he has, i.e., the time delay T. The smaller T and the larger the willpower G are, the faster the person reacts and the closer he comes to his goal u after a certain time has elapsed - if he is in an *autonomous* state, i.e., without any interaction and any external influences. In a non-autonomous state, as ours now is, this definition can no longer be

applied. Intelligence is no longer a guarantee for goal approach when influences of interacting partners are occurring. The definition of intelligence refers only to the autonomous individual.

For the less intelligent confessor, called P_{21}, T_2 is set to $10T_1$. For the more intelligent sinner, called P_{22}, $T_2 = T_1$. Thus, from the standpoint of mobility, P_{21} is considerably less intelligent than P_{22}; he is much slower acting and reacting than P_{22}.

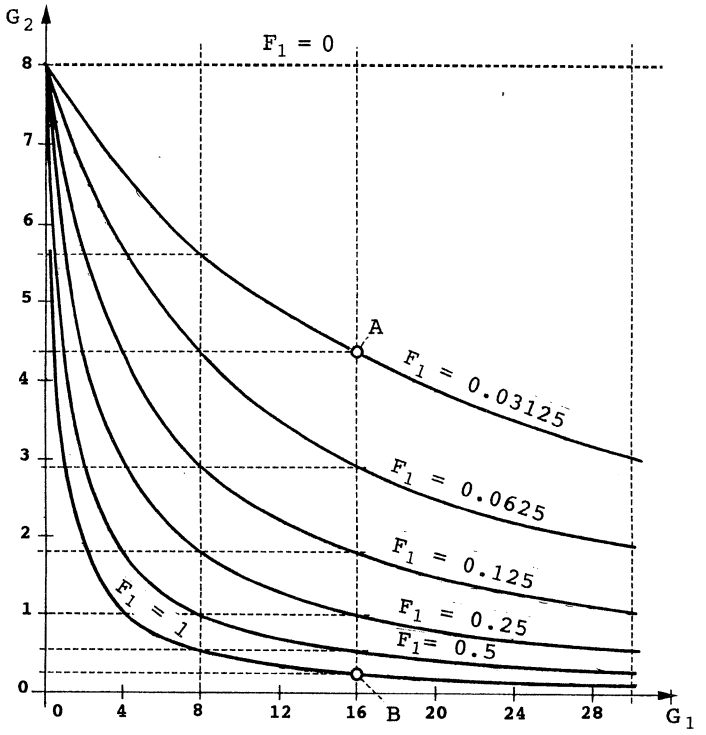


Figure II-2: Limits of the homeostatic state. P_2 is less intelligent than P_1; $T_2 = 10T_1$, $O_f = 1$.

Description of the two Figures II-2 and II-3.

The figures show stability areas spread out between G_1 and G_2 with the parameter of F_1, the assumed seriousness of the sin.

Figure II-2 depicts the homeostatic limits of the confession with the less intelligent confessor. The illustration shows the rapid decline of the willpower G_2 that P_2 can exert for his self-value. The decline is depicted with the increase of the priest's sin-evaluation F_1 as parameter. The curves are given as a function of the priest's willpower G_1. The higher G_1 and the more severe the sin is considered to be (this is F_1), less willpower G_2 the confessor P_2 can allocate to himself with which he can strive toward his desired self-realization u_2. If there is no confession ($O_f = 0$), G_2 is equal to 8. This number 8 is distinctive for a time-delay as indicated in Figure II-1, namely for the characteristic equation of the autonomous P_2, equation (II-5) (with $F_2 = 1$, and *any* T_2):

$$G_2F_2 + (T_2s + 1)^3 = 0 \qquad (II-5)$$

This fact is proven in Volume I.

We remind the reader: As social quantities cannot be quantified numerically, any consideration of such quantities has only a qualitative meaning. It is comparison that is the means to determine quality. *Argumenta non numeranda, sed ponderanda sunt:* motives shall not be quantified, but pondered. But already the wording without the mathematics makes the situation logical: The greater the sin, and the greater the priet's power, less is left for the confessor's self-value.

With the priest's willpower of 16 - as an example - in Figure II-2, the tiny amount of only 3% of F_1 (feedback of 0.03125x) already reduces P_2's willpower G_2 from 8 down to 4.3. See point A in Figure II-2. If the priest allocates a weight of only 3% to the sin, in other words, if the confessor confesses only 3% of the full sin, he already will face a 46%-damage produced by the priest in the

confessor's effort for his self-evaluation, i.e., from 8 down to 4.3. Confessing the full amount, which will result in full punishment, $F_1 = 1$, and at P_1's willpower of 16, will reduce G_2 from 8 down to 0.25. See point B in Figure II-2. Such a small amount of willpower - as will be seen later - reduces P_2's self-value practically to zero, to no-self any more. In such a situation the proselyte would become fully an object of the clergy.

Figure II-2 impressively demonstrates the cumulativeness of the priest's willpower and his evaluation of the sin and points to the enormous harm the clergy can generate. Basically this is no surprise when looking at equation (II-4): G_1F_1 form a product that is in the denominator and *pulls* the value of x down. The greater the priest's willpower (large G_1) and the more serious he considers the sin to be - or the more that is confessed (large F_1) -, less self x is left for the sinner! Advice: Don't confess at all, be yourself!

$$x = \frac{G_2}{1 + G_1 O_f G_2 F_1 + G_2 F_2} u_2. \qquad (II-4)$$

Figure II-3 with the more intelligent sinner ($T_1 = T_2$) renders less direct insight into the situation than Figure II-2 does. The circumstances are more conflicting. It can be seen that the limit of the homeostatic state extends beyond the critical value 8 of the autonomous P_2, i.e., of P_2 at no confessing procedure ($G_1 = 0$). In addition, three different values G_2 occur for a specific G_1. For, e.g., $G_1 = 20$, and $F_1 = 0.125$, there are the three values for G_2: 1.7, 8.75 and 11.65. See also Table II-1. Surprisingly, equation (II-4) reveals that all three values of G_2 will result in about equal sacrifice of P_2's self-value if he submits himself to the confessing procedure. He attains about 25% of u_2. Although the power-values G_2, namely 8.75 and 11.65 are fairly high, they are not much help for the confessor's self. This will be seen clearly in Figure II-4.

This fact of three different G_2's for one and the same G_1 does not agree with the sound logic conveyed by Figure II-2. But other investigations show that individuals of equal intelligence or of

equal emotional characteristics (in our case $T_2 = T_1$) create homeostatic uncertainty in their interacting. Some Werner Heisenberg´s uncertainty in confessing? Who knows!

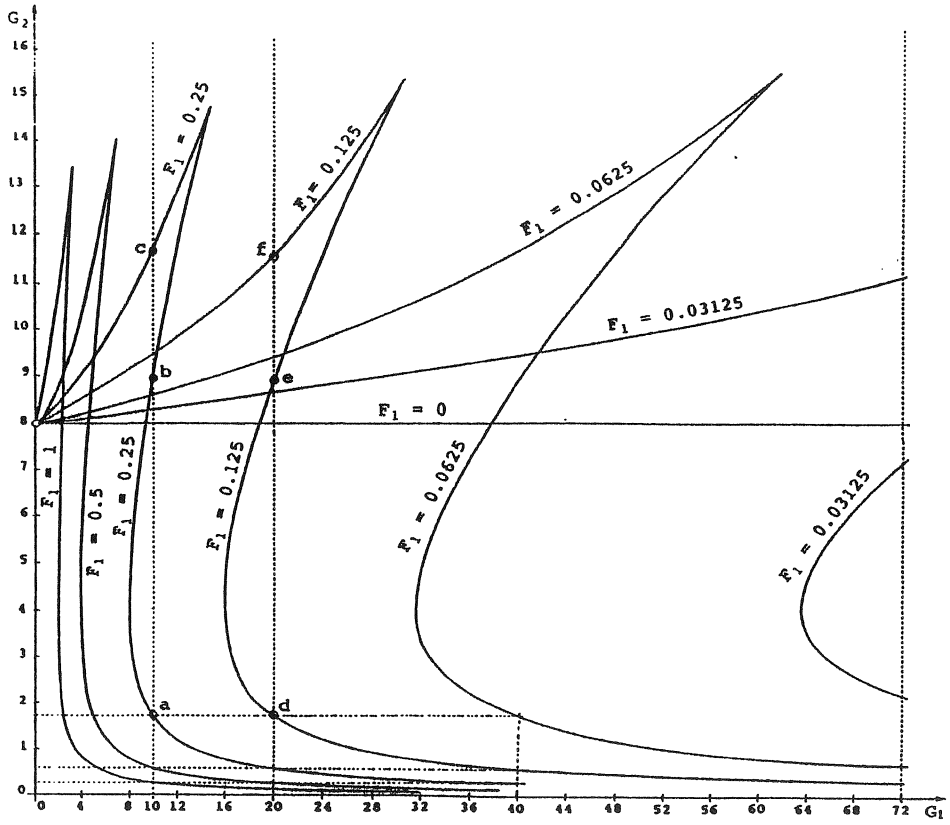


Figure II-3: Limits of the homeostatic state if the disciple is of the same intelligence as the priest; $T_2 = T_1$.

The Detrimental Effect of Confessing

Figure II-4 convincingly depicts the tremendously destructive effect confession has on the self-value of the confessor. Note: A and B are for the less intelligent P_2; A: $G_1 = 8$; B: $G_1 = 16$. C and D are for the more intelligent P_2; C: $G_1 = 10$; D: $G_1 = 20$.

At no confession ($F_1 = 0$ or $O_f = 0$), the maximum x is 89%. It goes without saying that such a number has a comparative meaning only. The main point to be illustrated is the rapid decline of x as a function of F_1, which is at the slightest onset of confessing. Once self-value is minimized, it no longer makes any difference how much a person confesses, i.e., to what measure the priest evaluates the confessed sin, and how much willpower the clergy exerts. The confessor's self is gone, is destroyed! The confessor belongs to the church! This is the case for about $F_1 > 0.3$, i.e., less than half of the honestly confessed substance.

All four curves show a similar tendency: The more conciliatory a priest is toward the zealot (low F_1), or the less the sinner confesses (small O_f), the more a sinner keeps his own value x. Confessing fully to an exacting (or tyrannical) priest, i.e., $F_1 = 1$, reduces the self-realization down to minimum. We might put in here a harsh German proverb: *Nur die allergrössten Kälber wählen ihren Metzger selber;* only the absolutely greatest calves (fools) choose their own butcher.

Before these calculated curves appeared on the computer screen, it was thought that the intelligent confessor could somewhat puzzle the priest to his own advantage. But as the curves illustrate, this is not the case at all. The reason for this circumstance might be that the stupid person is considered to be less evil when committing a sin than the intelligent one. Therefore, the less intelligent confessor shall not be punished more severely than the more intelligent one. In fact, the opposite is true. The more intelligent sinner is slightly more penalized than the stupid one. But in these two curves (curves C and D) the power of the priest is

also somewhat higher than in the curves A and B. Note that for calculating x in the formula (II-4) G_1 is pulling down. G_1 is in the denominator!

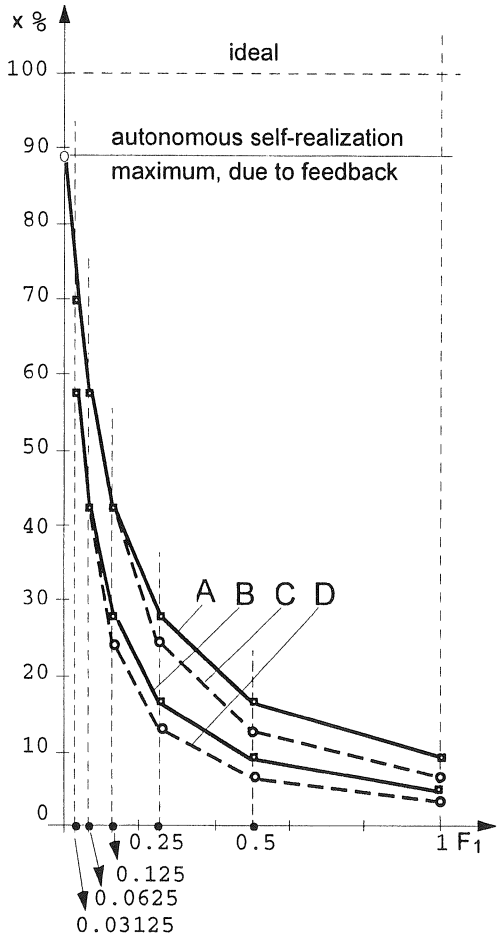


Figure II-4: Resulting self-value x in % of the confessor P_2 as a function of the priest's assigned value F_1 to the confessor, and as a function of different levels of intelligence of the confessor (two types) and different powers exerted by the priest; $O_f = 1$.

The curves A, B, C, and D in numerical form are listed in Table II-1.

The curves A and B are for the confessor who is less intelligent than the priest.
The curves C and D are for the confessor who is as intelligent as the priest.

Table II-1: Self-realization x (in %) of the confessor as a function of the estimated severity F_1 of the sin, and the priest's willpower G_1.

F_1 in %	A	B	C	D
G_1 =	8	16	10	20
100	9.2	4.8	6.7	3.6
50	16.7	9.2	12.8	6.7
25	28.1	16.7	24.5/27.7/27	12.8
12.5	42.5	28.1	42. 0	24.5/27.7/27.8
6.25	57.8	42.5	57.0	42.0
3.125	70.0	57.8	69.0	57.0
0	88.9	88.9	88.9	88.9

C and D show three x-results for one specific amount of sinning. They originate from the two vertical lines in Figure II-3.

For C, the three x-results are found at F_1 = 25% or 0.25; and for D the three x-results are found at F_1 = 12.5% or 0.125.

These three values originate from the fact that there are three borderlines of stability as indicated in Figure II-3. The three limits are denoted as a, b, and c for G_1 = 10, and as d, e, and f for G_1 = 20. (When there is equal time-behavior ($T_1 = T_2$), some kind of controversial effect occurs that creates more irregular stability areas.)

At F_1 = 0, the individual is left on his own for fulfillment and responsibility, and thus for his self-realization, or self-value. This

state is - as said - in autonomy where x = 88.9%. We conclude: from nature's standpoint, it is definitely a sin to confess a sin!

Closing Remarks

Some definitions taken from dictionaries may help the readers to more easily become familiar with some of the terms used:

Autonomy:	The subjection of human will to its own laws, independent of God; self-determination, self-rule, freedom, independence.
Sin:	An action contrary to the law of God; a state to be condemned in the light of God's law; a vitiated state of human nature in which the self is estranged from God; misdeed, ungodliness, wrong-doing.
Self-realization:	Fulfillment by oneself of the possibilities of one's personality; the highest aim for man consists of realizing himself; it is an act of revelation of one's own thoughts, feelings, and attitudes.
Absolution:	A remission of sins pronounced by a priest in the sacrament of penance.
Sacrament:	A formal religious act that is sacred as a sign or symbol of a spiritual reality. Any of certain Christian rites held to have been instituted by Christ and to convey God´s grace to man.
Penitence:	An act of self-abasement, mortification, or devotion, performed to show sorrow or repentance for sin; contrite, ruefulness.

The model has its value for any information channel between two layers, separated by authority-discrepancies. Examples are all dictatorial constitutional courts on the upper level, and the citizen to be sentenced on the lower floor.

The title *It is a sin_1 to confess a sin_2* comprises two different notions of sins. The first sin, sin_1, results in imposed damage to the self-realization by handing over willpower and control about oneself to the priesthood (or any authority). The second sin, sin_2, is a behavior defined by the clergy as a sin, or by whatever authoritative level of a religious (or, e.g., a governmental institution) declares an action as being a sin (or offence). This sin_2 is called misdemeanor by power-defined establishments to gain or maintain control over subordinates. If one accepts the fact that man created the symbol God and that we carry such symbol in our unconscious - and not that symbol God created man - then, naturally all God's laws are man-made - and the vicious circle of sacred power is closed.

The concept of God remains limited by the size, the formation, and the functioning of the human brain. Man can never reach outside the frame of his dimensions. These dimensions are an extremely minute quantity of the immense universe. Therefore, any conception of God is a tiny man-made imagination. And for that reason: every religion - basically every single brain - has its own God, or Gods.

Many of the serious sins, defined by the authority, are based on an urge of nature to keep order in the struggle of living together. In this regard such sins are entitled to be called sins; e.g., the flouting and infringement on the commandments in Exodus 20. But religious leaders have established hundreds of additional rules and laws to strengthen their power and limit the faithful´s freedom and responsibility. In order to make the believers feel miserable and to keep the church in power, the clergy has the agent: *preces et lacrimae sunt arma ecclesia;* prayers and tears are the weapons of the church. This is the sad point. The good point is that religious commandments, requirements, commands, and decrees help to keep order and control among the inexhaustible capriciousness and despotism of man. But a founder of a religion cannot be considered a despot himself! We are not sure whether Jesus said: *All power is given to me in heaven and in earth,* Matthew 28/18.

III. Damn the Authority!

Introduction

This essay is somehow similar to the topic of Chapter II where there are two social levels, an authority and a subordinate. The echelon in this Chapter III consists of one subordinate and two hierarchical superiors. It is illustrated how the self-value of the subordinate shrinks when superiors execute their willpower within the hierarchy down the social latter toward the subordinate. The structure of this set-up reflects industrial, societal, and as well religious hierarchies. Naturally, the model is again based on continuous circular information transport in the form of feedback control loops. It is postulated that feedback channels reflect awareness of responsibility that a person has about what he does. - The assumption is, however, that the two superiors do not intend to have such self-awareness for their action. They give orders and control via feedback the outcome of the subordinate. The subordinate, to the contrary, has self-awareness of the value of his attainment; in other words, he has consciousness for the responsibility of the system's doing of which he is part of. Due to the social circumstances, he must be considered being a peon who is inclined to fight authority. A plagued and in his self-value discriminated person only can peel off and break out - if he is not caught in the system. A certain understanding - although no excuse from an ethical standpoint - occurs for terrorism when authorities exploit subordinates and therefore diminish their self-value. Their reaction is inevitably: *Damn the authority!* - and once harmed enough, they go on to destroy and even kill in their outrage.

In our three-level structure it can be assumed that the two superiors do not intend to sense self-awareness for their action. They do not care about the effect their willpower has down the hierarchy path. They just give orders and control the final outcome of the subordinate via feedback. The subordinate on the other hand has self-awareness, he has self-reflection of the value of

his attainment. He tries to survive within the hierarchy because his life is at stake. We investigate the time-functional *end result* of such a system.

It has to be emphasized once more that most social parameters cannot be quantified; yet, comparison of different systems is possible. *Argumenta non numeranda, sed ponderanda sunt:* Arguments have to be pondered, not counted - as mentioned before.

The Element Constituting the Social System, the Partner

In order not to depend exclusively on Volume I, the structure of the social unit, the individual, as the basic model-block to form social agglomerates, is briefly given here once again. In doing this it shall be indicated that we are fully aware of the necessary simplification of reality to be set forward in order to emphasize certain specific social characteristics.

The ultimate goal of any living being is his attempt to realize himself. His self-realization indicates his self-value. This term self-realization is, admittedly, a very general expression. But, on the other hand, what else can one do other than to realize oneself in every instant of life? Self-preservation, and therefore realization of self-value, is the first law of nature attributed to the individual. Thus, the topic's focus is on: execution of self-will for the realization of oneself!

Again, the individual is constituted as an automatic control loop having an execution-willpower and a speed of emotional reaction. These two factors, willpower and speed, are biologically the very surviving factors. In addition the constituent has information exchange with other partners. Very basically the exchange is threefold: unconscious, mutual observation, and conscious action toward each other. The feedback linkage of the loop is seen as the continuous awareness of the individual's doing. The feedback

signal tells him what his attainment is at every instant in the course of his operation toward self-realization. Figure III-1 depicts the element of such a partner as a generalized model.

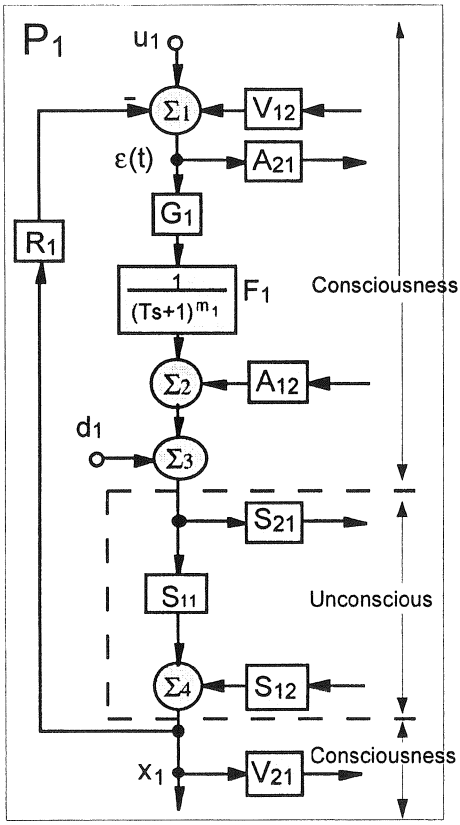


Figure III-1: The generalized structure of the social unit.

A very short introduction to this model:

u_1 is the goal an individual has in mind for himself; G_1 signifies the

willpower factor for the realization of this goal u_1. F_1 denotes the time needed to act (any action needs time). S_{11} is the transfer factor of the unconscious. S_{12} and S_{21} are the amount of the unconsciously, mutually exchanged information in the form of attitude between two individuals P_1 and P_2. R_1, the feedback linkage, is the magnitude of awareness of the own action. A_{12} and A_{21} are magnitude factors of the exchanged physical action amongst two partners (arguing, fighting). V_{12} and V_{21} are factors of magnitude of the amount of mutual observation of each other's doing. And d_1 denotes a disturbance signal coming from the further environment. $\varepsilon(t)$ is the discrepancy between the goal u_1 and the momentary attainment of the loop's goal u_1. $\varepsilon(t)$ is that part of u_1 which is not attained yet. The individual P_1 tries continuously to reduce $\varepsilon(t)$ to a minimum in order to reach u_1 as closely as possible.

Although such a model seems to be a terrible simplification of a human being, it fits well to describe daily repetitive simple behaviors of people. For our purpose in this chapter, the model will even be further trimmed and somewhat modified.

The Model of the Hierarchy

Figure III-2 depicts a generalized structure in which all three mentioned constituents of the system, the two superiors and the inferior in rank, have self-awareness, i.e., immediate feedback of their own doing. Each one wants to know what he is doing, i.e., each one has a conscience and a consciousness. In addition each one wants to know what everybody else is doing in the structure he is involved with.

The top superior is called B_1 (boss 1); his next subordinate, the lower superior, is B_2 (boss 2); and the lowest level, the real subordinate, shall be called S_u. The top boss also gets the feedback from boss B_2's doing in order to have control of the

doing of both his subordinates, B_2 and S_u. Each one in the hierarchy knows what every one below him does - but not the other way around, not upwards in the hierarchy. The boss knows what you do, but you do not know what the boss does, a real situation of life!

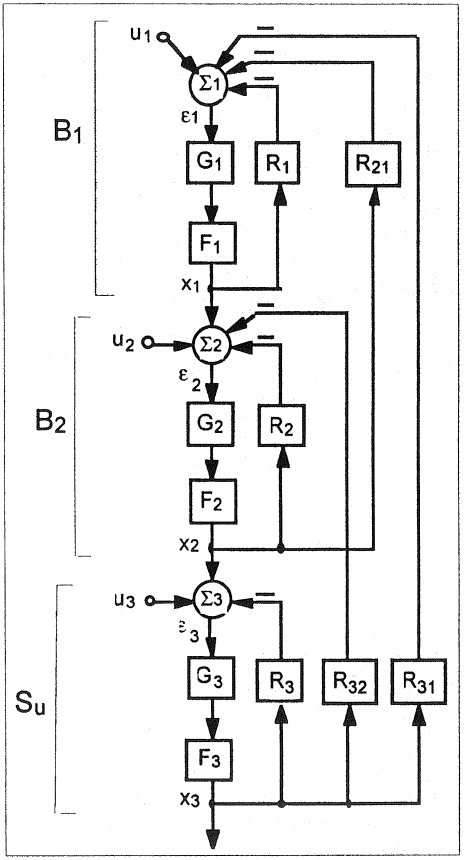


Figure III-2: Generalized structure of two superiors B_1 and B_2 and one subordinate S_u.

In the same Figure III-2, u_1, u_2, and u_3 are the goals each one of the three individuals has in his mind for his own purpose. The variable x_3 is the instantaneous attainment with respect to the final goal u_1. The three willpowers G_1, G_2, and G_3 are the willpowers that the three constituents of the system exert in order to reach their individual goal x_1, x_2, and x_3, respectively. The agents R_1, R_2, and R_3 are the individual evaluation factors of their feedback signals $-x_1$, $-x_2$, and $-x_3$, whereas the factors R_{21}, R_{31}, and R_{32} are the bridging feedbacks among the three individuals. R_{21} and R_{32} provide midst controls. R_{31} is the factor of the overall control, the control of B_1 of the final output. F_3 stands for the time-behavior of S_u. S_u does the work. He needs time to operate. The superiors exert their willpower instantaneously, - no delay in giving orders! Therefore, F_1 and F_2 will both be +1. Therefore, the time arrangement of F_3 in connection with all the other parameters determines the stability of the total structure. Feedback systems can become unstable and then ruin the goal approach. They can become self-destructive. We know that now almost *ad nauseam*, but this fact sets the existential limit.

To make it basic and as simple as it was done in former chapters, F_3 is a series of three linear differential equations of the first order. All three equations shall have equal time constants T = 1: See equation (III-1) where s is the Laplace-Operator:

$$F_3 = \frac{1}{(Ts+1)^3}; \; T = 1. \qquad \text{(III-1)}$$

$\Sigma 1$, $\Sigma 2$ and $\Sigma 3$ in Figure III-2 are the control locations. Through these points $\Sigma 1$, $\Sigma 2$, and $\Sigma 3$, the three constituents know the momentary values passing through these respective loci. All three constituents know what is happening within the structure - from top downwards toward the lower levels!

Equations (III-2) describe the system. As the system is linear (linear differential equations) the mathematics is trivial. The main

purpose of the essay is the cybernetic approach of our specific topic. We want to know how people behave in their involvement. As formulae tell and explain their individual stories, some of the mathematical expressions are given. They also allow the reader to do further investigations with ease - and to check what we are doing! And, as we will see later, the equations render deeper insight into the behavior of the character of the social hierarchy.

$$\begin{aligned}
(1+G_1R_1)x_1 &+ G_1R_{21}x_2 + G_1R_{31}x_3 &&= G_1u_1 + 0u_2 + 0u_3 \\
-G_2x_1 &+ (1+G_2R_2)x_2 + G_2R_{32}x_3 &&= 0u_1 + G_2u_2 + 0u_3 \\
&-G_3F_3x_2 + (1+G_3F_3R_3)x_3 &&= 0u_1 + 0u_2 + G_3F_3u_3 \qquad \text{(III-2)}
\end{aligned}$$

Our interest is focused now on the three attainments, firstly the attainment of boss B_1, $x_3(u_1)$, then that of boss B_2, $x_3(u_2)$; and of the most important, of the lowest in the hierarchy, of S_u, $x_3(u_3)$. The attainment $x_3(u_3)$ is what the inferior, the subordinate, attains for himself, i.e., for his own goal, his self-value. The two attainments $x_3(u_1)$ and $x_3(u_2)$ are what the bosses B_1 and B_2 will get out of the system according to their goal u_1 and u_2. The value $x_3(u_1)$ signifies the final product for the boss B_1, i.e., B_1´s attainment. The three attainments are represented with the three equations (III-3), (III-4), and (III-5).

$$x_3(u_1) = \frac{\begin{vmatrix} 1+G_1R_1 & G_1R_{21} & G_1 \\ -G_2 & 1+G_2R_2 & 0 \\ 0 & -G_3F_3 & 0 \end{vmatrix}}{\begin{vmatrix} 1+G_1R_1 & G_1R_{21} & G_1R_{31} \\ -G_2 & 1+G_2R_2 & G_2R_{32} \\ 0 & -G_3F_3 & 1+G_3F_3R_3 \end{vmatrix}} u_1 \qquad \text{(III-3)}$$

Note - for mathematicians - that for easier perception, the somewhat more elegant but the more abstract *state space method* is avoided.

$$x_3(u_2) = \frac{\begin{vmatrix} 1+G_1R_1 & G_1R_{21} & 0 \\ -G_2 & 1+G_2R_2 & G_2 \\ 0 & -G_3F_3 & 0 \end{vmatrix}}{\begin{vmatrix} 1+G_1R_1 & G_1R_{21} & G_1R_{31} \\ -G_2 & 1+G_2R_2 & G_2R_{32} \\ 0 & -G_3F_3 & 1+G_3F_3R_3 \end{vmatrix}} u_2 \qquad \text{(III-4)}$$

$$x_3(u_3) = \frac{\begin{vmatrix} 1+G_1R_1 & G_1R_{21} & 0 \\ -G_2 & 1+G_2R_2 & 0 \\ 0 & -G_3F_3 & G_3 \end{vmatrix}}{\begin{vmatrix} 1+G_1R_1 & G_1R_{21} & G_1R_{31} \\ -G_2 & 1+G_2R_2 & G_2R_{32} \\ 0 & -G_3F_3 & 1+G_3F_3R_3 \end{vmatrix}} u_3 \qquad \text{(III-5)}$$

As the three goals, u_1, u_2, and u_3, are incompatible, the other two goals have to be set to zero for the determination of one specific goal attainment (everybody has to, and only can, realize himself). We do not look at productivity of manufacturing where products can be added to a total attainment. We look at the self-value of the constituents, and especially of the subordinate S_u. Self-value can be considered as life-value. Self-value is immaterial. Therefore:

For calculating $x_3(u_1)$, $u_1 = 1$, $u_2 = 0$, and $u_3 = 0$;
For calculating $x_3(u_2)$, $u_1 = 0$, $u_2 = 1$, and $u_3 = 0$;
For calculating $x_3(u_3)$, $u_1 = 0$, $u_2 = 0$, and $u_3 = 1$.

To take all 10 parameters of Figure III-2 into account does not lead to a reasonable clarity of the situation. Reduction to a very basic structure is necessary to remain within a perceivable frame and to offer a transparent situation. The elementary case, considered herein, might be the one with $R_1 = 0$, $R_2 = 0$, and $R_{21} = 0$. As mentioned, we assume that the two bosses do not care for a feedback signal of their own behavior. They do not care about their own doing and about the effect their doing has within the internal social structure. They act just straight downwards with

their willpowers G_1 and G_2. Such non-reflective behavior can be assumed for what a general boss-behavior is about. When investigating social structures, it is necessary to keep the mind on simple expectations. Although our systems are bursting with exaggerated simplifications, the comprehension for a clear understanding is nevertheless quite demanding.

Some further assumptions and the subsequent simplifications are: The goal u_1 is dominant. The top boss B_1 does not care about the personal realizations of the under-boss B_2 and the subordinate S_u. B_1 has his willpower and looks only after the final attainment x_3 in regard of his goal u_1, the top goal. This top goal might be B_1's bank account with which he identifies himself! For having power over the subordinate S_u, both bosses control x_3. With these reflections the structure Figure III-2 becomes reduced to Figure III-3.

The two main questions posed are now:

1. What is x_3 as a function of u_1, that is B_1's attainment?
2. What is x_3 as a function of u_3, the self-value of S_u?

The goal attainment of B_2, i.e., $x_3(u_2)$, shall be disregarded when it comes to numerical examples further down.

With $R_1 = 0$, $R_2 = 0$, and $R_{21} = 0$, equation (III-3) becomes equation (III-6). It is shown as a simple fraction of numerator and denominator:

$$x_3(u_1) = \frac{G_1G_2G_3F_3}{1+G_3F_3R_3+G_2G_3F_3R_{32}+G_1G_2G_3R_{31}F_3}u_1. \qquad \text{(III-6)}$$

Equation (III-4) becomes equation (III-7). And equation (III-5) becomes equation (III-8).

$$x_3(u_2) = \frac{G_2G_3F_3}{1+G_3F_3R_3+G_2G_3F_3R_{32}+G_1G_2G_3R_{31}F_3}u_2 \qquad \text{(III-7)}$$

$$x_3(u_3) = \frac{G_3F_3}{1+G_3F_3R_3+G_2G_3F_3R_{32}+G_1G_2G_3R_{31}F_3}u_3 \qquad \text{(III-8)}$$

Considering only steady state situations, that is end attainments, then $F_3 = 1$ (because $s = 0$; $t = \infty$). And with all feedback signals being +1 (the negative signs for feedback are implicit in the formulae), the formulae (III-6) to (III-8) change to (III-9), (III-10), and (III-11).

$$x_3(u_1) = \frac{G_1G_2G_3}{1+G_3+G_2G_3+G_1G_2G_3}u_1 \qquad \text{(III-9)}$$

$$x_3(u_2) = \frac{G_2G_3}{1+G_3+G_2G_3+G_1G_2G_3}u_2 \qquad \text{(III-10)}$$

$$x_3(u_3) = \frac{G_3}{1+G_3+G_2G_3+G_1G_2G_3}u_3 \qquad \text{(III-11)}$$

Formulae (III-9) to (III-11) tell now a surprising story. The willpower of both bosses, G_1 of B_1, and G_2 of B_2, are in all three denominators. If G_1 and G_2 are large, they tremendously reduce the attainment $x_3(u_3)$ of the subordinate. The numerators shrink from $x_3(u_1)$ via $x_3(u_2)$ to $x_3(u_3)$, i.e., from $G_1G_2G_3$ to G_2G_3 and down to G_3. This is to say that the more authorities the subordinate S_u has above him, less he gets for himself, for his very own self-value. This is the main point to be verified in this chapter.

When a social system (any system) is composed of several individuals, the total systems always appears in its entangled form in the denominator of the equation of the goal attainment. This denominator is the characteristic equation of the *total* interacting system (if the denominator is set equal to 0). The character of the overall system, of the total system, is in the denominator. Whereas in the numerators the interest appears, i.e. the willpowers, of the specific individual (or individuals) that take something out of the system - whatever this *something* might be or is.

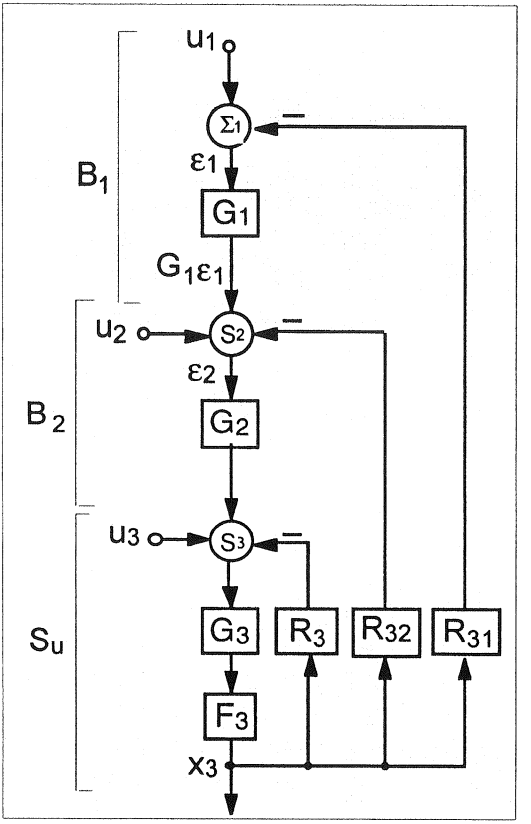


Figure III-3: Reduced structure of Figure III-2 toward a more plausible reality.

It is, therefore, important to recognize that in all three attainments we are going to look at, i.e., equations (III-9) to (III-11), the character of the whole system is packed in the denominator and pulls any output *down*, i.e., reduces it. The whole system hangs on the numerator as a pulling-down-weight. The more individuals there are forming a hierarchical system, the heavier is the load that has to be carried by any lower situated individual in the system

when he is forced to make a living within the system. And the burden is the heavier the lower the individual's willpower is or can be in relation to the overall willpower of the system's constituents. It is the *social entropy* that lies hidden in this feature!

The numerator for boss B_1 in the equation (III-9) is $G_1G_2G_3$. He benefits from the willpowers of B_2 and S_u, i.e., from G_2 and G_3. He gains from the product of the effort of all three constituents, of himself and the two he dominates. He takes out of the system for his benefit: $x_3(u_1)$ is a function of $G_1G_2G_3$.

The numerator for boss B_2's benefit is G_2G_3. B_2's willpower G_2 incorporates the willpower G_3 of S_u for his doing. $x_3(u_2)$ is a function of G_2G_3.

And finally, the numerator of S_u is only his own willpower G_3. $x_3(u_3)$ is merely a function of G_3.

Both bosses, B_1 and B_2, gain from S_u. Therefore, it is no wonder that deprived individuals go on strike, boycott, and revolt, in order to escape too much exploitation of their life value. The higher the boss in the hierarchy, the higher is the exploitation of the lower leveled individuals. The harder S_u works for his own-value, the more the bosses gain from him. There is no escape for S_u if he has to stay in the system. In plane wording: The lavisher the top manager's ranch is, the more desolate the worker's shed will look. And in no way would a top manager share one single dollar with a desolate worker. That's how it is!

Some numerical data are now to be demonstrated. They are taken with the requirement of homeostasis, i.e., at the dynamic stability limit in connection with the involvement of F_3, equation (III-1). Why are these values taken at the stability limit? The system can operate only when it is continuously in a stable state. Therefore the willpowers G_1, G_2, and G_3 have to be taken, when the system operates, acts, lives ($s \neq 0$, $t \neq \infty$), although the final attainments

are considered when s = 0, this is after an operation's maximum end result is attained: (s = 0, or t = ∞). And the stability limit is a convenient borderline (for mathematicians: no damping effects to be considered).

Numerical Data

a) If the willpowers G_1 and G_2 of the two superiors, B_1 and B_2, are as low as 1, the subordinate S_u can exert some reasonable willpower for his one self-value, $G_3 = 2.67$. Then $x_3(u_3)$ becomes 0.3 or 30% [u_3 = 1 or 100%]. And $x_3(u_1)$, the attainment of B_1 [u_1 also being 1 or 100%], would become 30% as well. But in autonomy, i.e., without any superiors, S_u would make 73% with this willpower of $G_3 = 2.67$. But such a weak result of only 30% is of no interest for the boss B_1. Definitely the top boss B_1 wants to have more willpower and to get more attainment.

b) In reality B_1 will no doubt exercise more willpower to get more out of the system. Say that he exerts a G_1 of 8. And B_2's G_2 will be 1.67. Then S_u can exert only the shabby willpower of $G_3 = 0.5$. The result is: $x_3(u_3) = 5.5\%$. And the top boss B_1 makes $x_3(u_1) = 74\%$. S_u's self-value is kaput! If S_u would - and if he could - stay autonomous, he could exert a willpower G_3 of 8 (at the stability limit with his time behavior equation (III-1); and his attainment x_3/u_3 would be $G_3/(1+ G_3) = 89\%$.

It is a fact (revealed by calculations) that the higher the willpowers of B_1 and B_2, and the lower the willpower of S_u (but not zero!), the higher B_1's success $x_3(u_1)$ becomes.

Formula (III-9) indicates that for B_1's success the numerator $G_1G_2G_3$ has to be big, and the denominator $1+G_3+G_2G_3+G_1G_2G_3$ should be small.

Table III-1 shows some results, a), and b) from the willpowers above, and one more: c) with $G_1 = 4$, $G_2 = 3$ and again $G_3 = 0.5$.

Table III-1: $R_3 = R_{31} = R_{32} = 1$:

	G_1	G_2	G_3	$x_3(u_1)$	$x_3(u_3)$	
a)	1	1	2.67	30%	30.0%	
b)	**8**	1.67	0.5	**74%**	5.5%	(probably the reality)
c)	4	3	0.5	67%	5.5%	

What happens if either S_u suppresses feedback-information toward the bosses or - what comes to the same - B_1 and B_2 sense less feedback than the proper amount x_3 (R_{31} and R_{32} being < 1 instead of 1)? Less feedback information given to the superiors, $R_3 = 1$, $R_{31} = R_{32} = 0.5$, increases the chance for S_u. See Table III-2:

Table III-2: Reduced feedback to the authorities: $R_{31} = R_{32} = 0.5$; $R_3 = 1$:

	G_1	G_2	G_3	$x_3(u_1)$	$x_3(u_3)$	
a)	1	1	4	44%	44%	
b)	**8**	1.67	0.94	136%	10%	(probably the reality)
c)	4	3	0.94	124%	10%	

Reduced feedback to the authorities and very low willpower G_1 and G_2: $R_3 = 1$, $R_{31} = R_{32} = 0.25$ results in Table III-3. S_u gets - with $G_3 = 5.33$ - a good share for his survival, but again, a very improbable situation in real life. B_1 does not want to be equal with a subordinate, with B_2, and in addition with a very low willpower of only $G_1 = 1$. But reducing the amount of feedback, if discovered by the bosses B_1 and B_2, would be considered dishonest, as lying. And such behavior would become severely penalized. S_u would face dismissal or - in a totalitarian regime - even execution.

Table III-3: $R_3 = 1$, $R_{31} = R_{32} = 0.25$:

G_1	G_2	G_3	$x_3(u_1)$	$x_3(u_3)$
1	1	5.33	59%	59%

Conclusion

The more authorities hang *vertically* together and exert their willpower, the worse the situation becomes for the lowest in the hierarchy, the subordinate S_u, because all the authorities hang in the denominator of the attainments, as formulae (III-9) to (III-11) indicate. According to formula (III-11), S_u becomes practically nothing if B_1 and B_2 are not very moderate. And in reality, we all know, they are not! The authorities cut S_u into pieces. Equal rights - even in a democracy - is a naive illusion of naive dreamers or of outrageous hypocrites.

The wisdom is old:

They that are bound must obey,

and

The weak always goes to the wall.

The situation improves somehow with reduced feedback. But with less feedback the attainment of B_1, i.e., $x_3(u_1)$, goes beyond 100% (Table III-2, cases b) and c). What does this fact mean in cybernetic terms? As we mentioned: informing the authorities with a feedback less than the proper amount of 1 (R_{31}, and R_{32}), i.e., informing incorrectly, and to make them believe that they get correct feedback, suggest to them that they are closer to their goal than what in reality is actually the fact. The errors ε_1 and ε_2 in Figure III-3, performed in the summing points $\Sigma 1$ and $\Sigma 2$, become $u_1 - R_{31}x_3$ and $G_1\varepsilon_1 - R_{32}x_3$ (R_{31} and $R_{32} < 1$) instead of $u_1 - x_3$ and $G_1\varepsilon_1 - x_3$. Such a situation is misleading. Reduced feedbacks overshoots

the mark. - With reduced feedback the denominator becomes smaller. This can easily be seen on the goal attainment of a single loop, x/u. We show that with x_3/u_3 of Figure III-1 as an isolated single loop of S_u. The attainment x_3/u_3 becomes formula (III-12):

$$\frac{x_3}{u_3} = \frac{G_3F_3}{1+G_3F_3R_3}. \qquad \text{(III-12)}$$

If $|R_3|$, the absolute value of the feedback signal, is smaller than 1, x_3/u_3 can easily grow beyond the value of $G_3F_3/(1+ G_3F_3)$ and $R_3 = 1$.
$[1+G_3F_3R_3 = 0]$ is the characteristic equation of the loop. It can be said that the loop $1+G_3F_3R_3 = 0$ with $R_3 < 1$ becomes socially an illusion, a dishonesty. But is our globe not full of dishonesty, corruption, bribery, and crookedness?

Another cybernetic remark:

Formula (III-6) indicates that the effect of the three willpowers, G_1, G_2, and G_3, cannot be fathomed simply by inspection. A complex system, even of relatively modest involvement as Figure III-3 represents, is not conceivable and explainable by its components. Very basic elements in interacting composition already prevent us from directly knowing. Intricacies require tedious analysis. It is models, even of basic forms, which can give us some grasp of the complexities encountered in social behavior.

As there is no way to explain the system's behavior by reference to its parts, how will it ever be possible to establish peace in daily life where the components themselves change continuously? Peace on earth is a fantasy in a brain that sees the world in a dreadful simplicity and regards its functioning as simple as this brain is meager to perceive.

Going back to the topic:

Advice and rule for the subordinate, not to become humiliated or

even ruined in his existence, is: S_u stay on your own (S_u in autonomy)! Remain independent - if you can! Then, with your G_3 of 8 you can achieve 8/9, i.e. 89% of your set goal u_3. Be your own authority! History knows without computation: *He who travels fastest is he who travels alone.*

With every continuously forced demand imposed upon a person, his self-value shrinks by a corresponding quantum. There are men bullying their wives, bitchy women tyrannizing their husbands, and parents tormenting their children. Equally grim behavior occurs all over in political life. What is the remedy for the plagued and attacked person? He shall peel off, shall break out - if he can. If the fairytale were true that David killed Goliath, one could try to kill the authority. Don't try. You are the one who will be killed!

When I, the author, emigrated to the USA in 1970 to be employed in a company manufacturing automatic control equipment, most people there did not talk to me because I was an immigrant. I then was given the advice to take a course at a non-resident night-class in order to demonstrate my intention to become a resident of the country. One of the very first rules we were taught was: *If you obey you are free.*

We must know that the ongoing fusions of companies and religions to ever growing large concerns and religious communities with necessary hierarchies for control create a modern, huge slavery, the world slavery. The globalization of our days will create more damage than the devastating colonialists did. But as we do not have a collective consciousness, comparable to the collective unconscious, we cannot realize those facts and therefore will not be able to escape.

IV. If You Can´t Beat ´em, Join ´em!

Introduction

We take another proverb to be modeled functionally. The assumption is that two partners, who are striving independently toward their own goal, are in a hostile relationship with each other to begin with. One of the partners has less striving willpower than the other, and the weak one senses the damage the strong partner intends to impose on him. In order to avoid the damage, the weak ally tries to change the hostile relationship into a consentient one. The strong partner rejects the offer and, to the contrary, increases the hostile attitude into a strong antagonism. Antagonism is defined by setting the opposite goal from what the partner is attempting. In a hostile relationship such kind of opposition generates even more damage to the weak partner. The weak partner therefore gives up his own goal and adopts his opponent's goal; he joins him in having a common purpose. This way he can avoid the otherwise tremendous damage, but he also loses his independence and does not know whether he will receive the credit for his contribution in the very end.

The scenario of a single partner was described in detail in Volume I.

The Model's Description

From Volume I the model Figure IV-1 must by now be sufficiently familiar to the reader. Nonetheless we might give a short recapitulation, a short review, of the individual's social sketch. The social individual:

a) has a goal that he is attempting to reach in a time-continuous manner,
b) has continuous self-control of his goal proximity,
c) has a willpower that emphasizes the effort for the goal striving process,
d) has the capacity to fight the effect of exogenous and

endogenous disturbances that occur randomly,
e) has a delay of acting, and in connection with other individuals,
f) faces the inherent danger to become instable if his dynamic limits become transgressed and/or his willpower becomes too excessive, and finally
g) has unconscious and conscious interacting information exchange with partners.

These features a) to g) result in a closed functional loop that has the eminent capacity of self-control and of continuously sustained action. Self-control, goal oriented endeavor, and cognizance of goal-proximity provide consciousness. Or, with consciousness, controlled interaction becomes possible. As unconscious interaction among partners is archetypical and, thus, is inevitable and predominant, only this kind of interrelation is considered in this chapter. Unconscious interaction is called attitude, whereas conscious interaction is rather called communication.

The model of our dualism, Figure IV-1, illustrates two simplified individuals with their unconscious interaction via the transferred information factors S_{12} and S_{21}. In our specific case, P_1 is supposed to be a strong partner with a willpower of $G_1 = 6$. Partner P_2 shall be feeble with a very low willpower of $G_2 = 1.5$. We know well that numerical values serve for comparison only. It is the ratios of the values or their differences that count. No concrete value can be allocated to social characteristics yet.

Before any numerical calculations can be performed, the situation has to be clear about whether the system operates within a stable or unstable area. Systems with self-control and continuous action are notorious for becoming unstable if they exert too much willpower. Unstable systems lose their ability to behave in a goal-oriented manner. They break down or explode.

The stability limits that bound the stable area depend upon the intrinsic characteristics of a system. With the assumption that both partners have the same speed of behavior, i.e., equal dynamic

features, Figure IV-2 illustrates the stability limits of the assumed system in the two situations, in a consentient and in a hostile attitude interaction. As the partners are symmetric concerning the speed of their *habitus*, the diagrams are symmetrical as a function of the partners' willpowers G_1 and G_2, respectively - presupposing that the feedback factors R_1, R_2, and the unconscious transfer factors of the partners, S_{11}, S_{22}, all be +1; and also that the coupling factors $S_{12}S_{21}$ are ±1. For hostile interaction, this factor $S_{12}S_{21}$ is +1, and for consentient behavior, the factor $S_{12}S_{21}$ is -1. The chosen point of operation, point $G_1 = 6$ and $G_2 = 1.5$, lies within the stable area for both, for the hostile and the consentient relationship. The goal u_1 is defined as the goal of P_1, whereas u_2 is the goal of P_2. x_1 is the momentary goal proximity of P_1; x_2 is the momentary goal proximity of P_2. Each partner strives to minimize the distance $u-x = \varepsilon$ in order to bring his x to a maximum. In technical terms, ε is called the error signal with respect to the goal. The endeavor is to minimize the error.

A distinction concerning the two goals is in order:

The goals can, firstly, be *independent* from each other, i.e. $u_1 \neq u_2$. This means that for determining the approach of x_1 to u_1, u_2 is set to 0, and for calculating of x_2 in regard to u_2, u_1 is set to 0.

Secondly, the two goals can be *common*. Then they have the same orientation and the same value. With *common* or *joined* goals we mean identical goals. For the computer, it means $u_1 = u_2 = u$.

In a third case, the two goals can be *antagonistic*, i.e., $u_1 = -u_2$, or $u_2 = -u_1$. In case of antagonistic goals, we will see that the saying holds true *One man's meat is another man's poison* because for each partner his own goal is positive, the opponent partner's goal, on the contrary, is negative. And so will their achievements be: contrary.

The mathematics for calculating the two different attainments, in hostility and in consent, and in regard to the three mentioned goal

settings, independent, common, and antagonistic, are given with the formulae of equations (IV-1):

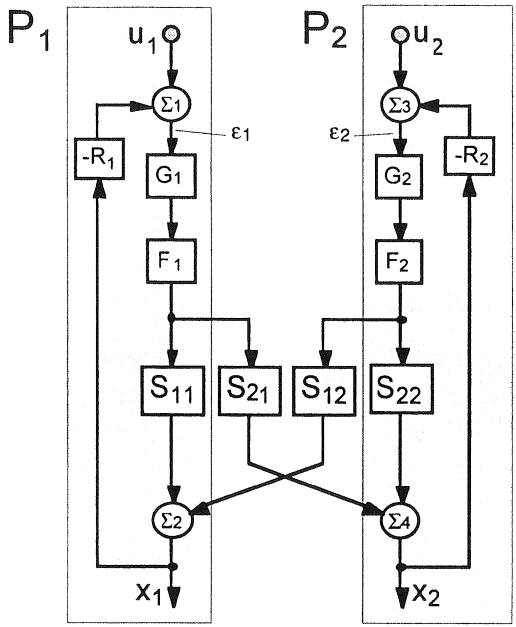


Figure IV-1: The dual-system of attitude.
P_1 is partner 1; P_2 is partner 2.

u_1,	u_2	the partners' goals, assumed to be constant;
G_1,	G_2	Goal striving willpowers;
R_1,	R_2	Feedback, factors of self-control;
S_{12},	S_{21}	Unconscious interaction transfer functions;
S_{11},	S_{22}	Partner's internal unconscious transfer factors;
F_1,	F_2	Delay transfer functions, responsible for time-dependency;
x_1,	x_2	the partners' moment-to-moment goal attainment.

$$x_1 = \frac{\begin{vmatrix} G_1F_1S_{11} & R_2G_2F_2S_{12} \\ G_1F_1S_{21} & 1+G_2F_2S_{22}R_2 \end{vmatrix}}{|D|} u_1 + \frac{\begin{vmatrix} G_2F_2S_{12} & R_2G_2F_2S_{12} \\ G_2F_2S_{22} & 1+G_2F_2S_{22}R_2 \end{vmatrix}}{|D|} u_2$$

$$x_2 = \frac{\begin{vmatrix} 1+G_1F_1S_{11}R_1 & G_1F_1S_{11} \\ R_1G_1F_1S_{21} & G_1F_1S_{21} \end{vmatrix}}{|D|} u_1 + \frac{\begin{vmatrix} 1+G_1F_1S_{11}R_1 & G_2F_2S_{12} \\ R_1G_1F_1S_{21} & G_2F_2S_{22} \end{vmatrix}}{|D|} u_2$$

where

$$|D| = \begin{vmatrix} 1+G_1F_1S_{11}R_1 & G_2F_2S_{12}R_2 \\ G_1F_1S_{21}R_1 & 1+G_2F_2S_{22}R_2 \end{vmatrix} \qquad \text{(IV-1)}$$

Each of the elements in the formulae (IV-1) has a dynamic content, either F_1 or F_2. They determine the time-functional behavior that together determines the stability limits of Figure IV-2. But our final interest is not concerned with the time-functional comportment, i.e., the goal attainments as a function of time, but we are rather concerned with the end attainments of a process. As the system is linear and Laplace-transformed, this final state is achieved with the Laplace operator set to zero; s = 0 or, what comes to the same, F_1 and F_2 are both set to +1 in the equations (IV-1).

The two unconscious transfer functions S_{12} and S_{21} in mutual interacting form the loop

$$G_1\text{-}F_1\text{-}S_{21}\text{-}\Sigma4\text{-}(-R_2)\text{-}\Sigma3\text{-}G_2\text{-}F_2\text{-}S_{12}\text{-}\Sigma2\text{-}(-R_1)\text{-}\Sigma1\text{-}G_1,$$
$$(R_1 = R_2 = 1)$$

These two functions, S_{12} and S_{21}, determine whether a relationship is hostile or consentient. In hostility $S_{12} > 0$ and $S_{21} > 0$. As done in Volume I, we call this constellation a (+ +)-system. The interacting loop that connects the two partners forms a positive feed-cross loop. Positive feed-cross damages each other's goal attainment. In consent, however, $S_{12} > 0$ and $S_{21} < 0$, or $S_{12} < 0$ and $S_{21} > 0$, in short called a (+ -)- or (- +)-system. Such an interacting loop forms a negative feed-cross loop that supports goal attainments. Consentient attitudes help to increase each

other's goal attainment. The effect of these two terms, S_{12} and S_{21}, are extensively explained in Volume I.

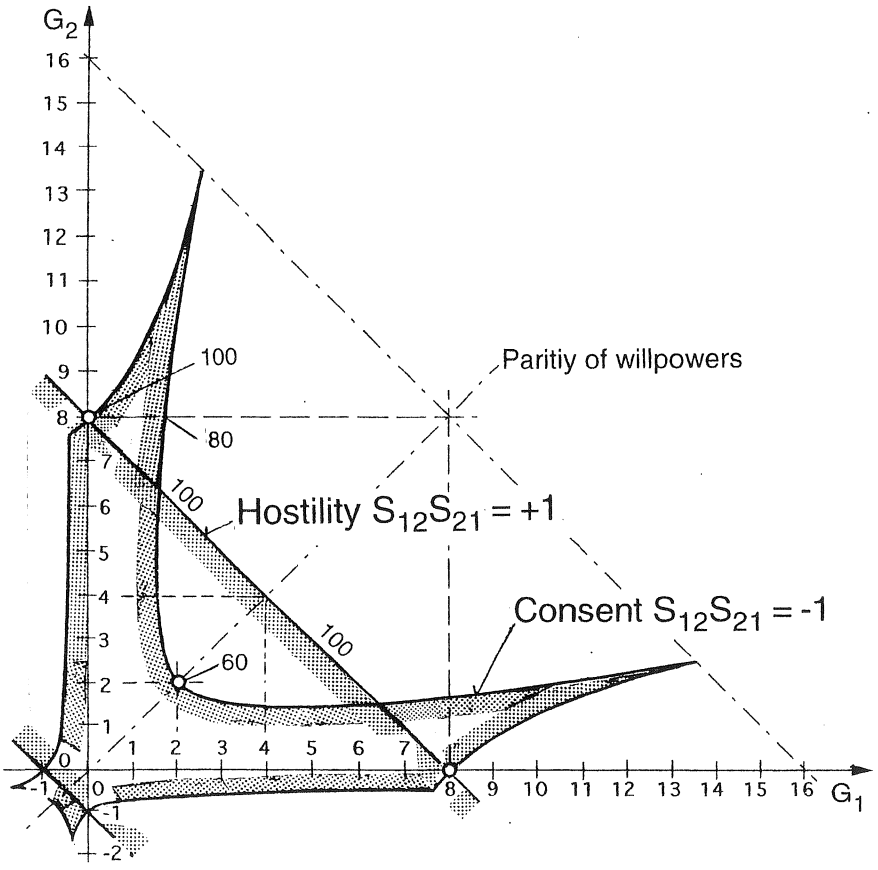


Figure IV-2: Stability limits of a consentient and a hostile relationship of two partners, P_1 and P_2.
Only $G_1 > 0$ and $G_2 > 0$ will be considered.

The points in the Figure IV-2, marked with 100, 80, 60, indicate the

emotional speeds of the systems. It can be seen that at parity of willpowers $G_1 = G_2$ the speed of hostility is about twice the speed of consent.

Psychologists know well that unconscious information exchange, i.e., attitude in relationships has a significant influence on each person's welfare! In our model this fact comes numerically to light.

The third interaction type, the system $S_{12} < 0$ and $S_{21} < 0$, or in short the (- -)-system, is called destructive or socially pathological. It will not be considered in the following, although such situations exist.

If the two partners are in a hostile conflict with each other, and if the weak partner cannot beat the strong one - calculations will follow - the weak partner can offer to join the strong one - if this one has the miraculous mercy to give up his goal in regard for himself and to accept his weak adversary's intention to join in with him to a common goal. This act eventually leads to the joined structure Figure IV-3. There, the two outcomes, x_1 and x_2, become added to x.

The Joined Structure

Figure IV-3 shows the structure of the partnership in the case of joint goals. There is no attitude-information exchange and no longer any individual feedback control. Due to the goal amalgamation, each one's independence is lost. We have a strongly emphasized parallel-structure in the sense of a militaristic concept, or a pure unification.

The partners do not have an efficacious individual attitude anymore; they *go in parallel*. The goal now is u and the attainment is x/u. The calculation of the attainment becomes mathematically as simple as the structure is, namely equation (IV-2):

$$x = \frac{G_1F_1S_{11} + G_2F_2S_{22}}{1 + G_1F_1S_{11} + G_2F_2S_{22}}u. \qquad \text{(IV-2)}$$

Putting s = 0 for F_1 and F_2, i.e., for getting the final attainment, equation (IV-2) becomes equation (IV-3) with also S_{11} and S_{22} equal to 1:

$$x = \frac{G_1 + G_2}{1 + G_1 + G_2}u. \qquad \text{(IV-3)}$$

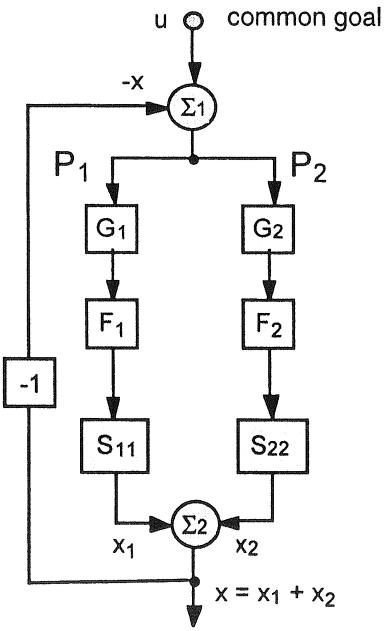


Figure IV-3: The dual system without exchanging attitude influence, the parallel, or militarized structure of a common goal.

Calculated Data

What can each partner attain individually as the setting in Figure IV-1 and in the pooling state as set in Figure IV-3?

As assumed, the partner P_1 is strong whereas the partner P_2 is weak. But in any of the three cases to be calculated, i.e., hostile and consentient, and in the joint structure case, the partnership has to operate inside the stability area and, thus, has to be stable. The limits of stability for the dual system of attitude - hostile and consentient - are depicted in Figure IV-2.

The limit of stability for the system of Figure IV-3 - common goal - is attained with $G_1 = 6$ and $G_2 = 2$, therefore the system with $G_1 = 6$ and $G_2 = 1.5$ is stable. (The stability limit is reached if $G_1+G_2 = 8$.)

The goal attainments are defined as x_1/u_1 and x_2/u_2, when there are separate goals. The goals are set to $| u_1| = 1$ and $|u_2| = 1$, or to 100% each. As every partner's goal is his absolute concern, the goals' magnitude is put to 1 for both partners.

We now have three different situations concerning relationships.

1. Hostile Relationships, Figure IV-1;
2. Consentient Relationships, Figure IV-1;
3. Joint relationships, Figure IV-3.

G_1 of P_1 shall be 6, whereas G_2 of P_2 shall be 1.5 for all three cases.

In the relationship-form 1, we look at two different goal settings:

1a) Independent goals,
1b) Antagonistic goals.

1. *Hostile* relationships: $S_{12}S_{21} = +1$, $S_{12} = +1$ and $S_{21} = +1$. ($|S_{12}S_{21}| = 1$ is considered to be a *strong* interaction.)

(1a) *Independent* goals in *hostility*, (++)-system:
$u_1 = 1$, $u_2 = 0$: $x_1/u_1 = 0.70$ or 70%,
$u_1 = 0$, $u_2 = 1$: $x_2/u_2 = 0.17$ or 17%.

A hostile relationship of a weak partner with a strong opponent is fatal for the weak partner. But antagonistic goals are definitely lethal for him:

(1b) *Antagonistic* goals in *hostility*, (++)-system:
$u_1 = +1$, $u_2 = -1$: $x_1 = +0.53$ and $x_1/u_1 = 53\%$;
x_2 also becomes +0.53 or +53%. But as $u_2 = -1$ and $x_2 = +0.53$, the goal attainment x_2/u_2 becomes -53%.
In this case where $u_2 = -1$ and $x_2 = +0.53$, the goal attainment x_2/u_2 becomes -0.53.

If P_2, as the weak partner, sets a negative goal $-u_2 = -1$, because he goes into opposition toward P_1, his damage is catastrophic. He damages P_1 from 70% down to 53%, but he, P_2, goes to the wall with his endeavor by attaining the opposite of P_1, namely -53%.

What happens if P_1 wants the opposite of P_2? If he, P_1, sets a negative goal with $u_1 = -1$, $u_2 = +1$? Then x_1/u_1 becomes -0.53 or -53%, and x_2/u_2 becomes -0.53 or -53%.
The strong P_1 makes $-x_1/-u_1 = +53\%$. This is the same in absolute measure as before. And the weak P_2 makes $-x_2/+u_2 = -53\%$, also as before.

The weak P_2 cannot win! He shall not oppose a strong partner. The strong guy damages the weak one. There is no escape: antagonism elicits confrontation, and confrontation elicits resistance.

The weak goes to the wall if he stays in a hostile relationship with a strong opponent.

That David beat Goliath may be a nice myth. Whether the goals are

independent or antagonistic, the weak person loses the battle. The weak person in an autonomous state with $G_2 = 1.5$ would make 60% and save himself quite well (see Volume I).

2. *Consentient* relationships in friendship: This situation is more sophisticated. It is necessary to differentiate.

(2a) *Independent* goals:

(2a1) $S_{12}\, S_{21} = -1$, $S_{12} = +1$ and $S_{21} = -1$.
With $S_{21} = -1$, the weak P_2 submits to the strong P_1 and provides for consent. He takes the signal S_{21} from P_1 negatively, establishing a negative, i.e., a stabilizing feed-cross loop! The results are:
$x_1/u_1 = 0.89$ or 89%; $u_1 = 1$, $u_2 = 0$
$x_2/u_2 = 0.72$ or 72%; $u_1 = 0$, $u_2 = 1$.

(2a2) $S_{12}\, S_{21} = -1$, $S_{12} = -1$ and $S_{21} = +1$.
With $S_{12} = -1$, the strong P_1 submits to the weak P_2 and provides for consentient behavior. He takes the signal S_{12} from P_2 negatively! The results are:
$x_1/u_1 = 0.89$ or 89%; $u_1 = 1$, $u_2 = 0$
$x_2/u_2 = 0.72$ or 72%; $u_1 = 0$, $u_2 = 1$.

The results are the same, independent upon who provides the consentient relationship, i.e., the minus sign for $-S_{12}S_{21}$.

This kind of consent is favorable for the weak P_2. Consent is mutual help. P_2 attains more than if he were autonomous with the low willpower of $G_2 = 1.5$, i.e., only 60%.

(2b) *Common* goals in consent; $u_1 = u_2$:
(2b1) $S_{12} = +1$, $S_{21} = -1$. The weak partner P_2 provides the consent, i.e., P_2 takes the signal S_{21} from P_1 negatively!
$x_1/u_1 = 0.94$ or 94%,
$x_2/u_2 = 0.50$ or 50%.

(2b2) $S_{12} = -1$, $S_{21} = +1$. The strong partner provides consent, i.e., P_1 takes the signal S_{12} from P_2 negatively!

$x_1/u_1 = 0.83$ or 83%,
$x_2/u_2 = 0.95$ or 95%.

As in (2b2) the strong partner P_1 makes less goal attainment (only 83%) when he provides the consentient status ($S_{12} = -1$), and the weak P_2 (with his 95%) is in a better position than his partner, it must be assumed that in competitive life situations P_2 has to establish the consentient attitude, i.e., (2b1) will be dominating so that P_1 can make 95%, and P_2 has to be satisfied with 50%.

3. *Joined* relationships, the true (and unfortunately the degenerating democratic togetherness with the attitude: same job, same pay!). The mutual attitude influence within a togetherness that transfers into a realization of existence of each other becomes nil, $S_{12} S_{21} = 0$.

(3a) *Unified* relation $u_1 = u_2 = u$. With $G_1 = 6$ and $G_2 = 1.5$, $x/u = 86\%$. There is only one goal for both partners. Their individual attainments will be added.

As there are no individual goals, there is perhaps not much endeavor for the weak P_2 to offer some contribution with his weak $G_2 = 1.5$. He might take it easy and hang himself on the strong participant by doing even nothing: with $G_2 = 0$.

(3b) Unified goals but with P_2 being on passive resistance, i.e., $G_2 = 0$: $x/u = 84\%$. The loss with $G_2 = 0$ from (3a) to (3b) is only 2%. P_1 probably will not recognize that P_2 does not contribute in any way.

(3c) An even worse scene! *Joined* goals but wherein P_2's effort is not only refusing participation, but is counteracting, i.e., $G_2 = -1.5$: $x/u = 80\%$.

Comparing the two cases (3a) and (3b), it can be seen that P_2 can easily let P_1 do all the work and be the layabout. A loss of 2% will barely be recognized. Even with a corrupting counteracting attitude (3c), P_2 could get away and consume the *democratically justified* notion: Same position, same pay!

How labor unions could promote and even fight for a false purpose if there is no strong control about how much effort becomes contributed by each employee and worker! But generally, the labor union lives far away from each individual worker's doing.

The Story

It can be seen that simple structures with very few assumptions and few data already render a full bouquet of psychosocial situations. Hence, to qualify and evaluate them requires some perseverance and some reflecting.

The usually hostile attitude is the situation where the goals are independent. If the two fighting partners are of uneven strength there is the doubtless intention of the strong partner to damage the weak one. This constellation resulted above in the goal attainments of 70% for P_1 and of 17% only for P_2. If goals are self-realization and if we assume that a minimum of, say, 25% attainment is necessary for the continuation of fighting for survival, then P_2 is bound to death, (1a).

There is no question that P_1 does not feel sorry for P_2, and that he would not try to offer P_2 a consentient relationship if this one would ask for it. *Mors tua, vita mea;* Your death is my life.

Consent with independent goals, however, would favor both, P_1 and P_2. With our assumptions, P_1 could attain 89%; P_2 would make 72%, (2a).

Consent with common goals, but where the strong partner P_1

supplies the consent (S_{12} = -1), would favor P_2 more than P_1; (2b2). P_1 could attain 83% and P_2 could reach 95%. The strong P_1 would not accept an attainment above the one of his weak partner P_2. Such a case can be disregarded; it is unreal. We may put in here the somehow wicked reality: *A friend is always delighted at your success, provided it does not exceed his own.*

Consent with collateral goals but where the weak partner P_2 supplies the consent (S_{21} = -1) would favor P_1 well but P_2 definitely less, (2b1). P_1 could achieve 94% and P_2 could achieve 50%.

As P_1 is strong (G_1 = 6) he will - with nature's probability - demonstrate an aggressive disposition and reject providing consentient behavior. The relationship will focus on (1a), the minimum for P_2.

The *cheating democratic* relationship would be achieved by joining P_1's endeavor (pretending by P_2 a *viribus unitis* as a joined relationship), and adding the two attainments x_1 and x_2 if he, P_2, wants to survive in a cheap way. In a joined endeavor the weak can hang himself on the strong partner and cry hypocritically for *égalité et fraternité!*

Whether the weak P_2 lives within the joined structure with G_2 = 1.5 (3a), whether he does not do anything, G_2 = 0 (3b), or whether he even goes into refusal by boycotting cooperation using a negative effort, G_2 = -1.5 (3c), the influence on P_1's endeavor is not serious. The outcome is between 80 and 86%. P_1 exerts all the effort and P_2 is the beneficiary, the freeloader. Such a situation might occur if P_1 is not able to control his attainment x_1 and cannot compare his x_1 with the one of P_2, with x_2. In a system of bodies that are working in parallel formation there is no separate control. The individualism gets wrecked.

If a weak person P_2 joins a structure with a strong person P_1, the weak person P_2 can gain tremendously from the strong part P_1. Going in a unified formation with P_1 (Figure IV-3) results in a

tremendous gain for P_2 without much effort, but P_2 has to share the attainment with P_1; and P_1 has to be compliant to share too. Let's assume that P_1 is not willing to share the attainment after the unification with P_2, and P_2 therefore exerts passive resistance by not contributing ($G_2 = 0$) but staying in the system of unified cooperation, P_1 still can attain his goal of 84% together with a zero-P_2 contribution. P_2 can even try to be miserable and do some harm to P_1 by putting his effort in the opposite direction ($G_2 = -1.5$). The result still would be x/u = 80%, although there is a loss of 6%. In other words, in an „ideal" democracy the weak partner cannot do too much damage to the strong partner. The weak is and remains weak and therefore should be kept out from a unified goal project.

Unfortunately many organizations are ruled by religious or social institutions that require indiscriminately equal treatment for elements of equal positions, where position is defined by the trade and not by substantial, controllable effort-attitude and, thus, by contributing.

The only way for P_1 not to become exploited - if he recognizes the situation - is by putting P_2 on his own legs. With a G_2 of 1.5 in an autonomous state P_2 will have an achievement of $G_2/(1+G_2)$ = 60% of his set goal. P_1 in autonomy would make 86% with $G_1 = 6$.

We see here that the philosophy of social welfare can have an enormous detrimental effect. A person that does not contribute anything still gets full recognition - until his wrongful behavior becomes detected and he gets dropped. Therefore, the structure Figure IV-3 needs a control authority to keep an eye on P_1 and P_2 which means that - unfortunately - there would be a third person entering the system, the controlling boss who does not do substantial work but is only controlling. And he will take home the highest recognition (i.e., pay)!

What is the essence of the study? Related to Figure IV-1: If you - as a conciliatory but weak individual - are bound to a partner who

has a strong will (obstinacy, stubbornness) and who stays hostile and, therefore, does not accept an offered consent, break away from him and make yourself autonomous - if you can, if you are not doomed by law or religion (e.g., in a marriage until death separates you).

It can be seen that the very best companionship exists where there is consent with common goals. In such a state P_1 would achieve 94%, and P_2 50% if he, P_2, the weak partner provides the consent (2b1). If the strong partner establishes a conciliatory togetherness, he would make 83%, whereas P_2 would jump up to 95% (2b2). The help of a strong partner for a weak one can be tremendous. But P_1, being basically hostile (taking $S_{12} > 0$) and the stronger part in the game, has definitely no interest in lifting his weak partner above himself. Therefore P_1 will remain in a hostile disposition ($S_{12} > 0$), and the weak partner has to give in ($S_{21} < 0$). *C'est la vie.*

It can easily be experienced that if the weak partner increases his willpower in a conflicting situation in trying to be even with the strong one, the strong one in turn would increase his willpower as well. The result in such tit for tat interplay would result in dynamic instability, in other words: row, clash, destruction, and massacre.

The structure of the joined relationship, Figure IV-3, is extremely rudimentary. A more sophisticated structure with self-awareness (feedbacks R_1 and R_2) and attitude-interrelation (S_{12} and S_{21}) is depicted with Figure IV-4.

The main difference between the two structures Figure IV-3 and Figure IV-4 is that self-awareness and attitude interaction in Figure IV-4 increase tremendously the danger of instability compared to the strongly militaristic simply forward-acting parallel-structure of Figure IV-3. Generally: the more social interaction and the more feedback channels there are and the more intense they operate, the closer one lives at the edge of instability, i.e., on the verge of a quarrel and its final consequence - a war of mutual destruction.

All these situations we considered herein can happen within a democratic structure. Therefore, Sir Winston Churchill was right when he said that democracy is a bad type of government - but still the best we have.

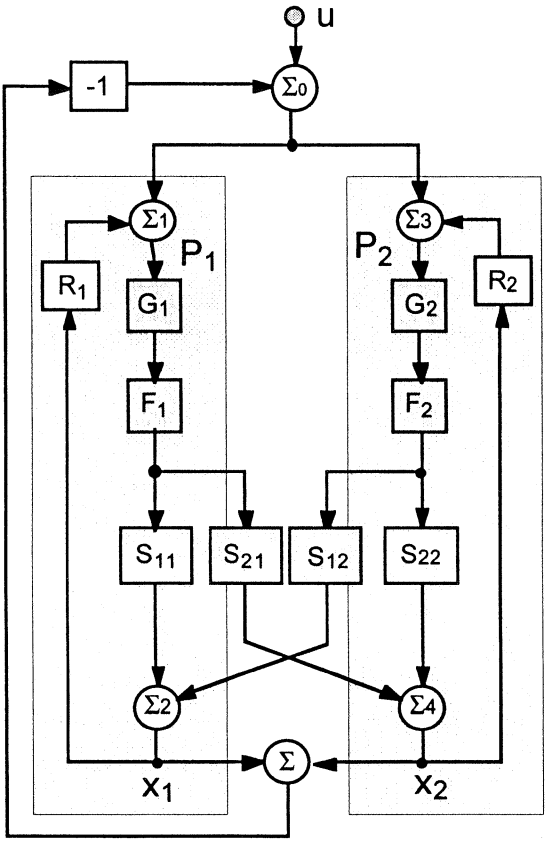


Figure IV-4: Joined relationship of P_1 and P_2 with self-awareness and attitude interaction; no individual goals; but a common goal.

V. Con mala persona, el remedio: Mucho tierra en media

Introduction

The Spanish proverb, taken as the title of this chapter: *The remedy to handle a malicious person: much land in between,* is as old as Methuselah. Numerous proverbs and sayings in cultured languages point out that being reticent in communicating and refraining from expressing one's own opinion is advantageous, prevents embarrassment and avoids conflicts. An even more succinct adage is: *En boca cerrada no entra mosca;* No fly enters a closed mouth.

The social-psychological implication is that the person who either retains information, or the person who avoids receiving conflict related information, gains for his own welfare, physio-psychologically for his own self-realization. The model in this chapter verifies that the further apart in time that communication occurs, the greater is the self-realization of each partner, or each party.

There are two hypothetical modes of interaction established through which information can become transferred between people: the unconscious and the conscious. Within both of these two modes, there is *the time delay of the transfer* and the reduction of *the amount of transferred information* that forms a favorable product in their accumulated effect.

The physical-mathematical model illustrates that the longer the information in an interactive social system is delayed, the more willpower can be manifested by each partner for his own interest and, as a consequence, the higher is his self-realization. In the old days, when the saying got started, *delay-time* and *space* were directly related to each other. Today, as there is immediate information transfer via electronic media and satellites, it is predominantly time that can serve to delay the exchange of information.

We consider three modes of information exchange:

α) the *attitude* people have toward each other as unconscious information exchange. This exchange happens via a hypothetical field, the collective unconscious. The unconsciously transmitted attitude was the central interest in former chapters.

β) a *conscious* information exchange in the form of *talking* or any other means of the media. They also come as a bilateral information motive.

γ) The *combined* information exchange, unconscious and conscious. If it is assumed that the collective unconscious cannot be avoided, in other words, that it is always present, the pure conscious exchange can be considered as rather a voluntary one.

There are still the two basic patterns of interaction to be investigated: the consentient (+ -)- and the hostile (+ +)-behavior in regard of attitude.

As we deal with two constituents that form a dualism, the two parameters of interest are: first the *willpower* the two partners can exert within the homeostatic area, and second, the final *goal attainments* they can achieve. The focus-parameter, indeed, is the time delay of information exchange within the homeostatic realm.

As a result of these two patterns, the consentient and hostile one, the three mentioned information exchanges, α), β), and γ), the model will reveal roughly the following:

In *consentient* relationships the willpower can be considerably higher in unconscious interaction than in conscious. This might mean that two persons in a consentient relation have a higher self-realization if they do not talk. In talking the potential of self-realization becomes reduced. See later further down, Figure V-2a.

In *hostile* relationships the willpower is somewhat higher in conscious compared to unconscious interrelation. See further down, Figure V-2b.

If both partners in the system slow down their emotional reaction or if they are inherently slower, the relations of the power-situation between (+ +) and (+ -) remain the same, but the magnitude of their power become reduced, see Figure V-3.

In *consentient* relationships the power is higher with unconscious communication alone compared to a compounded relation, i.e., with conscious and unconscious interactions together, see Figure V-4.

The highest *self-realization* can be obtained in *consentient* togetherness and with conscious and unconscious interaction simultaneously. Unconscious relationships alone give somehow less self-realization. And self-realization is further reduced in autonomy, i.e., without any communication; see Figure V-5.

Mutual damage occurs in hostility, be this in unconscious or conscious interrelation. Hostility in combination with unconscious and conscious relation simultaneously runs beyond the stability limits - the system disintegrates with the applied parameters.

Help (or support) and harm (or damage) are *compared* with the self-realization when there is no communication at all, i.e., when the partners are in an autonomous, i.e., in a non-interrelated state. Then it can be said that consent adds *some* self-realization to, and hostility subtracts *much* self-realization from the self-realization in the autonomous state.

As a general statement, consent is always advantageous, i.e., it increases self-realization; and hostility is always adverse, disadvantageous, i.e., it reduces self-realization. This statement is not very new in our context. What is important however is that it shows up again and again.

The reason that hostility in interaction between people is so common and obviously much more attractive than consentient behavior, is verified by the model. It illustrates that in a hostile relationship and *immediate* action the willpower that can be exerted by the partners is twice the willpower in consent. In other words, hostile action renders the feeling of being potent. Therefore it is a law of nature that power hungry people are spontaneously hostile. And, indeed, they always are. The immediate outbursts of violence, of fights, and of wars, attracts much more public attention than benevolence, mercifulness, consent and charity. How explosively hostility occurs in daily life can best be observed on the highway when emotional interaction takes place between drivers.

Definition of Hostility and Consent

For the reader's comfort, we repeat once more: a *consentient* dualism is defined by the fact that one partner in a relationship is the *altruist*. He is the one who provides the lenient interaction. The other partner is the *egoist*. The egoist is forward-oriented by being potentially aggressive. The altruist provides for a negative feed-cross information loop between the partners, which is favorable for the relationship concerning self-realization. Consent sustains self-realization. It seems also to be a natural law that only one of two partners shall be consentient. If both partners give way to the other, the outcome is negative, because mutual submission is not productive. One partner has to lead, *has to be the egoist*, the other then can act in concert, *the altruist*. This fact is extensively explained in *Volume I*.

In a *hostile* dualism both partners are potentially aggressive, and they act in this regard. They are bound together in a positive feed-cross loop, which does not favor each other's self-realization. Positive feed-cross among partners defies and opposes their self-realization. For detailed description of consent and hostility, we refer to Volume I.

The Model

Figure V-1 illustrates the dualism, the system that is composed of two partners, P_1 and P_2. Again, for the detailed description of the mathematical model that serves as an analogy for a social person,

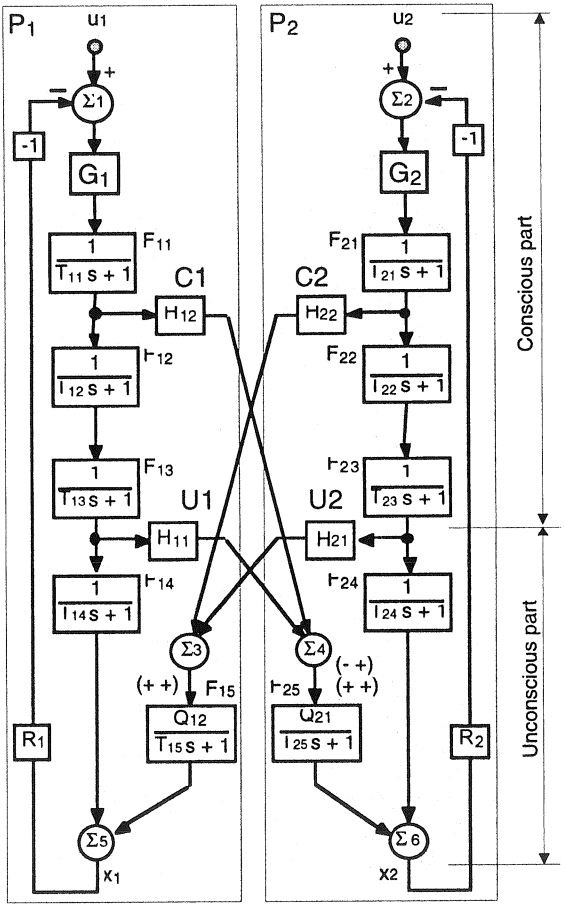


Figure V-1: Model of the social dualism with two levels of bilateral information exchange.

Captions to Figure V-1:

P_1, P_2: Partners P_1 and P_2 of the dualism;
C1, C2: Conscious level of information exchange;
U1, U2: Unconscious level of information exchange;
u_1, u_2: The partner's goals, identical to ultimate self-realizations;
G_1, G_2: The willpowers for self-realization;
F_{ik} (i = 1,2; k = 1,2,3,4): Delay of partner's own internal emotional information transfer;
T_{ik}, T_{2k}, i = 1,2; k = 1, 2, 3, 4: Time constants of F_{ik};
T_{15}, T_{25}: Time delay of mutual information transfer;
H_{11}, H_{21}: Magnitude of mutual unconscious information transfer factors;
H_{12}, H_{22}: Magnitude of mutual conscious information transfer factors;
Q_{11}, Q_{21}: Additional factors of mutual information exchange for setting the facts of hostility and consent;
x_1, x_2: Moment to moment goal attainment, $x_1(t)$, $x_2(t)$;
R_1, R_2: Degree of evaluation of goal attainment (awareness of the own success);
$-R_1x_1$, $-R_2x_2$: Feedback signals for the determination of goal proximity, R_1 and R_2 will be set to 1 throughout the investigation, i.e., the awareness of the partners is normal, is healthy.

the reader is referred to Volume I. The individual's goal is his self-realization. This goal is u_1 for the partner P_1, and u_2 for the Partner P_2. Self-realization is the *conditio sine qua non* to exist. The individuals have a willpower G_1, and G_2 respectively, to strive toward their goal. And they have a delay of behavior, expressed as $[(T_{ik}s+1)^{-4}$, (i = 1, 2; k = 1, 2, 3, 4)]. They have unconscious (U1 and U2), and conscious (C1 and C2) interaction. The mutual interactions are delayed by two transfer functions (F_{15} and F_{25}) that are composed of the transfer factors Q_{12} and Q_{21} as magnitudes, and the time constants T_{15} and T_{25} for denoting the transfer delay.

It must be mentioned that the acceptance of the continuously self-controlling loop, used as the model for the symbolization of one

partner, is a precognitum in order to agree with the psychosocial interpretations of human behavior used herein. We know by now that such a loop is our building block of life.

Figure V-1 shows - as our hypothesis - two separated levels of interactive communication between the two partners.

Level U1 and U2 indicate the unconscious level, and level C1 and C2 means to be the conscious level. It is attempted to interpret the model's outcome from the standpoint of these two levels:

I. Interaction via the unconscious is meant as interaction as irrational, unwillingly generated, as archetypical behavior. This interaction is called *attitude.* People express their opinion toward the partner unconsciously. Having an attitude toward other beings is considered as being inevitable, generated in the unconscious and acting unintentionally. Attitude is irrational.

II. Interaction in the realm of the consciousness, i.e., planned, willingly enforced; in other words, this interaction is rational.

Each one of these levels includes both, consentient and hostile relationships. It has to be emphasized that splitting these two levels into two different types of physio-psychological behavior is a simplification of real facts, but the simplification helps to build a model and enables the calculations to be performed with the model. The model renders basic, behavioral results. The *dualism* is structurally simple but functionally complex.

Level C1 with C2, the conscious level of information exchange, might be seen as part of the brain that belongs to the neo-cortex, as the recipient of the awareness of the momentary self-realization $[x_1(t), x_2(t)]$. This awareness is produced by the feedback $[-R_1x_1, -R_2x_2]$, and the resulting consecutive order to be executed, i.e., by G_1 and G_2. The executed order always reaches for further action that is needed to come closer to the desired self-realizations of u_1 and u_2. We have continuous action within a loop.

It is important to investigate combinations of the two levels, because the assumption must be made that there is always unconscious together with conscious interaction. There is always irrational with rational behavior simultaneously. It is assumed that there is no such thing as a merely conscious communication. Unconscious interaction cannot be avoided.

One also has to be aware that social situations are not merely linear 'cause-effect-cause' operations, but rather multifaceted 'cause-effect-cause' labyrinthine entanglements. Such dynamic involvements are initially not transparent, but require cumbersome, detailed analysis of entangled networks. This chapter seems therefore to be dragged out somehow for this purpose.

The Procedure of the Investigation

Every communication needs time because information is bound to matter that functions. In order to move information, matter has to be accelerated, moved and decelerated. All such reactions need time. Therefore, each action is time-functional and has to be described time-functionally. This circumstance is of eminent importance for investigating social systems. Process investigations cannot be handled statistically or in a series of begin-to-end formation alone. All life in the world is continuous and bound to time - and to looping, to closed circles.

We know by now that there are mainly two features that have to be considered when a time-functional system is to be investigated.

a) The domain of stability, the homeostasis. This is the domain within which a system is able to function properly, i.e., to behave in a goal oriented manner. A disturbed system - every living system is continuously disturbed by its environment - has to have the ability to constantly search for its goal in spite of disturbances. If disturbances become too great, or if the being, or the system of beings, cannot handle the amount and magnitudes of disturbances,

the system becomes unstable and loses the ability to strive toward self-realization. The feedback signal accounts for the effect of disturbances and reduces their effect.

A social system that has self-control and that is fighting the effect of disturbances always has the potential to become unstable. Instability can occur also due to internal reasons, e.g., if a partner or partners exert too much willpower, or if control via feedback becomes too slow. By means of instable states new structures might be created after overcoming the instability - as history shows. But as our considerations are limited to systems that do not change their structure, the restriction is that the system has to operate within its stable realm. Thus, the stability limit is the borderline for the system's existence; and staying inside the limits that surround the area ensures the capability of acting properly.

b) The final goal attainment is that what a system eventually attains after a sufficient time has elapsed within a stable environment and then comes to its desired end-position. The final goal attainment is a system's ultimate value. In our case of linear differential equations that describe time behavior, the final goal is attained sufficiently after about, say, 50 times the time of the delay time of the individual's action, or after about 20 times the delay time of the dualism. There is no practical reason to wait any longer. (Due to linearity of the applied differential equations, time has to be given an infinite length for reaching the end state, i.e., the Laplace-operator s is put to zero in order to find the final goal attainment.)

The two patterns of communication - unconscious and conscious - are, firstly, considered separately, i.e., we look first at unconscious communication only, and then at conscious communication. In a second step, a combination of unconscious and conscious interactions is investigated.

It is obvious that in social systems the number of parameters and their magnitudes is tremendous. This fact already appears by handling relative simple models, as this is the case of the present

one. The larger the complexity of a system, the more severely parameters have to be restricted in the number and their different magnitudes in order to remain within a perceivable frame of comprehension.

We know that the model Figure V-1 is hypothetical. Each partner is represented simply as a closed loop in a macro-view. Any close look into nature reveals that the closed, self-controlling loop is the building block of self-sustained life. There are innumerable closed loops in the human body for its control, and as well as in any living being. And very many of such loops are interrelated with each other. Life is intricately complex. The most gigantic loop-matter is the brain!

If in the model Figure V-1 all interactions become cut, each one of the two partners becomes autonomous. But also the more delay in communication that is introduced between them, the closer the two partners approach autonomy in regard to their behavior. - Statements like these are basically self-evident. But the point we want to emphasize here again is that social situations can be mathematically modeled, and their behavior can be numerically calculated.

Referring again to Figure V-1, we consider some detailed explanations as being in order.

Any value of any parameter in the model can be questioned, because in reality social parameters cannot be measured yet and established as evident. As the model has a hypothetical character, it has to be taken and evaluated as such.

α) To begin, T_{14} and T_{24} are kept at zero. There is no unconscious time delay within a partner. It can be assumed that the unconscious action, the attitude, within a partner expresses itself immediately; unconscious information is *just there*. This was done in former chapters of this book and also in Volume I, on both parts without reference there to this fact. In a second step, T_{14} and T_{24}

will be set equal to the other three time constants within each partner loop. The three time constants in the conscious part in their serial arrangement describe the dynamic emotional reaction of the partner. Then, due to the additional constants, T_{14} and T_{24}, the partners are made slower acting because instead of three time delays, there will be four (for P_1: T_{11}, T_{12}, T_{13}, and T_{14}; for P_2: T_{21}, T_{22}, T_{23}, and T_{24}). Our question will be: what is the outcome in the first step (3 time constants per partner), what is it in the second step (4 time constants per partner)?

β) The four parameters H_{ik} (i, k = 1, 2) of the information transfer channels, C and U, are kept equal and 1, or 0 if not used. The final transfer factors of these channels, Q_{12} and Q_{21} are kept at the value 1 as well. Therefore, there is only *one* value of the amount of exchanged information considered. This value is 1. This means that information is transferred as such, without any exaggeration (amplification) or any diminution (reduction) from one partner to the other. One has to be aware that a transfer factor of 1 between individuals is high. (A factor of the amount of 1, and only 1, reduces the number of parameters and makes the model somewhat simpler. We mean that the multiplication of a variable with the factor 1 does not change this variable.)

γ) Another restriction in the investigation is that the two partners have the same willpower with which they strive toward their goals, i.e., G_1 is always equal to G_2, and, as mentioned, both partners have the same overall delays in their actions. Thus, in an autonomous state (no interaction with each other), the two partners are identical.

There are two summing icons, $\Sigma 3$ and $\Sigma 4$, of interactions. The icon $\Sigma 3$ shows the two incoming signals being positive (+ +); the $\Sigma 4$ has minus signs of incoming informations in case of consentient interaction (- +), and it plus signs in case of hostile interaction (+ +). Again, for further explanations regarding consent and hostility, we must refer to Volume I.

δ) The goal attainments are calculated only for partner P_1. These attainments are defined as x_1/u_1. The magnitude u_1 is set to the value +1 (or 100%); and due to the fact that the goals are not compatible - they are self-realizations and do not influence each other - u_2 is set to 0. If x_1/u_1 becomes 1, the attainment would be 100%, $x_1 = u_1$. As the two partners are identical, corresponding values are valid for the partner P_2 by exchanging all the appropriate parameters.

The situation might seem to become confusing. But life is never just one single factor to be looked at; life is always a simultaneous combination of many components and factors. Although our model is frighteningly simple, it is already rather complicated for the capacity of our comprehension.

The Formality

The mathematics is essential for numerical considerations. The solution of the characteristic equation leads to the investigation of the stability; and the ratio between the steady state outcome $x_1(t)$ and the goal u_1 determines the final goal attainment x_1/u_1. These are - as hitherto - our two bothers.

The characters of the autonomous partners P_1 and P_2, i.e., their characteristic equation, are given with equations (V-1):

$$\text{The characteristic equation of } P_1: \quad 1+G_1F_{11}F_{12}F_{13}F_{14}R_1=0$$
$$\text{The characteristic equation of } P_2: \quad 1+G_2F_{21}F_{22}F_{23}F_{24}R_2=0. \qquad (V-1)$$

The characteristic equation of Figure V-1, i.e., of the dualism, becomes equation (V-2):

$$(1+G_1F_{11}F_{12}F_{13}F_{14}R_1)(1+G_2F_{21}F_{22}F_{23}F_{24}R_2)\mp$$
$$\left[G_1F_{11}R_1(H_{12}+F_{12}F_{13}H_{11})F_{25}\right]\left[G_2F_{21}R_2(H_{22}+F_{22}F_{23}H_{21})F_{15}\right]=0 \quad (V-2)$$

where

$$F_{ik} = \frac{1}{T_{ik}s+1}\ (i=1,2;\ k=1,2,3,4);\ F_{15} = \frac{Q_{12}}{T_{15}s+1};\ F_{25} = \frac{Q_{21}}{T_{25}s+1}$$

For easier inspection, this characteristic equation (V-2) is represented in longhand as equation (V-3):

Equation (V-3) shows the following critically important fact:

The character of the dualism is not simply the sum of the two characters of equations (V-1) side by side, as sociologists and lawyers might assume; it is not just P_1 beside P_2 lined up, for example, and added together. In

$$\begin{aligned}
&1+G_1F_{11}F_{12}F_{13}F_{14}R_1+G_2F_{21}F_{22}F_{23}F_{24}R_2+\\
&(G_1F_{11}F_{12}F_{13}F_{14}R_1)(G_2F_{21}F_{22}F_{23}F_{24}R_2)\mp\\
&(G_1F_{11}R_1)H_{12}F_{25}(G_2F_{21}R_2)H_{22}F_{15}+\\
&(G_1F_{11}R_1)H_{12}F_{25}(G_2F_{21}R_2F_{23}F_{22})H_{21}F_{15}+\\
&(G_1F_{11}R_1F_{13}F_{12})H_{11}F_{25}(G_2F_{21}R_2)H_{22}F_{15}\\
&+(G_1F_{11}R_1F_{13}F_{12})H_{11}F_{25}(G_2F_{21}R_2F_{23}F_{22})H_{21}F_{15}=0 \qquad (V-3)
\end{aligned}$$

the first line in equation (V-3) is the *sum* of the characters of P_1 and P_2; in the second line there are the two individual characters *multiplied* with each other. Thirdly, there are *4 interacting loops* in them each partner is included. These 4 loops, indicated with partner (P_1) and partner (P_2) are:

a) (P_1)*C1*(P_2)*C2,
b) (P_1)*C1*(P_2)*U2,
c) (P_1)*U1*(P_2)*C2,
d) (P_1)*U1*(P_2)*U2.

This is how life operates! And it is not simpler! It is absolutely impossible for a single individual to perceive a dualism of which he is a part. This fact leads to the trivial explanation that it will never be possible to predict the functional behavior of an interaction. Each individual is only a small part of the total. If a third party enters the dualism (e.g., a psychologist providing help), the system becomes tremendously more complex; it becomes a triplex. Although this fact of complexity is obvious in technical multiple control, it is extremely difficult to be accepted in social, political, and everyday circumstances. But that is the way life shows itself: A complexity our brain cannot perceive! And what cannot be perceived has to be calculated - if possible.

These considerations are plain physics of daily life. However, sociologist, psychologist, psychiatrist, and definitely theologians will have difficulty accepting this cosmic verity. We live with congeries of myth, superstition, religious belief, so called common sense and fantasies embedded in our mind. We assume, or pretend, to know and want to predict social occurrences! We just are not able! Words applied in the humanities (especially in religions) have the potential to influence by suggesting that non-existing creatures - up to Supreme Beings - exist. The obsession to find the essential truth through ideas and religious doctrines blinds us to the intricate invariance of the complex physical world. Mythological beings reside in the unconscious part of our brain and not far above the clouds in heaven.

Steady State Results

First we look at the steady situation. The steady state goal attainment for P_1, $x_1(u_1)$, is formulated with equation (V-4).

In (V-4), where there are the (±) signs, the (+)-sign accounts for hostility, the (-)-sign stays for consent.

$$x_1 = \frac{\begin{vmatrix} G_1 & G_2Q_{12}(H_{22}+H_{21}) \\ \pm G_1Q_{21}(H_{12}+H_{11}) & (1+G_2) \end{vmatrix}}{\begin{vmatrix} (1+G_1) & G_2Q_{12}(H_{22}+H_{21}) \\ \pm G_1Q_{21}(H_{12}+H_{11}) & (1+G_2) \end{vmatrix}} u_1 \qquad (V-4)$$

As goal attainments are steady state results, the time dependent transfer functions change to +1 (s = 0); and they disappear as a symbol in the expression (V-4). Equation (V-4) becomes the straight-line formation equation (V-5):

$$x_1 = \frac{G_1(1+G_2) \mp G_1G_2Q_{12}Q_{21}(H_{22}+H_{21})(H_{12}+H_{11})}{(1+G_1)(1+G_2) \mp G_1G_2Q_{12}Q_{21}(H_{22}+H_{21})(H_{12}+H_{11})} u_1. \qquad (V-5)$$

Referring to the (±) signs in this equation: the (-)-sign is now for hostility, the (+)-sign for consent.

For the conscious connections only, i.e., with the connections C1 and C2, the factors H_{11} and H_{21} become 0. For only the unconscious connections U1 and U2, the factors H_{12} and H_{22} have to be set to 0.

In the following, we set all four H-magnitudes to +1, i.e., H_{11}, H_{12}, H_{21} and H_{22} are all +1. Therefore for both, the conscious and the unconscious connections, when considered separately, the steady state results will be the same. - Further restrictions in the coming considerations will be: Q_{12} = +1 for both, hostility and consent; Q_{12} is +1 for hostility (P_1 is the egoist), and Q_{21} is -1 for consent (P_2 is taken as the altruist). Thus, with H_{ik} (i, k = 1,2) all limited to +1, x_1 will be as formulae (V-6a) and V-6b) show. Note well: these are steady state results - no dynamics involved!).

For hostility:

$$x_1 = \frac{G_1}{1+G_1+G_2} u_1; \; u_2 = 0; \qquad (V-6a)$$

for consent:

$$x_1 = \frac{(1+2G_2)G_1}{(1+G_1)(1+G_2)+G_1G_2}u_1;\ u_2 = 0. \qquad (V\text{-}6b)$$

With the mentioned symmetry, $G_1 = G_2 = G$, the formulae (V-6) become the simple form (V-7):

Hostility:

$$x_1 = \frac{G}{1+2G}u_1; \qquad (V\text{-}7a)$$

Consent with $Q_{21} = -1$, $Q_{12} = +1$:

$$x_1 = \frac{(1+2G)G}{1+2G+2G^2}u_1. \qquad (V\text{-}7b)$$

It can be noted that the formulae for hostility, (V-6a) and (V-7a), have a simpler structure than the formulae for consent, i.e., (V-6b) and (V-7b). Consentient behavior - so called peace - is all the way through in our investigations more delicate, more complicated, than hostile behavior. We observe that the same holds true in daily life! People who want to have it simple tend to aggressive behavior.

Considering simultaneous interaction, conscious and unconscious, the formulae that go parallel with (V-6) are

(V-8a) for hostility,

$$x_1 = \frac{(1-3G_2)G_1}{1+G_1+G_2-3G_1G_2}u_1,\ u_2 = 0, \qquad (V\text{-}8a)$$

and (V-8b) for consent,

$$x_1 = \frac{(1+5G_2)G_1}{1+G_1+G_2+5G_1G_2}u_1,\ u_2 = 0. \qquad (V-8b)$$

Formula (V-8a) indicates that magnitudes we took for the parameters for calculations further down are too high. The goal attainment x_1 shows poles and highly negative results for even small willpowers G_1 and G_2. Hostile systems can disintegrate easily; they explode. With the same level of parameter values consentient relations (V-8b) are well stable. A point to ponder!

Discussion of Calculated Results

For the discussion to follow it must be kept in mind that each partner is operating toward his own self-realization. This is to say that the two goals u_1 and u_2 are not related to each other, they are therefore not common, not collateral, or not antagonistic, or synergetic. They are independent from each other, i.e., incompatible. Their influence cannot be added. Their *dimensions* are not the same. This fact is indicated already in the formulae (V-6 and V-8). If the two goals were common as one, the two partners would form a partnership of one social unit with an overall feedback connection around both partners after adding the two attainments together, $x_1(t)$ and $x_2(t)$.

For easier comprehension of the different parameters, Figure V-1 is changed to Figure V-1a.

Stability Limits

Systems have the potential to operate properly inside their stability limits. Concerning these limits, a preliminary remark is necessary. The limits of stability depend on many factors, but one of them is *the level* where the signals of interaction leave one partner and the level where the other partner absorbs them. In Figure V-1a the bilateral signals for conscious interaction (C1 and C2) are taken

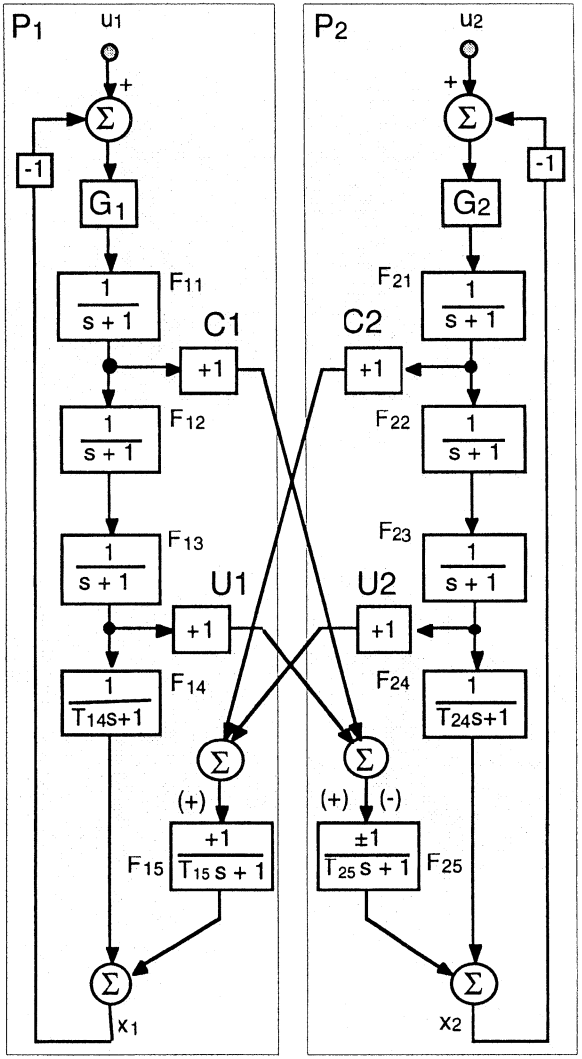


Figure V-1a: The structure of the dualism as it was used for the calculations of Figures V-2 to V-5. In F_{25} the (+) sign stands for hostility, the (-) sign for consent.

between F_{11} - F_{12} and F_{21} - F_{22} respectively. The signals for bilateral unconscious interaction (U1 and U2) are taken between F_{13} - F_{14} and between F_{23} - F_{24}. The signals for conscious interaction could be taken immediately after G_1 and G_2, or between F_{12} - F_{13} and F_{22} - F_{23}. If C1 and C2 are taken just after G_1 and G_2, it is worse for stability than taking C1 and C2 after F_{12} and F_{22}. Basically, it can be said and we will find: When a partner's internal signal comes - pictorially - down after being loaded with the willpowers G_1 or G_2 respectively, then *waiting consciously or/and unconsciously a certain time before acting toward the partner this can help to keep a system in better stability;* e.g., a friendship might be saved, a hostile relationship might avoid killing. In Figure V-1a all signals, C1, C2, U1, and U2 are picked up by the unconscious of the partners; after that, their effect goes into the partners' *upwards* feedback, figuratively, before again comparing with u_1 and u_2, respectively.

Always note that we are in a continuous loop-processing!

Figures V-2a and V2-b show stability limits - the region of existence - of the two different, i.e., separate interactions, in the unconscious U, and in the consciousness C, and for both, consentient (+ -) and hostile (+ +) relationships. The ordinates are the two equal willpowers $G_1 = G_2$. They are plotted versus the also equal communication time delays $T_{15} = T_{25}$. The willpowers grow from zero to maximum 8. $G_1 = G_2 = 8$ is the willpower at the stability limit for an autonomous partner of third order with three equal time constants (i.e., $R_1 = R_2 = 1$ and T_{14} and $T_{24} = 0$). The mathematical proof for this value 8 is given in Volume I. Referring to the title of the essay, the focus is on the region of existence as a function of the time delays $T_{15} = T_{25}$ of the mutual information exchange.

α) Stability limits for *consentient* relationships (+ -), Figure V-2a. Partners are of third order; ($T_{14} = T_{24} = 0$).

The main point to mention is that the more communicative delay

there is, i.e., the larger $T_{15} = T_{25}$ are, the greater the willpowers are allowed to be before the limit of homeostasis (stability) is reached; and, as we will see in Figure V-5, the better is the self-realization of the partners.

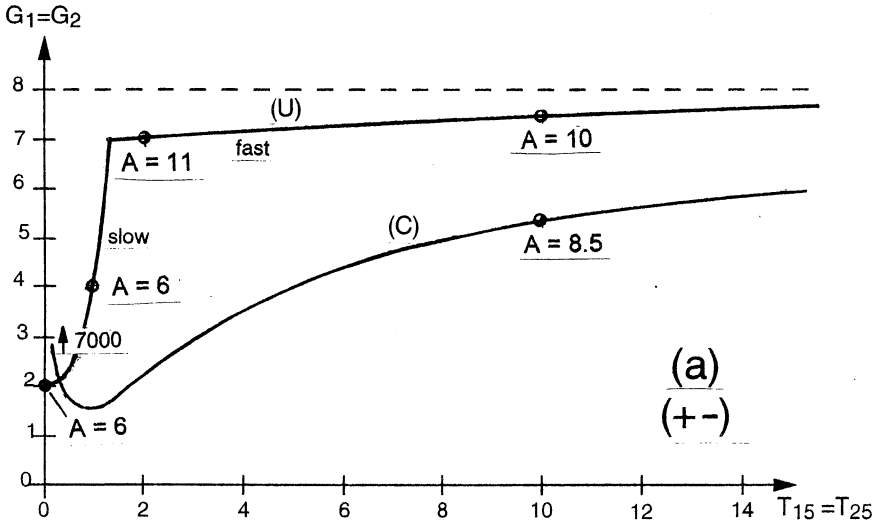


Figure V-2a: Stability limits of unconscious (U) and conscious (C) partnerships of consentient relations (+ -); A = agility. The single partners are of third order, $T_{11} = T_{12} = T_{13} = 1$, $T_{21} = T_{22} = T_{23} = 1$; $T_{14} = T_{24} = 0$. (U & C)(+ -).

As an example for the effect of instability, one might consider an arguing of two married partners: Gentleness and restraint in communication extends the periods of peace! *Unconscious* consent (U) offers higher willpower than *conscious* consent (C). Both of the curves, U and C, tend to reach the autonomous willpower level, that is at $G_1 = G_2 = 8$, if the communication delay becomes very large. When communication happens fast, $T_{15} = T_{25} \sim 2$, unconscious communication U is distinctively advantageous compared to conscious communication C. Fast conscious

communication can ruin the friendship if the powers $G_1 = G_2$ are not modest in their amount. Even in friendship, watch your word! There is the funny joke regarding extended delay of talking: *A diplomat is someone who thinks twice before he says nothing.*

A peculiar point occurs in the U-system at $T_{15} = T_{25} = 1.35$. There is an intersection of two different emotional reactions, a slow one (agility A = 6) and a fast one (A = 11). The partnership oscillates between two behaviors. The system cannot make up its mind - so to speak! The two patterns vacillate; the two partners, P_1 and P_2, are irresolute about the decision of their emotional behavior. This phenomenon is not the same as a technical beating effect where two loops are bound to a coupled system and the loops oscillate with nearly the same frequencies shifting energy back and forth. The two reactions here are very different. Whether such a phenomenon is purely model-dependent or whether it has a social significance, the author cannot know yet.

The consequence of Figure V-2a, curves U and C, results in the following: The longer the individual in a consentient relationship hesitates - within himself (F_{11}, F_{12}, F_{13}) - in giving out partner-related information, the greater his self-realization becomes. This is the situation U. The information flows firstly from consciousness, down to the level U, to the unconscious, before it crosses over to the partner. Then, in addition, the longer the partner waits again for the crossover transfer of information (F_{15} and F_{25} large), the better again the self-realization becomes. This is so, because due to waiting, a higher willpower can be exerted on oneself that, in turn, increases self-realization. The curve (U) allows higher willpower than the curve (C). At $T_{15} = T_{25} = 14$ the curve (U) shows the highest $G_1 = G_2 = 7.6$ - as far as the plots go. For this willpower 7.6 the self-realization is 94%. See the steady state values in Figure V-5.

The unconscious communication pattern is more favorable. This is the consentient attitude without talking or acting. The worst situation is the rational reaction, i.e., talking or acting almost

immediately upon a stimulus (curve C, $T_{15} = T_{25} = 1$). But waiting long enough, i.e., with large $T_{15} = T_{25}$, (which requires self-discipline) the negative effect of a prompt C-reaction can be avoided.

The advice therefore is: let your unconscious work, don't talk at all, just have a *consentient* attitude. It will help both, yourself and your partner. This means, being together and mutually accepting each other offers power for welfare. - In Lynn Andrews' Windhorse Woman, Andrew teaches: *The only true communication is without words. Language is a barrier between us. But we need to talk for many reasons, not necessarily to understand much. Silence is the only true source of communication,* (Andrews, 1989, p.52.)

If there is no interaction time delay at all (i.e., $T_{15} = T_{25} = 0$), the utmost possible willpower to be exerted is 2 for the (U)-case. But $T_{15} = T_{25} = 0$ is not reality. If, nevertheless, it shall happen, then the self-realization is lowest, although surviving is not endangered. The goal attainment is, for G_1 (and G_2) = 2, still high, namely 76% (See Figure V-5). The immediate talking-effect in consentient behavior can be seen as a kind of overshooting the mark in haste. It is always advantageous to give oneself some time, even in being consentient, i.e., $T_{15} = T_{25} > 1$. *Haste makes waste*, not only physically, but as well psychologically and socially.

β) Limits for *hostile* stability relationships (+ +), Figure V-2b. Partners are of third order, ($T_{14} = T_{24} = 0$).

Surprisingly, the conscious hostile situation C allows higher willpower than the unconscious situation U if there is some communicative time delay, $T_{15} = T_{25} > 2$. Waiting in anger builds up conscious willpower for a later, more vigorous attack! But if there is no time delay at all, the will of the C-situation is minimal: $G_1 = G_2 = 1.25$. Acting immediately, without preparation, and vigorously, allows only the lowest willpower for stable continuous behavior, and the self-realization would be about 0.36 or 36% only. Immediate conscious action with higher willpower (G_1 & $G_2 > 1.25$)

is immediate instability, mutual destruction, and perhaps killing.

But does high willpower help for conscious, hostile self-realization, let's say with $T_{15} = T_{25} = 10$, $G_1 = G_2 = 7.9$? As the self-realization (in parity of the partners' willpower, what is assumed herein!) never exceeds 50% of the expected goals, the effect of rational delayed reaction (C-level) compared to unconscious hostility (U-level) does not help much in improving self-realization. See Figure V-5. Hostility results in self-damage - and, what is indeed more important: it is damaging the partner. Hostility is to hurt - both sides.

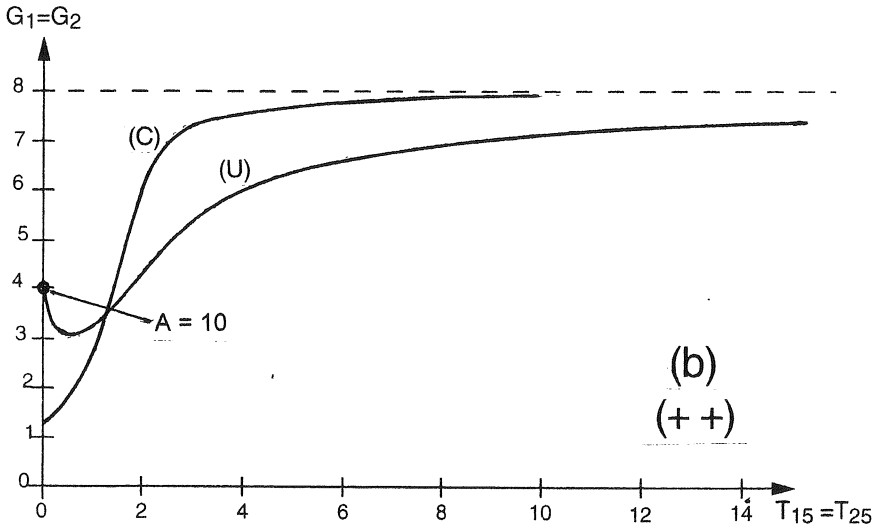


Figure V-2b: Stability limits of unconscious (U) and conscious (C) partnerships of hostile relations; (+ +); A = agility.
The single partners are of third order, $T_{11} = T_{12} = T_{13} = 1$, $T_{21} = T_{22} = T_{23} = 1$; $T_{14} = T_{24} = 0$. (U & C)(+ +).

For all four curves, Figure V-2a and V-2b, i.e., for consent and hostility, the fact is that the more communication delay there is, the

better is the self-realization in both relationships. This fact supports or proves the title of the essay. But it is easy to see now that social situations are in general more complex and more involved if they are investigated in detail - rather than as linguistic proverbs or as common sense can explain. For example the wording of a proverb: *Concordia parvae res crescunt, discordia maximae dilabuntur,* (Sallust, 86-35 b. Ch.): Through concord small things grow, through discord the mightiest things decay. In addition, our model is still rather simple.

At this point it shall be repeated that in regard to self-realization, consent results in mutual help and hostility provides mutual damage. See Figure V-5. Even waiting for a long time (hostile people generally do not wait to attack), i.e., large $T_{15} = T_{25}$, does not help much in hostility; the mutual damage is there. And the aggressor lives in an ongoing intention or rage to damage further.

The model also shows at $T_{15} = T_{25} = 0$ and with *unconscious* communication for both of the two U-situations that in hostility the speed is almost twice as high as in consent. At the stability limit in consent, the emotional agility is indicated with A = 6; in hostility it is A = 10. The willpower for self-realization is 4 in hostility compared to 2 in consent. But, as said, willpower, especially when it is large, in hostility it means partner-damage and self-damage.

Immediately erupting hostility offers twice the will and has about twice the speed of reacting than consentient behavior. A hostile attitude renders the feeling of being willful and fast, and this is the very fact in public life: it is even fascinating. Therefore, hostility is much more attractive than consent. This is an important Law of Nature. Competition in sports measure power, agility, and speed, never gentleness and leisure.

γ) Individuals of fourth order, Figure V-3.

If in Figure V-1 or V-1a the two partners are made slower by adding $T_{14} = T_{24} = 1$ in their unconscious realm, Figure V-3 shows

a similar outcome as Figure V-2 does, but the willpowers have only about half the values. The reason for this reduction is: for the autonomous partner with 4 equal time constants in a series, the maximum willpower for stable self-realization is only 4, whereas with 3 equal time constants it is, as mentioned, 8.

In an individual's structure of self-control for self-realization, it is a *factum* that the more time delays the internal information has to pass through the being, in our model from the conscious level C down to the unconscious level U, less high the permissible willpower can be for remaining in a stable operation. This also is a Law of Nature and explains why speed is of such interest for the daily media and indeed for survival. Slow, lethargic people have a handicap concerning survival compared to quick individuals.

δ) Combined communication, (U & C)-interactions, Figure V-4.

This is rather the dominant life situation: the two communicative channels U and C in simultaneous influence. Figure V-4 depicts only curves for the consentient case, (+ -). In the hostile relationship (+ +) there is no stability limit that can be held. The limits are astatic. The goal variables x_1 and x_2 swerve away from their path toward the goals u_1 and u_2 once the stability limit is reached. Therefore, for the (+ +)-situation there is no figure to be plotted. As togetherness, such partnerships go to pieces. Conscious and unconscious hostility in a simultaneous action is - within our parameters - explosive, destructive

For consent, (+ -), two forms are plotted, the unconscious (U) and the combined, unconscious and consciousness (U & C). Their comparison is of interest. The (U)-curve for unconscious communication is taken from Figure V-2a. Combining (C) with (U), Figure V-4, is about the same as (C) without (U), Figure V-2a. The consciousness is very domineering over the unconscious. Or, perhaps rather: Too much density in communicating, (U & C), even for consentient communication, is detrimental for the individual's willpower. Consent requires modesty in both, in willpower and in

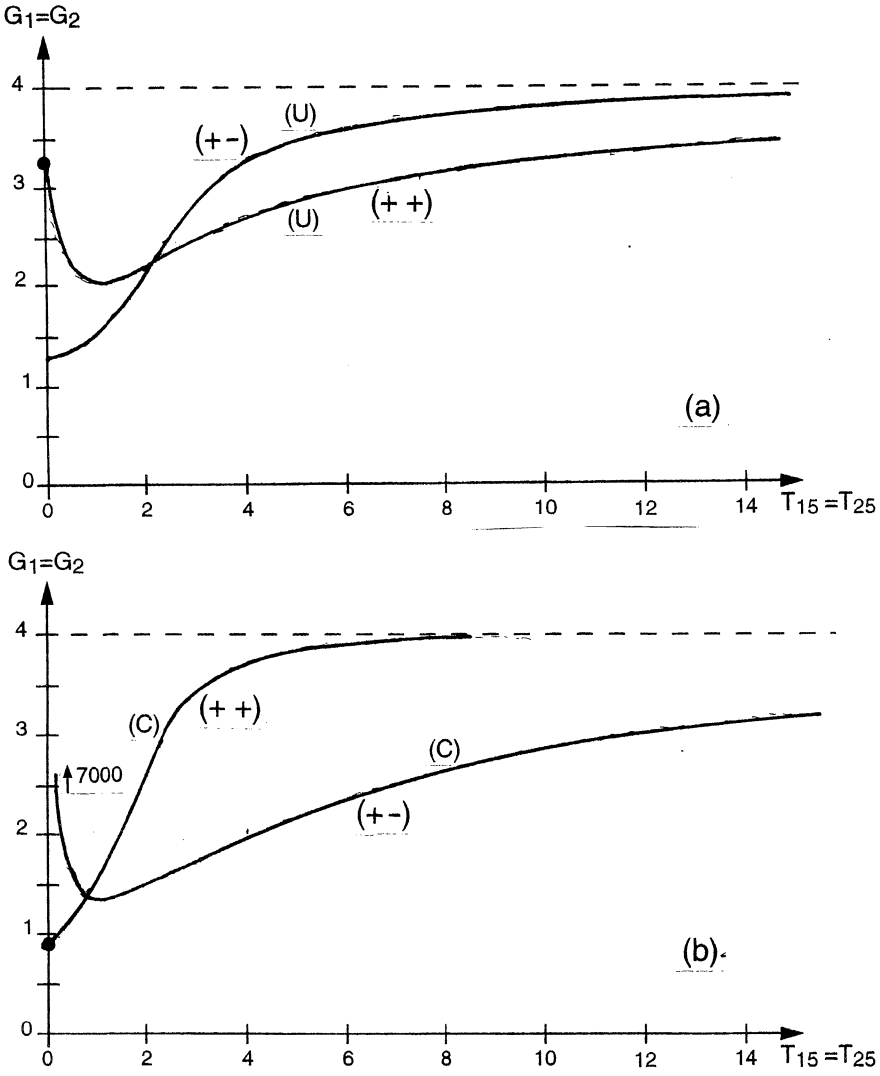


Figure V-3: Stability limits of unconscious (U) - and conscious (C)-partnerships for both, consentient (+ -) and hostile (+ +) relations. Single partners of fourth order: $T_{14} = T_{24} = 1$.
For 3a) (U)(+ -); (U)(+ +); for 3b) (C)(+ -); (C)(+ +).

communicating.

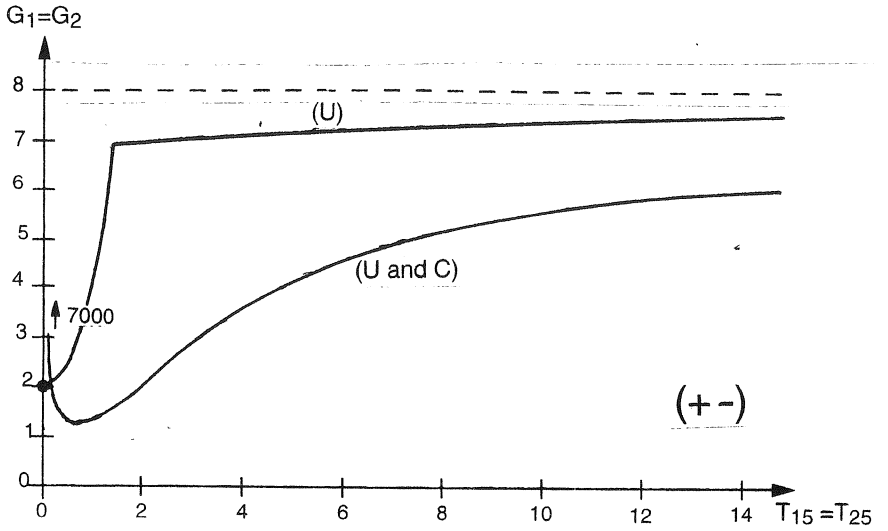


Figure V-4: Stability limits of unconscious (U)- and of the compound of unconscious (U)- and conscious (U)-communicative partnerships for consentient relations (+ -).
The single partners are of third order, $T_{11} = T_{12} = T_{13} = 1$, $T_{21} = T_{22} = T_{23} = 1$; $T_{14} = T_{24} = 0$.

If consentient relationships can be viewed as being in danger in some regard, as here with too much communication, then hostile interrelations are catastrophic. Hostile systems fall apart in divorce, in fights and wars and killing, i.e., in astatic instability. Why then, one might ask, does nature favor aggression? We think it is nature's clever intention: the shorter life is (after reproduction is assured), the faster new generations appear and thus, the higher is nature's chance to evolve new features for adaptation to new circumstances. And what is not shown in this chapter: in wars the stronger - or more intelligent - individuals survive, the weaker will be killed.

ε) Final attainments, Figure V-5.

This figure illustrates in a dimensionless form ($u_1 = 1$) and as end-states the goal attainments x_1/u_1 for the partner P_1 ($u_1 = 1$, $u_2 = 0$). Goal attainments x_1/u_1 are shown for consent and hostility. There is no consideration of stability limits; therefore the willpowers, $G_1 = G_2$, are not limited.

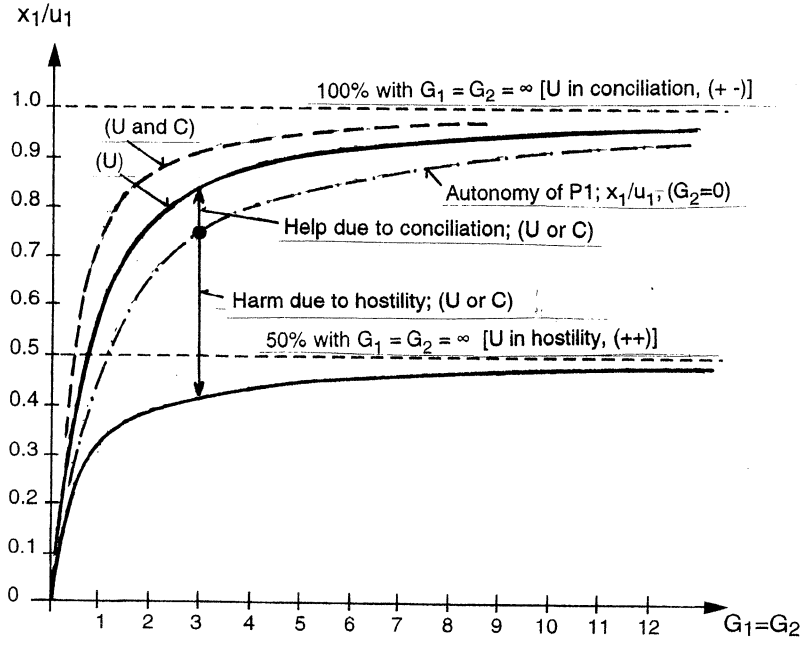


Figure V-5: Final goal attainments of P_1 (steady states) for the systems of Figures V-2, V-3, and V-4; $u_1 = 1$, $u_2 = 0$.

If there is no willpower to attain one's goal (i.e., if $G_1 = G_2 = 0$), then there is no attainment in either case. The attainment is zero. With increasing willpower the attainment x_1/u_1 increases toward a maximum for both, for consent and hostility. For consent the

maximum is 1 (i.e., 100%), for hostility the maximum is 0.5 only (i.e., 50%).

The dot-dashed line is for $G_2 = 0$. It shows the attainment for the autonomous P_1. Compared with the curve of the autonomous P_1, consent of P_1 with P_2 in togetherness indicates help [curve for U-communication alone and for (U & C)-communication]. Conscious communication adds help to the unconscious help. Hostility on the other hand indicates harm (there is one and the same curve for U and for C).

For easier reading, there is one vertical line drawn (at $G_1 = G_2 = 3$). It indicates help and harm with respect to autonomy. It can be seen that consent results in help. The help, however, is small. Hostility results in huge damage. The larger $G_1 = G_2$ are, less is conciliatory help because partners with a large $G_1 = G_2$ do not need help; and the greater is the hostile damage. Pleasure in generating damage, exercising vandalism, overthrowing hated institutions, and massacring enemies, are the aggressors´ pleasure and game and that at high willpowers.

For combinations, (U and C)-systems in *hostility*, the steady state values x_1/u_1 become minus infinity for $(G_1 = G_2) > +1$ with $u_1 = 1$, $u_2 = 0$. Therefore, such data cannot be plotted.

Conclusions

If you, P_1, have to deal with an opponent, P_2, who is as strong and as fast as you are: be consentient for your own sake. It is to your and your partner's advantage. Never burst out arguing. Take your time to find a soothing communication. This presupposes that your opponent accepts consent. If he is not willing to comply and if he prefers to damage you, be hostile toward him too and fight for becoming equal, - or much better separate yourself from him. There are no other ways in life. F. Schiller said in Maria Stuart: *Es kann der Frömmste nicht in Frieden bleiben, wenn es dem bösen Nachbarn nicht gefällt:* Even the most pious person cannot live in

peace if the malicious neighbor doesn't want so.

If you suffer from the partner's aggressive refusal of any agreement and you are bound to him - poor-you! You will die, better: you will be forced to die!

Similar proverbs to reflect the title are:

Vir sapit qui pauca loquitur - That man is wise who talks little - or late.
Le plus sage se tais - The wise man keeps silent.
Si tacuisses, philosophus mansisses - If you had been silent, you would have remained a philosopher.
Love your neighbor, but don't tear the hedge down, (Swiss proverb).

From the biological standpoint, some important remarks are:

a) If in Figure V-1 all time constants change with the same factor, the wills and the formation of the stability limits stay the same; only the reaction speed changes. That is to say that fast as well as slowly acting dualisms of equal dynamic constellations have equal willpowers available for their survival: *humming birds* on one side, and *sloths* on the other side.

b) In Figure V-5, the steady state results are the same for the (U)-situation alone and for the (C)-situation alone. But by adding the communication channels U and C to act simultaneously, the two attainments cannot be just added as attainment of U *plus* the attainment of C. In functional interrelations, even if all elements are linear, arithmetic laws are no longer valid in loop configurations.

c) Communication is an increase of entropy: (U) and (C) together reduce willpowers compared to (U) alone, as Figure V-4 demonstrates.

d) As nature favors power and speed, there is no dialogue for

establishing peace, neither in Afghanistan, nor in Iraq, nor in Israel-Palestine, nor in Northern Ireland, nor anywhere on earth - if the opposing party does not want it. And in 99% of all cases, opposing parties stay hostile despite tremendous costs and disadvantages. North Korea will build its atomic weapons. Iran will come in too. They have the same right as the USA, as India, as Russia, as Pakistan, as Japan, as China, as Israel, as any other country that has the capability and the necessary money.

e) The world should begin to think about the fact that nature does not care for the survival of any individual being. Nature produces with the probability *in mind* that one (the stronger) will survive and reproduce, spreading out its millions and billions of seeds and semen. Nature's doing is similar to our lottery system. Out of 10,000,000 sold tickets (seeds) one or none will win the 1 million dollars; and 9,999,999, or all 10,000,000, will loose, will die away to biological material. If none wins in one draw, try again and again, million times! This is - we think - what nature does. Once we exist, we have to take care of ourselves. Nature does not care about the individual; neither does any God.

What is best for high goal attainment?

Individual internal flexibility (Figure V-2 shows greater willpower than Figure V-3), consentient attitude, and delay of information exchange (see Figures V-2 and V-5).

VI. Faith, the Symbol of God Providing Help

Foreword

This chapter focuses on an investigation of likely outcomes of what is herein considered to be an innate characteristic of humans, namely, a belief that a supernatural power exists beyond the realm of the known world. It would seem that from the earliest days of human life, a given was the omnipresence of a mighty god or several gods existing on earth or in the outer world. It is assumed such a belief is based on a need to accept events that are inexplicable for most people in terms of physical-biological functioning. This need holds true both for primitive humans wherein information on physical functioning was limited and for modern society wherein scientists have established much regarding the natural laws that determine the behavior of matter. The faithful, whether as individuals, tribes or members of an established religion, have created various supernatural symbols usually in the form of a single god or many gods as a way of understanding and accepting their lot. For example, in early times, a god, when angry, could show displeasure with human behavior through a hurricane, or when delighted the god could show pleasure through an abundant supply of food. In modern times, a god not satisfied with a member of his flock could be thought responsible for the untimely death of a loved one, or a caring savior could be thought responsible for a miraculous recovery of someone not expected to live.

Our concern with the search of fundamental patterns of behavior, of natural laws, assumes that archaic patterns must lie in the unconscious of human beings. They must have been formed long before the homo sapiens appeared, because such laws were and still seem to be a necessity for survival: reaching into the mystery, into the unknown, and substantiating archaic symbols as existing around us or in the outer world.

In the brain these patterns must be physical matter that functions

on the basis of physical-biological laws. Over millions of years with the development of the cortex and neo-cortex such archaic patterns were transfigured in innumerable branches, into cultural, religious, social, and political fields.

The person of today who is born within a particular culture or religion has neither the retrospective farsightedness to such original laws, nor the urge to do so. The contemporary being is concerned with a specific religion, a specific culture, or a specific philosophy he is confronted with. At best, he writes a survey of the historical development in a particular era - an era still long after the differentiation of the fundamental laws once took place. The different faculties at universities are an excellent demonstration of this contemporary scientific multiformity. The legions of different sections of science have already split within different races, cultures, and religions. To think back to the very origin of humans on earth and their behavior leads to the assumption that comportment of humans were at that time of unconscious kind of somehow automatically performed actions - like intelligent robots in modern technology. They were programmed - and we still are the same - to a great extent: unconsciously programmed.

We know that such intelligent machines, considered as modern smart devices, are all devices that functions on the basis of natural laws. There is no miracle in them. Physical functioning is the very basic way our world functions. With such a concept of physical functioning we try herein to find some way to the depth of conscious-unconscious behavior.

Our limited brain cannot comprehend the enormous complexity nature developed in its path of evolution. This brain even has extreme difficulties understanding purely natural principles. The physical elements to build complexities are indeed relatively simple. The elements of the DNA structures for example, show nature's modular construction system. But even minor combinations and variations of simple elements are immediately so obscure that for our comprehension they are fatally incapable to be discerned. An

easy way out of this dilemma led in history to the formation of symbols with which packages of complex structures were composed and named, reducing in this way the immeasurability into intelligible patterns. Every language is full of such symbolic packages. The reason that we can live with symbols is because nature provides us with this capability.

We know that life is matter that functions. Each element of matter that functions carries some portion of information with it. Thus, the basic constituents of life are chains of composite structures of such elements. In order to form functional life of complex operations, these chains must form feedback-loops in order to have self-control. They must know at any instant what the immediate result is of their action. Each functioning complexity must have its purpose, its goal, and each complexity is continuously striving toward the goal whilst it has interaction with other circular loops of which each one has in turn its own goal. Only a loop that is closed in itself, knows what it does; it has continuous feedback information over time within itself; it has its own *consciousness*. Each self-controlling loop has – in reality – consciousness.

This chapter is a study of two elementary interacting loops forming an archaic behavior. Both loops are housed in one human being. One loop, the consciousness sends the power of faith in the unconscious loop. This unconscious loop houses the picture of a supernatural being. The outcome of the two-loops' interaction with each other is of our interest. One such loop is the conscious believer; the other loop is the god-symbol in the believer's unconscious.

Introduction

It has been established by psychologists that there are basically two different beings – two different worlds in us – a consciousness and unconsciousness. The urge to create a supreme being must lie in the unconscious. This symbol then

becomes projected into a heavenly sphere outside the beings, so that it can be justified to exist by the consciousness. As there has existed and still exist innumerable different gods, the symbol god must lie inside the being's cranium. The symbol is stored individually in every believer's head. Although worshipping to the external god is mostly done in groups, in congregations, the events are intimately personal, because every believer carries his own image of a deity. Worshipping in groups is a theme of mass psychology, of the *collective unconscious* (C.G.Jung). The herd instinct manifests itself by means of this collective unconscious. Inside a herd the being feels safe.

Symbolically, these two entities in our head, the consciousness and the unconscious, are going to be named the two domains W_1 and W_2. The two domains have an information exchange with each other. And, in addition, but not important for our investigation, both are interconnected with our remaining physical body, with muscles, bones, organs, nerves, all flooded and nourished with blood.

The attempt of this essay is to suppose a structure, including W_1 and W_2, and their interaction, forming a model to explain faith and its effect. W_1 will symbolize the consciousness, whereas W_2 contains the image of god. Faith can manifest itself in W_1 that communicates with the internal god in W_2 in the form of prayer.

The purpose of prayer is asking God (or in Christianity his Son and his father and the virgin Mary) for mercy, grace, favor, or help for oneself, but also for harm, obstruction, brutality, and condemnation of others. Even if in a prayer, when God is asked to help the prayer's neighbor, the believer does it firstly for his own welfare: to feel his faith in God and to be heard, and perhaps most of all, to remain assured of being saved by him after the earthly death for the spiritual eternity (assuming that there exists something of this kind!).

Whether there is a telepathic connection among human beings, so

that one person's prayer for help or condemnation of another person becomes realized, is not matter of this investigation. It might be assumed that such a field of influence transfer exists. We do not know yet. This present investigation, however, is concerned only with the single individual and his relationship with his faith in his god-picture embedded in himself.

The interrelation between the consciousness and the god-symbol in the unconscious expresses itself through an information exchange, called faith. The bond between the two parts of the brain, W_1 and W_2, is expressed herein with the affinity symbol $S_{12}S_{21}$: Figure VI-1. The interrelation between W_1 and W_2 is bilateral. On one path, via S_{21}, information is transferred from the consciousness W_1 to the unconscious W_2; and on the other path, via S_{12}, information is transmitted from the unconscious W_2 into the consciousness W_1. The multiplication of the two transfer factors S_{21} and S_{12} is called *affinity*. The magnitude of affinity, of $S_{12}S_{21}$, will be the depth of faith.

The question posed now is: What is the benefit for the believer when he believes in an imaginary divinity? What can the believer expect through faith concerning an *increase* of his welfare? The general denotation of such an increase of welfare is help, denoted in the following as Δh?

We shall find a measure of magnitude for faith so that its effect on the welfare of the faithful can numerically become determined. Such numerical data is, indeed, just to be understood in a qualitative sense. Up to now, there is no way to measure such psychological-theological factors. But in order to be able to perform qualitative investigations, a model has to be structured in such a way that it can be equipped with quantitative, numerical data.

It is the *time* we are bound to and that carries us through a life span. Therefore, a time factor must be included in the consideration. It is the time connected with the magnitude of faith

that develops into the feeling of receiving help. Existing over time results in awareness. And awareness provides the conscious feeling of being helped.

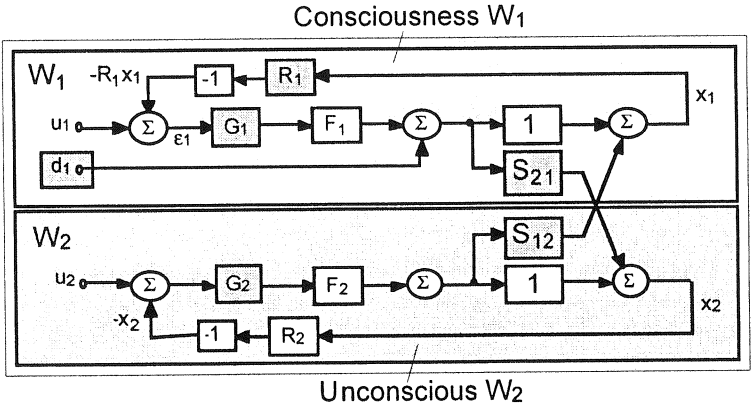


Figure VI-1: Structural diagram of consciousness and unconscious within the frame of faith (simplified Figure VI-2).

5 parameters will be used for computing faith. They are shaded: G_1, G_2, $S_{12}S_{21}$, R_1, and d_1.

G_1 Intensity for self-fulfillment of W_1's request for help;

G_2, Intensity for self-fulfillment of God's willpower to provide help; (it is not easy to accept this term!);

F_1, F_2 Time-symbol needed to act whilst existing; any action needs time;

R_1, R_2 Feedback factors, awareness of actual state;

$S_{12}S_{21}$ Magnitude of faith of W_1 to believe in W_2 as his god; Interaction with god, or affinity factor of faith;

u_1, u_2 Aims of expected fulfillment, the goals; W_1's goal is his welfare, and W_2's goal is the domination of the universe in W_1's mind;

d_1; (±) External disturbance, discriminating or supporting W_1's faith from an external source;

x_1, x_2 Actual goal attainments. Of interest is, indeed, only x_1. As the model is time functional, x_1 changes continuously over time, $x_1(t)$, during prayer or during the operating faith process.

Every so often, this interaction $S_{12}S_{21}$ between the two brains, W_1 and W_2, brings up conflicts within an individual, and more so: such conflicts can grow into severe antagonism such as hating believers of different confessions, or of other dogmas, or other doctrines, other god-symbols. The believer of a contemporary established religion easily becomes an assailant toward a person who has another image in his unconscious. This other person will be called *heretic*, and very so often he will be persecuted. He becomes a religious pariah. *It is true that whatever is heresy in the one, is orthodoxy in the other, and a man who is persecuted in either, if he can escape into the other, is welcomed as a hero.* [3].

As the unconscious world is a prime necessity for survival, it has an enormous value. Therefore, the stronger the individual's faith is, the stronger an aversion can develop toward individuals of another faith. Aversions grow easily into wars. They carry the ugly name of *holy wars*. History has no lack of such events.

This essay investigates the faithfulness of an individual and the psychological help Δh he gets through his faith. Modeling of conflicts within an individual and their effect is also mentioned.

The Model

Figure VI-2 depicts a set-up of a generalized structure that shall enable numerical determination of religious faith to be performed. It contains 18 parameters. This number is too great for a digestible essay! A limitation to a few variables is necessary. This model, Figure VI-2 contains not only the help-demand intensity G_1 and the God's help intensity G_2, but anticipation and perseverance of both, of W_1 and W_2 as well. These two characteristics, anticipation and perseverance are for more profound investigations, but avoided herein.

Figure VI-1 depicts the reduced structure, used to investigate a limited number of influences of Figure VI-2, namely the five

parameters, G_1, G_2, $S_{12}S_{21}$, R_1 and d_1. G_1 and G_2 are the intensities of the two instances W_1 and W_2. These intensities are the driving forces for attaining the self-realizations u_1 and u_2. Each entity, W_1 and W_2, has to realize itself in order to remain in existence. G_1 strives for realizing u_1, and G_2 is assigned to realizing the divine existence u_2. The power G_2 is a suggestion, imagined by W_1 and conferred to W_2. As both, W_1 and W_2, are embedded in one being, in one brain, it must be assumed that the two entities have tight mutual communication with each other. (A clear separation into W_1 and W_2 is, indeed, an artificial ease for modeling our purpose.) It can be assumed that the unconscious W_2 has its own awareness of existing, its own feedback R_2 for working toward its own goal u_2. We are fully aware that our idea of a god in the unconscious might be shocking. But where else could god be found in the billions of galaxies except in any believer's brain!

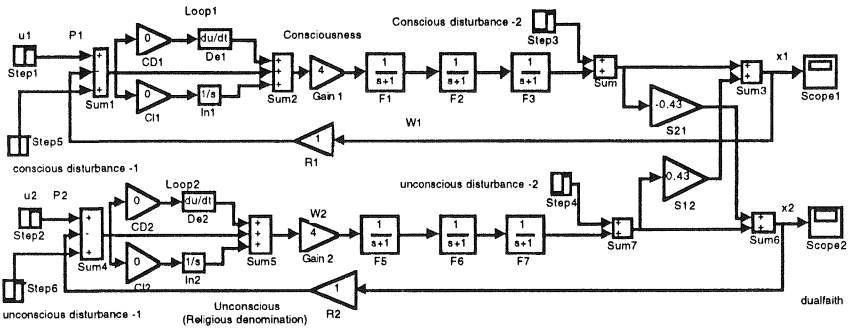


Figure VI-2: Simulink structure used for the entire investigation of faith. The figure has illustrative meaning only.

The bilateral communication forms the affinity factor $S_{12}S_{21}$. This factor is denoted for producing either consent or hostility. For consent, the factor $S_{12}S_{21}$ is negative, i.e., $S_{12}S_{21} < 0$; for hostility, $S_{12}S_{21}$ is positive, $S_{12}S_{21} > 0$. A short, proper explanation follows, although it has already been given in earlier chapters.

As faith also can turn over into internal mental conflict and even into love-hate or self-destructive hate and suicide, the possibility is foreseen to interpret such status with the same coupling structure of the two factors S_{12} and S_{21}, namely as hostility $S_{12}S_{21} > 0$.

Definition of Consent and Hostility

In a sympathetic interaction (faith), the coupling factor $S_{12}S_{21}$ is smaller than zero and it creates a negative feed-cross loop between the two entities W_1 and W_2. This loop is (referring to Figure IV-1):

$(+G_1)(+F_1)(-S_{21})(R_2)(-1)(+G_2)(+F_2)(+S_{12})(R_1)(-1)$,
and back to $+G_1$.

Due to $(-S_{21})$ the resulting sign of the cross-loop is negative. The influence is, as we will see and already know from earlier chapters, help.

In a hostile or conflicting interaction, the similar loop results in a positive sign:

$(+G_1)(+F_1)(+S_{21})(R_2)(-1)(+G_2)(+F_2)(+S_{12})(R_1)(-1)$,
and back to $+G_1$.

Positive feed-cross loops deteriorate behavior concerning fulfillment. Positive loops have a damaging influence.

A presumption: Because the conscious W_1 is looking for divine help, it is assumed that he is weak in his effort to strive for his own self-fulfillment u_1; thus, G_1 has to be looked at as being small. W_1 generally has a low willpower G_1 and believes in a strong W_2. Therefore W_2´s G_2, the effort of the divine symbol god, is assumed to be big, in W_1´s mind even a mighty infinity. But as both, W_1 and W_2, are going to be investigated parameters in a finite brain, both will be finite variables in the illustrations to follow.

We pose the following questions:

1. Does the weak person's endeavor (small G_1) receive more help from his unconscious God than the person of a strong will (large G_1)? Or, can it be assumed that the strong personality (strong W_1) does not need help from his godly unconscious W_2? Does the strong W_1 have the strength to look after himself? In other words, is the consciousness W_1 the leader of himself, or is the unconscious W_2 overwhelming (is the believer's God *almighty*?)

2. Does strong faith, i.e., a large magnitude of the affinity $S_{12}S_{21}$ provide more help than weak affinity?

3. Does faith in a powerful god (large G_2) provide more help than faith to a weak god (small G_2)?

4. Does low self-awareness, i.e., high self-admiration (small internal feedback factor R_1) provide more help than a great amount of self-awareness (self-denial due to much sensitivity)?
   [As mentioned above, it is assumed that the time-continuous awareness of the attainment $x_1(t)$ via the negative feedback creates awareness or consciousness. See Chapter I for high and low self-awareness.]

5. Will a strong believer (W_1 of large G_1) experience less effect from disturbing information (d_1) than a weak believer? The disturbance d_1 can augment ($+x_1/d_1$) or downgrade ($-x_1/d_1$) a person's faith.

Therefore the five parameters to be investigated are

a) The effort of W_1, factor G_1;
b) The depth of faith, factor $S_{12}S_{21}$;
c) The assumed strength of god, factor G_2; and
d) The awareness of the received help, factor R_1;

e) The effect of a disturbance signal d_1 on W_1 in both cases, in sympathy and in conflict.

These five parameters are shaded in Figure VI-1.

Although it was mentioned that time has to be included in the considerations, we are only calculating final results, i.e., end results, situations after a prayer's end, after a certain amount of faith-help effort has taken place. We, therefore, assume that the system W_1--W_2 remains stable (homeostatic) during the process of praying (no instability, i.e., no hysterical Messiah-ecstasy!).

The Formality

W_1's attainment x_1 without faith any is called $x_{1\text{-autonomous}}$, in short $x_{1\text{-auto}}$. This is W_1's attainment x_1 without interaction with a god. The affinity factor $S_{21}S_{12}$ is zero. W_1 is - with respect to W_2 - autonomous. There is no connection to a god in him.

$\pm \Delta h$ is the difference x_1-$x_{1\text{-auto}}$, called *help*. If, due to prayer, Δh is positive, then we have $+\Delta h$. The help is indeed purely mental. There is, as far as we know, no such thing as direct divine physical help from the outside physical world. But as W_1 and W_2 belong to the same being, help from the unconscious dissolves into the body, becomes physical; be this help for improving recovery from bad luck, be it increased joy of life. When Δh is negative, i.e., $-\Delta h$, it can mean satisfaction for condemning and burning a heretic by the believer. Condemning the heretic is an element of faith: Psalm 2/8-: *...and I shall give thee the heathen for thine inheritance, and the uttermost parts of the earth for thy possession. Thou shalt break them with a rod of iron; thou shalt dash them in pieces like a potter's vessel.*

The formula for calculating $x_{1\text{-auto}}$ is given with equation (VI-1); the formula for x_1 is equation (VI-2).

$$x_{1\text{-auto}} = \frac{G_1F_1S_{11}}{1+R_1G_1F_1S_{11}}u_1 \qquad \text{(VI-1)}$$

$$x_1 = \frac{[S_{11}+(S_{11}S_{22}-S_{12}S_{21})R_2G_2F_2]}{(1+S_{11}R_1G_1F_1)(1+S_{22}R_2G_2F_2)-S_{12}S_{21}R_1G_1F_1R_2G_2F_2}G_1F_1u_1 \qquad \text{(VI-2)}$$

As only attainments of a final process will be considered, in the two formulae (VI-1) and (VI-2) the expressions containing the time-behavior, F_1 and F_2, will be set to 1, which means that there is no time dependency expressed in both, neither in $x_{1\text{-auto}}$ nor in x_1. In addition, S_{11} and S_{22} will both be set to 1. S_{11} and S_{22} are W_1´s and W_2´s own *internal* subconscious information factors that are supposed not to change during a process of praying, i.e., whilst being in a state of active faith. S_{12} and S_{21} can be considered *in relation* to S_{11} and S_{22}. Setting S_{11} and S_{22} equal to 1 takes their influence virtually out in formulae (VI-1) and (VI-2).

With these simplifying modifications, the help-expression Δh, that is the difference, x_1-$x_{1\text{-auto}}$, is given with formula (VI-3).

$$\Delta h = \frac{-S_{12}S_{21}R_2G_2G_1}{[(1+R_1G_1)(1+R_2G_2)-S_{12}S_{21}R_1G_1R_2G_2](1+R_1G_1)} \qquad \text{(VI-3)}$$

In the expression (VI-3), u_1 is assumed to be 1, or 100%; therefore u_1 does not appear explicitly. The desired goal to be attained is 100%. The real attainment, ($x_{1\text{-auto}}$ and x_1), will be a fraction of 100%.

The simplifications make the formula (VI-3) more transparent. It can be seen that the affinity factor $S_{12}S_{21}$ has to be smaller than zero in order to produce positive help, $\Delta h > 0$. $S_{12}S_{21}$ has to be negative. As mentioned, a negative factor $S_{12}S_{21}$ forms a negative feed-cross signal between consciousness and unconscious. Negative feed-cross is stabilizing the togetherness of consciousness and unconscious. It is improving the inter-relationship. For more about

this fact, see Volume I.

Of interest is also the relative help in % compared with the autonomous behavior $x_{1\text{-auto}}$, - as given with equation (VI-1). This help Δh (%) is equation (VI-4).

$$\Delta h(\%) = \frac{x_1 - x_{1\text{-auto}}}{x_{1\text{-auto}}} = \frac{-S_{12}S_{21}R_2G_2}{(1+R_1G_1)(1+R_2G_2) - S_{12}S_{21}R_1G_1R_2G_2} \qquad (VI-4)$$

We emphasize once more:

A negative value of $S_{12}S_{21}$ provides help, real help, $\Delta h > 0$.
A positive value of $S_{12}S_{21}$ makes the help negative; it will damage W_1, $\Delta h < 0$. This will be seen numerically further down.

The Parameter Evaluations

a) See Figure VI-3: This graph shows help Δh as a function of W_1's effort G_1 with which W_1 realizes himself. $\Delta h(G_1)$ is the difference between attainment with faith, x_1, and attainment without faith, $x_{1\text{-auto}}$: $\Delta h(G_1) = x_1 - x_{1\text{-auto}}$. The formula for $\Delta h(G_1)$ comes from equation (VI-3). It is equation (VI-5).

$$\Delta h(G_1) = \frac{10G_1}{(11+21G_1)(1+G_1)}; \quad G_2 = 10 \qquad (VI-5)$$

Note that in Figure VI-3 there are two horizontal scales for the same curve. W_1 can get from his prayer the best result if he is weak, but not too weak: $G_1 = 0.72$. The help h_{max} is 16%. This is meant with respect to u_1 (u_1 is set to 100%). - With $G_1 = 0$, Δh is zero. W_1 has to exert a certain willpower for his own realization, for his fulfillment. Faith alone ($S_{12}S_{21} = -1$) does not do any good. In fact, if $G_1 = 0$, W_1 is dead. Δh_{max} was found with the derivative of equation (VI-5), i.e., the condition (VI-6), (See appendix VI-I at the

end of this chapter):

$$\frac{d[\Delta h(G_1)]}{dG_1} = 0 \qquad \text{(VI-6)}$$

The amount of help with respect to the attainment, when W_1 does not believe, i.e., with respect to $x_{1\text{-auto}}$, can be seen in Figure VI-4. There $\Delta h(\%)$ is 39% for $G_1 = 0.72$.

b) Figure VI-4: $\Delta h(\%)$ as a function of G_1 is equation (VI-7).

$$\Delta h(\%) = \frac{x_1 - x_{1\text{-auto}}}{x_{1\text{-auto}}} \qquad \text{(VI-7)}$$

There are two scales as well! The curve shows: the weaker W_1 is, the greater is the help for him in %. One could be reminded of St. Matthew 5/3: *Blessed are the poor in spirit: for theirs is the kingdom of heaven.*

The formula for Figure VI-4, equation (VI-8), corresponds with formula (VI-5).

$$\Delta h(\%) = \frac{10}{11+21G_1} \qquad \text{(VI-8)}$$

In this formula (VI-8), G_1 appears only in the denominator. The more effort W_1 exerts for his own realization, less help he gets - or better, less help he needs! The decline with increasing G_1 is rapid. W_1's self-realization with $G_1 = 0.72$ is 39% of u_1, i.e., of what he would achieve without faith. With faith he achieves 0.57%. The difference is 16%, as Figure VI-3 indicates.

The next parameter of interest is the influence of the magnitude of affinity on the amount of help Δh; in other words, the influence of the depth of faith. The parameter is $S_{12}S_{21}$. The curve is depicted

with Figure VI-5. The equation, taken from equation (VI-4), is equation (VI-9). $G_1 = 1$, $G_2 = 10$, $R_1 = R_2 = 1$.

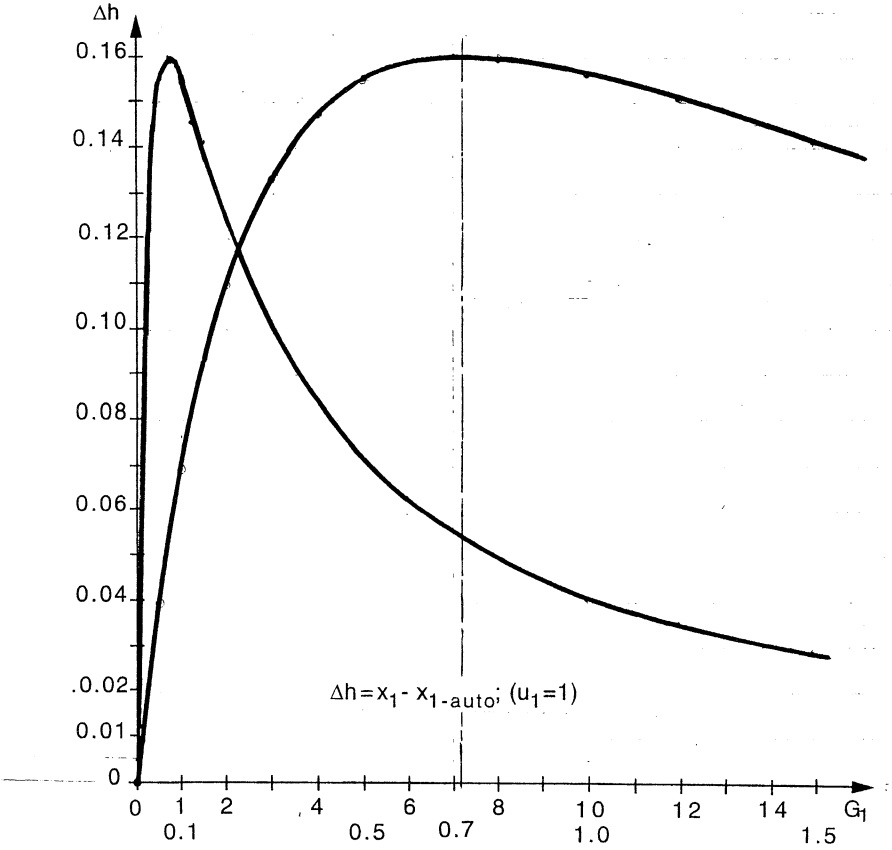


Figure VI-3: Help Δh with the effort G_1 as parameter. $G_2 = 10$; $S_{12}S_{21} = -1$; $u_1 = 1$, $u_2 = 0$; $R_1 = R_2 = 1$. Help Δh is defined as x_1-$x_{1\text{-auto}}$. There are two scales for the same curve. (W_2's goal u_2 is zero throughout because the two goals, u_1 and u_2, are not compatible. Their influences cannot be added.)

$$\Delta h(\%)(S_{12}S_{21}) = \frac{10S_{12}S_{21}}{22+10S_{12}S_{21}} \qquad \text{(VI-9)}$$

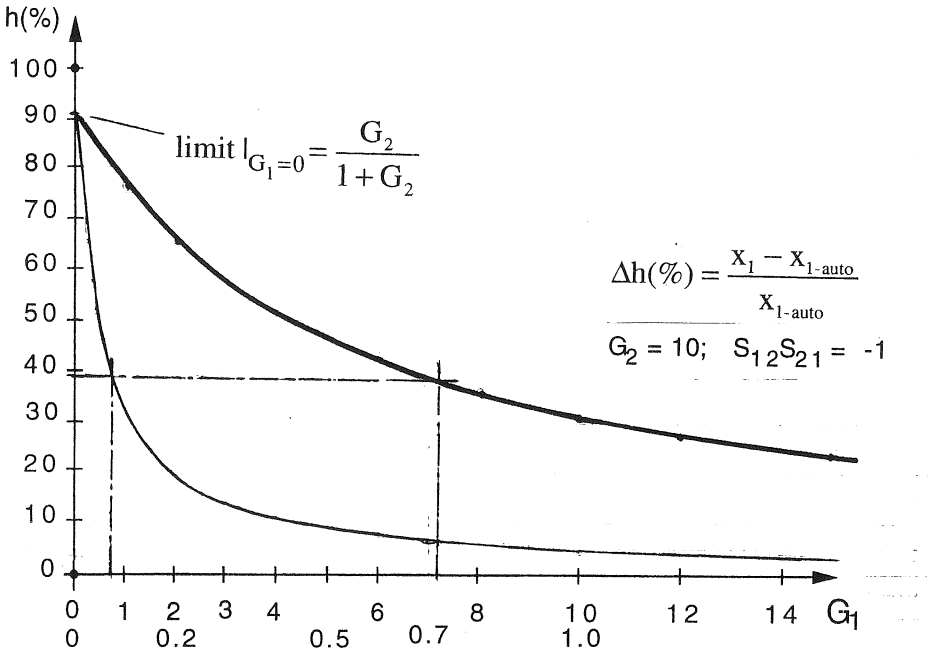


Figure VI-4: Help Δh (%) with the effort G_1 as parameter. $G_2 = 10$; $S_{12}S_{21} = -1$; $u_1 = 1$, $u_2 = 0$; $R_1 = R_2 = 1$. Help Δh (%) is defined as $(x_1\text{-}x_{1\text{-auto}})/\, x_{1\text{-auto}}$ in %. There are two scales. The limit $\Delta h\ (\%)|_{G_1 = 0} = G_2/(1+G_2)$ is 90.90%.

The effect is straight: The stronger the faith, the greater the help. No faith, no help! This curve demonstrates every preacher's proclamation: Abundance of faith in God guarantees abundance of help from this unconscious symbol. Yet, in Christianity there is no graduation, there is a black-and-white fact: *He that believeth on the Son hath everlasting life; and he that believeth not the Son shall not see life; but the wrath of God abideth on him* - St. John

3/36.

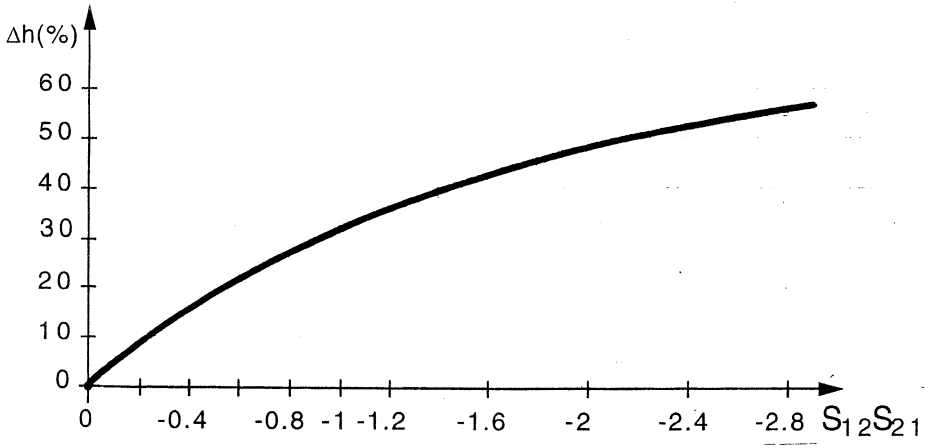


Figure VI-5: Help Δh (%) with the faith factor $S_{12}S_{21}$ as parameter. $G_1 = 1$; $G_2 = 10$; $u_1 = 1$, $u_2 = 0$; $R_1 = R_2 = 1$.

The third parameter we look at is the effort of W_2, of the imaginary Almighty. This effort G_2 is indeed given to Him by the imagination of W_1. The curve is Figure VI-6. $S_{12}S_{21} = -1$, $G_1 = 1$, $R_1 = R_2 = 1$. The formula is equation (VI-10):

$$\Delta h(\%)(G_2) = \frac{G_2}{2+3G_2}. \qquad \text{(VI-10)}$$

This result must be disappointing for a believer. It reveals that W_2 does not provide help proportionally to the expectation the believer W_1 has. The limit Δh (%)(G_2) with an infinitely large power - with an *almighty* power - is only 33%. With $G_2 = 10$ the saturation is attained at about 31%. The conclusion is that it is not necessary; it is not even worth to imagine an *almighty God*. It is much more important just to *believe* in the existence of a god symbol. Faith provides promotion. That's it. And this is what believers indeed do. They believe indiscriminately. They do not question the power of

their divine authority, they just believe as long as He exists in their mind. Almighty means to the believer *very big*. Saint John 4/48: *Except ye see signs and wonders, ye will not believe.*

The fourth parameter to be scrutinized is the feedback factor R_1. How does the consciousness W_1 perceive, or evaluate the received help? The continuous recognition of the attainment is sensed via the feedback signal $-R_1x_1$. The variable $-R_1x_1$ is the currently attained $-x_1$ modified by the perception factor R_1. R_1 is W_1's subjective evaluation factor of the actual unconscious state x_1.

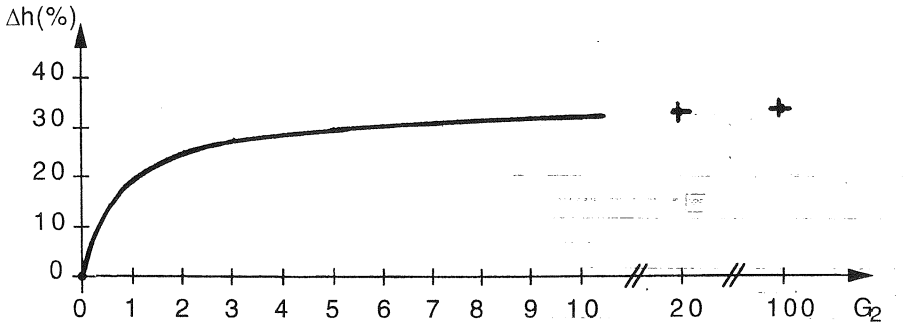


Figure VI-6: Help Δh (%) provided by W_2 with His effort G_2 as parameter. $G_1 = 1$; $S_{12}S_{21} = -1$; $u_1 = 1$, $u_2 = 0$; $R_1 = R_2 = 1$.

We repeat a comment about consciousness? What is it? We are convinced that it as a composite of the momentary attainment $x_1(t)$ carried along in time. Consciousness can be called an *attainment-time-integral*. Due to the fact that we are in time, inside it, and go with it, we do not have a perception of a dimension of it. We are carried along with time. Similarly when sitting in a train: we cannot see the train. We are in it and cannot go out of the moving train and look at it simultaneously. The same is the case with time. We cannot go out of time; we cannot leave time in order to look at it. Philosophical talk about time is in vain. It ends in undefined words. But curiously enough: We can calculate time-behavior, although

our brain cannot visualize it, perceive it. Therefore it is also called the fourth dimension. Everything going on in the Figures VI-1 and VI-2 happens simultaneously in time. It is impossible to comprehend such *simultaneousness*.

The equation for the investigation of the feedback signal $-R_1x_1$ is given with equation (VI-11). $G_1 = 1$, $G_2 = 10$, $S_{12}S_{21} = -1$, $R_2 = 1$. R_1 is the term to be varied. The expression Δh in % as a function of $-R_1$ is this equation (VI-11).

$$\Delta h(\%)(R_1) = \frac{10}{11+21R_1} \qquad \text{(VI-11)}$$

The formula is similar to equation (VI-8); and the curve Figure VI-7 is *equal* to curve Figure VI-4. A feedback signal of $-x_1$ is indicated as *normal*. This is feedback with $R_1 = 1$. It means a feedback without emotional distortion of the value of received help, or of x_1, respectively. With $R_1 = 1$, the help $\Delta h(\%)(R_1)$ is 10/32 = 0.3125.

A feedback factor R_1 between 0 and < 1 might be the symptom of *euphoria*. The believer is in a state of elation, of heavenly jubilation. This feeling is untrue. He exaggerates help consciously. The profoundly faithful person does not perceive his unconscious reality in its *correct* value. - A feedback factor, that is larger than 1 (for example $R_1 = 1.5$), on the other hand, is the symptom of depression. W_1's fate is too much for him to shoulder. $R_1 > 1$ is over-sensitiveness. Depression reduces the religious sensation because the believer W_1 is too vulnerable. He senses too much of his unconscious state. The reaction results in self-doubt. Giving too much value to the sensed help makes the help shrinking in the consciousness. Help-doubt is damaging help and in consequence damaging self-realization.

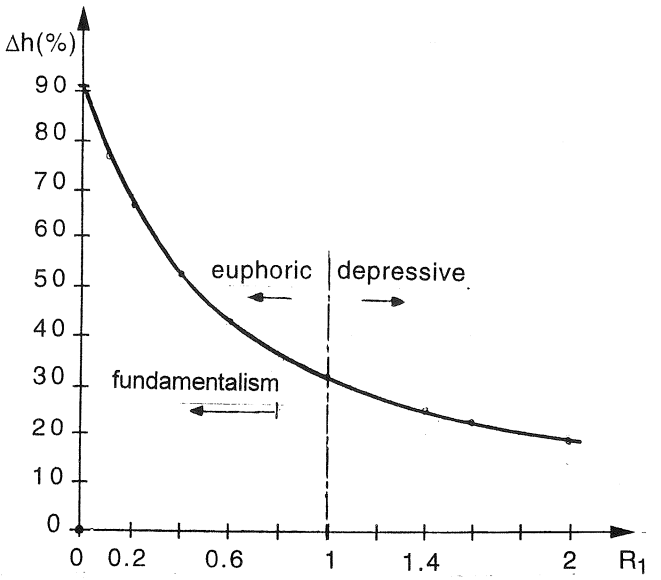


Figure VI-7: Help Δh(%) with the feedback factor R_1 as parameter. $G_1 = 1$; $G_2 = 10$; $S_{12}S_{21} = -1$; $u_1 = 1$, $u_2 = 0$; $R_2 = 1$.

Some words about hate; that is faith with positive $S_{12}S_{21}$; ($S_{12}S_{21} > 0$). In case W_1 is in a state of contradiction with his unconscious W_2 and therefore fights the religious doctrine with which he was indoctrinated, he damages himself if he cannot disconnect himself from his unconscious symbol by putting $S_{12}S_{21} = 0$ (in this specific regard). The damage is the more profound the lower G_1 is and the stronger the symbolic G_2 resides in his brain. A strong willpower G_1, on the other hand, as will be shown, helps the individual to avoid too much damage in his struggle with the religious system.

Formula (VI-2) with $S_{12}S_{21} > 0$ indicates that the numerator becomes reduced to a larger amount than the denominator. The attainment x_1 shrinks compared to an affinity factor of $S_{12}S_{21} < 0$.

$$x_1 = \frac{[S_{11} + (S_{11}S_{22} - S_{12}S_{21})R_2G_2F_2]}{(1+S_{11}R_1G_1F_1)(1+S_{22}R_2G_2F_2) - S_{12}S_{21}R_1G_1F_1R_2G_2F_2} G_1F_1u_1 \quad \text{(VI-2)}$$

With S_{11} and $S_{22} = 1$, $S_{12}S_{21} = +1$, $R_1 = R_2 = 1$, ($F_1 = F_2 = 1$, $u_1 = 1$) equation (VI-2) becomes the simple and transparent form (VI-12).

$$x_1 = \frac{G_1}{1+G_1+G_2} \quad \text{(VI-12)}$$

It can be seen now: G_2 pulls down on x_1, whereas G_1 is in the numerator and the denominator and it has more weight in the numerator than in the denominator. G_2 is damage to x_1; W_1 tries to avoid damage by increasing G_1.

To be in contradiction and in harsh doubt with the imposed god symbol can result in hostile interaction between the consciousness and the unconscious. God with his G_2 hangs only in the denominator and, thus, reduces x_1. A hostile god inside oneself is damage. Only a large G_1 can compensate part of the loss if the potency of god is not overwhelming. How intolerant, yet destructive and inhuman the statement in St. Matthew 12/30: *He that is not with me is against me!* Any blunt *either-or* in the enormous complexity of life is absurd cruelty.

As a summary of our faith-excursion, Figure VI-8 shows three faith-life attainments x_1, and three effects of a disturbing information d_1. The effect upon a disturbing information d_1 is the fifth and last parameter we are interested in.

Three faith-life fulfillments, or goal attainments $x_1(u_1)$:

a) $x_1(u_1)$: $S_{12}S_{21} = -1$, in consent with W_2;
b) $x_1(u_1)$: $S_{12}S_{21} = 0$, no communication with W_2;
c) $x_1(u_1)$: $S_{12}S_{21} = +1$, in contradiction with W_2.

Three effects of a disturbance $x_1(d_1)$:

d) $-x_1(d_1)$: $S_{12}S_{21} = -1$, faith disrupting disturbance;

e) $-x_1(d_1)$: $S_{12}S_{21} = 0$, neutral disturbance, no effect;
f) $-x_1(d_1)$: $S_{12}S_{21} = +1$, failing missionary reforming action.

The autonomous state:
b) $x_1(u_1)$: $S_{12}S_{21} = 0$, and e) $-x_1(d_1)$: $S_{12}S_{21} = 0$ are the attainment x_1, and the effect a disturbance d_1 on u_1 in the autonomous state of W_1. These two formations serve for comparison with the other four formations, with a), c), d), and f).

Figure VI-8-a depicts several goal attainments $x_1(u_1)$
Figure VI-8-b depicts three curves of the effect of a disturbance $- x_1(d_1)$.

Figure VI-8-a:
The dashed curve b) is marked as $\underline{x_1u_1):S_{12}S_{21} = 0}$. It is the autonomous attainment, i.e., the attainment without any faith-influence.

The curve a) shows the attainment with faith. This curve is marked with $\underline{x_1(u_1):S_{12}S_{21} = +1}$. Δh indicates the help.

The curve c) shows the occurring damage Δd due to faith-conflict $S_{12}S_{21} = +1$. It is marked with $\underline{x_1(u_1):S_{12}S_{21} = +1}$. Both of the curves, faith and faith-conflict, are for $G_2 = 10$. At $G_1 = 2$ it is indicated how small help (Δh) is compared to the enormous damage (Δd).

For the pattern c), $\underline{x_1(u_1):S_{12}S_{21} = +1}$, two additional curves are depicted, namely for $G_2 = 30$ and $G_2 = \infty$. The comparison of the four curves $G_2 = 0$, 10, 30, and ∞ indicate that the stronger the symbol W_2 exerts his willpower G_2, the more damage (Δd) the weak W_1 has to face in a faith-conflict. This means in theological terminology that God damages the one who does not accept His regimen. We already mentioned above that in Christianity there appears the utmost cruelty: *He that believeth on the Son hath*

everlasting life: and he that believeth not the Son shall not see life; but the wrath of God abideth on him. This might be the case when God is almighty, i.e., $G_2 = \infty$. The magnitude of damage is multiple times the magnitude of help (based on the same parameter magnitudes of G_1, G_2, and the affinity factors $S_{12}S_{21} = \pm 1$). This case c) shows drastically that with an almighty God of $G_2 = \infty$ the damage to W_1 is 100%: $x_1(u_1)$ for $S_{12}S_{21} = +1$ is zero, independent of G_1. If the believer in conflict carries an almighty god-image in his unconscious, he kills himself.

Psalm 7/10-13 describes this fact:
My defence is of God, which saveth the upright in heart. God judgeth the righteous, and God is angry with the wicked every day. If he turn not, He will wet his sword; He hath bent his bow, and made it ready. He hath also prepared for him the instruments for death.

Such statement can be of enormous psychological damage to sensitive believers who struggle with an internal conflict with religious doctrines. The clergy can thoughtlessly or intentionally destroy a person easily by drumming into his unconscious a fearful god symbol.

A child should have the freedom to find his own symbol to believe in, and he should not become baptized by imposition through the theological system he is born into when he has no consciousness yet. A baby has no ability to make his own decision. From such a standpoint, religious doctrine is mental tyranny! - Or perhaps well meant sustaining culture?

It is a natural law that any established institution always wants to expand and enrich its status. The church catches the baby for baptizing when he/she does not realize yet what is happening to him. This procedure is against religious morality. The baby becomes pushed into a doctrine, emotionally and mentally. This is equivalent to political subordination. Later in his/her life it can become extremely difficult to escape from a religious community.

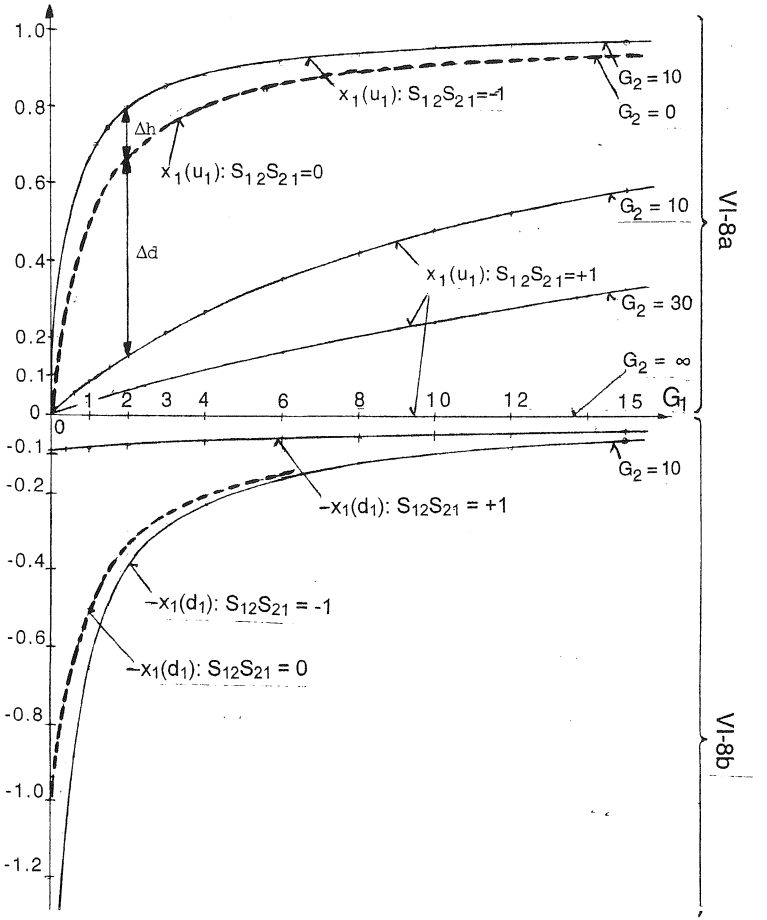


Figure VI-8:

a) Faith fulfillment $+x_1(u_1)$: $S_{12}S_{21} = -1$;
b) No-faith fulfillment $+x_1(u_1)$: $S_{12}S_{21} = 0$;
c) Controversial fulfillment $+x_1(u_1)$: $S_{12}S_{21} = +1$;
d) Faith-disturbance effect $-x_1(d_1)$: $S_{12}S_{21} = -1$;
e) No-faith disturbance effect $-x_1(d_1)$: $S_{12}S_{21} = 0$;
f) Controversial disturbance effect $-x_1(d_1)$: $S_{12}S_{21} = +1$.
Driving force G_1 is parameter. $u_2 = 0$; $R_1 = R_2 = 1$.

To renounce a doctrine creates arduous feelings of guilt and results every so often in the outcast of the *heretic.* In Saint Matthew 18/6 Jesus said: *But whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depth of the sea.*

To finish the investigation, we elaborate on the question: what influence a disturbance d_1 can have on the believer and on the anti-doctrine believer? Here it must be emphasized that a disturbance d_1 cannot only have a negative influence, it also can be of positive orientation. The disturbance signal d_1 can be plus or minus. It can be supportive, and it can be damaging, depending on its *effect* it has on W_1.

Figure VI-8-b demonstrates with the curve $\underline{-x_1(d_1):S_{12}S_{21} = -1}$ the sensitivity, i.e., is the reaction of faith upon a disturbance d_1. At a large G_1 the reaction comes close to the reaction in the autonomous state, at $\underline{-x_1(d_1): S_{12}S_{21} = 0}$. There is not much harm. But at very low G_1, $(0 < G_1 < +1)$, the effect of $\underline{-x_1(d_1):S_{12}S_{21} = -1}$ is much worse than $\underline{-x_1(d_1):S_{12}S_{21} = 0}$. For believers of a low willpower, the negative d_1 has a great effect.

This fatal effect comes to light in Figure VI-9, where $x_1(d_1)$ is subtracted from $x_1(u_1)$. The resulting attainment, $x_1(u_1)-x_1(d_1)$ with $S_{12}S_{21} = -1$ can become negative. If, for example, a weak believer $(G_1 < 1)$ becomes aware, via outside information or via his own insight d_1, that the God he believes in does not exist in reality, he collapses. The damage is grave. Psychologists are well aware that religious customs, conventions, and rituals are an extremely serious matter: *Usus est tyrannus.*

Back to Figure VI-8-b: On the other hand, the effect of a disturbance d_1 on x_1 in the case of $S_{12}S_{21} = +1$ is extremely small: curve $\underline{-x_1(d_1):S_{12}S_{21} = +1}$. This fact can be interpreted that a skeptic cannot easily be convinced to get rid of his doubt and become a faithful member of the religious institution he is socially

connected with. Once he became a skeptic or an apostate, he remains an apostate.

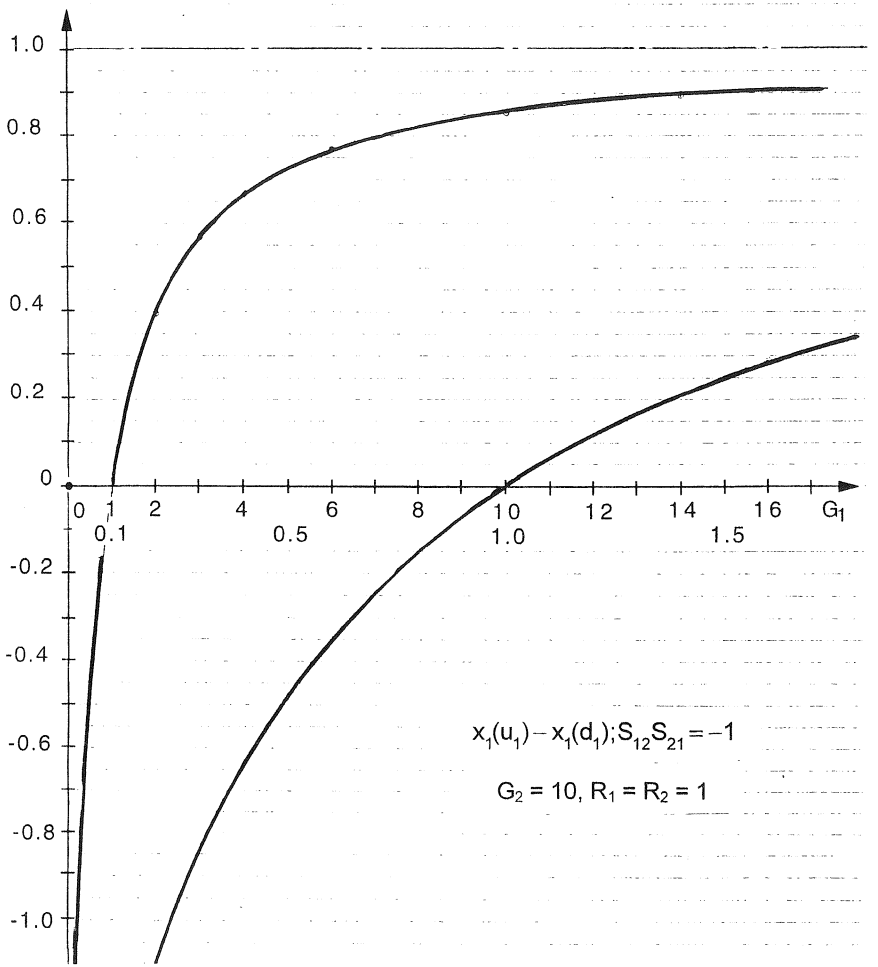


Figure VI-9: Disturbed faith: $x_1(u_1)-x_1(d_1)$; $S_{12}S_{21} = -1$. Note that there are two horizontal scales.

Closing Words

Rummaging about in dictionaries for definitions of god leads to a host of opinions, views, and conceptions. In order to find the way to our path of investigation we took *an image of an idolized person (or thing) who has omnipotent power to rule the world.* The monotheism of Christianity leads to the one divinity in the unconscious - that, for the purpose of conveying and mediating, has to be projected into the outer world in the form of a living being: the *Son of God.* In Saint Matthew 28/18, Jesus says: *All power is given unto me in heaven and in earth.*

As the idol is located in the human's mind and therefore is individual, there is the unlimited potential to agree and disagree, to worship and defend one's own image and fight other visions and religions. Religious wars are, therefore, predicted. Interfaith with other or all religions is an eidolon.

Observation shows that a person of low intensity for self-fulfillment (small G_1), i.e., for not working hard toward his own self-realization, and who simultaneously has a low level awareness of his attainment (weak feedback signal R_1), is very suggestible for religious sensations ($S_{12}S_{21} = -1$). Such suggestibility in connection with a disturbance-information of positive effect ($+d_1$, xenophobia in fighting heretics), leads directly to a fundamentalist attitude - religious euphoria - and as a consequence, to holy wars. Psalm 63/10: *They shall fall by the sword: they shall be a portion for foxes.*

The Roman Catholic Church outrageously demonstrated what kind of atrocities fundamentalists' faith in god-symbols could cause during the years of inquisition from 1231 until 1821. It is estimated that in Germany alone, between 1450 and 1550, one hundred thousand so called witches were put to death, mostly by being burned alive. And the killing for the glory of one's own god-symbol goes on in very non-rational patterns.

Robson Bonnichsen and Alan L. Schneider say in „The Sciences", July/August, 2000: *Scientific origin theories are subject to re-evaluation as new evidence emerges. Non-scientific origin theories, by contrast, derive from supernatural or mystical revelation; they tolerate neither doubt nor revision, and must be accepted on faith.* - Is our Chapter VI not something between the two, between scientific and non-scientific, or is it related to both of them? And then, which way does it have to be taken?

Appendix VI-I

The calculating of the maximum Δh in the Figure VI-3.
Equation (VI-5) is named here as (VI-A1):

$$\Delta h(G_1) = \frac{10G_1}{11+32G_1+21G_1^2}. \qquad \text{(VI-A1)}$$

Setting $\phi = 10G_1$, and $\lambda = 11+32G_1+21G_1^2$, $d\phi = 10$, $d\lambda = 32+42G_1$, the derivative

$$\frac{d[\Delta h(G_1)]}{dG_1}$$

leads to the equation (VI-A2):

$$\frac{d[\Delta h(G_1)]}{dG_1} = \frac{\phi'(G_1)\lambda(G_1) - \phi(G_1)\lambda'(G_1)}{\lambda^2(G_1)} = \frac{10(11-21G_1^2)}{\left(11+32G_1+21G_1^2\right)^2} = 0. \qquad \text{(VI-A2)}$$

As $G_1 > 0$, i.e., as the denominator is positive, the numerator has to be zero:, $11-21G_1^2 = 0$, or

$$G_1 = \sqrt{\frac{11}{21}} = 0.72. \qquad \text{(VI-A3)}$$

VII. A Trilogy of Hostility

Introduction

With this essay's model we show the multifaceted effect of hostility in psycho–social behavior. The investigation is done with two parties who have unconsciously an aggressive attitude toward each other and who are simultaneously striving toward their individual goals. In addition, the two parties observe each other's outcome and, therefore, *communicate visually* with each other consciously. They incorporate mutually the assessed demeanor of the other party into their own goal setting-feature. With reference to the title's term *trilogy,* the two goals are considered in three different modi:

a) The goals are *independent* from each other, i.e., not related to each other.
b) The goals are *equal*, i.e., of equal significance and equal magnitude.
c) The goals are *antagonistic*, i.e., of opposed tendency.

The main findings of the investigation can be summarized as follows:

To a): The *independent* goal concept, where each partner has his own goal in mind, renders the better a goal attainment the more the partners observe each others doing in a positive perspective. Then aggressive behavior does not mean damage. A partnership of two parties that both have an aggressive attitude and who strive toward their own goal and incorporate the mutual observation of the opposite party *positively* cannot be called hostility. They rather stimulate each other. Such a relationship results for both in a very successful final result. This indicates that aggressive attitude can have different outcomes. Very basically, to be aggressively disposed means also often working forward, attacking the way towards the own goal and not at all doing harm to the partner. Here we come to a point where we have to

distinguish further between the two tightly related terms, *aggression* and *hostility.* Aggression shows a positive quality when dealing with a positive view for the partner´s doing. The outcome of two aggressively disposed parties is then not detrimental. We will find out that concepts handled in a certain way often must be differentiated when regarded in view of different social structures and different values of the parties´ characteristics.

However, if the meaning for the partners is not positive but negative, then the perspective results in damage to one´s goal attainment. In this case of *negative* observation and therefore also negative incorporating of the parties´ outcome, the fact can be called *spaying on each other.*

To b): A partnership of two parties that are both in an aggressive disposition and who strive toward *equal* goals and who incorporate the mutual observation of the opposite party *positively* or *negatively* is similar to the situation in point a). More, it doubles the effect in both perspectives, in the positive and the negative one. An aggressive relationship in a positive respect of equal goals results in extremely successful attainment. This indicates again that aggressive behavior can have different outcomes. Aggression shows a very positive quality when dealing with an *equal* goal-concept of aggressive partners. But the same unconscious mutual aggressive disposition results in mutual harm to both parties if the assessed demeanor of the partner is *negatively* done.

The goals in these two situations b) - assessed demeanor taken positively or negatively - are *equal,* and not *common.* Common goals would require a common feedback for comparing with the common goal. This is not the case in **Figure VII-1**. Aggression has different outcomes depending in what one does with this kind of disposition applied within a specific structure!

An example for case b) with positive observation might be two

children in the same family who both strive to become top violin players. They have the same, but independent goals. Their attitude is aggressive for beating the partner for the own sake. The positively taken observation of each other's eagerness is mutually stimulating. The two persons are competing with each other.

To c): Aggression with *antagonistic* goals in comparison with equal and independent goals results in belligerent mutual destruction of the intended goal attainments: clash, combat, killing - if the mutual observation is taken positively. Surprisingly, if the mutual observation is taken negatively, there is an increase of goal attainment for both parties with respect to their goals. In other words: the party with the positive goal gets a positive attainment, whereas the party with the negative goal gets a negative attainment. But a negative goal with a negative attainment results still in a positive goal-relation. Taking the partners success in a kangaroo-like manner might be called malicious pleasure.

In all three cases, a) to c), the stated outcomes are the more strongly emphasized the stronger the aggressive attitude of each party toward the other and the greater the amount of mutual observation are.

The important point to be mentioned in this Chapter VII is that mutual aggressive attitude does not necessarily result in negative ends as the word might symbolize and as we handled the term thus far, namely doing harm. But mutual observation of the partner's doing has to be taken positively and there is no opposition concerning the partner's goals. Otherwise, if the goals are of opposing values, i.e., it they are antagonistic, there is no hope for a positive outcome for either party if the mutual observation is positive. The situation c) is underhandedness.

The Single Autonomous Party, or Partner

A few words of repetition by looking at party P_1, Figure VII-1. The

autonomous, single party in Fig. VII-1 is described in Volume I. A party can consist of an individual that has one goal, or a group of individuals with one common goal, e.g., its common business, or a party can be a whole nation with its one goal of welfare for its population. The postulate is that a party has one and only one goal, u_1, toward which it strives in a continuous manner. This goal is considered to be the party's self-realization, because whatever a party does, it wants at any instant to realize itself.

A party has a certain willpower to realize itself. The magnitude of the willpower is G_1. In addition, a party has a certain speed of action or retention of action, expressed with the transfer function F_1. The synergetic interrelation of power and speed can be called *intelligence,* because the higher the willpower and the faster the action, the closer the party comes to its goal after a certain time has elapsed. As the goal of a party is its self-realization, the goal does not have an ethical value; it is value neutral. If a party is no longer autonomous, the term intelligence, as just defined, does not apply anymore.

The party has self–control, i.e., it knows at any instant its distance from its set goal. This distance is $u_1–x_1 = \varepsilon_1$ (if there is no observation, i.e., $V_{12} = 0$, see Figure VII-1). In order to come closer to the goal, the party's endeavor is to reduce the distance between its point-to-point attainment x_1 and the goal u_1. As disturbances d_1 from the environment act constantly, the party has to fight their influence in its goal–striving process. In addition, a party has mutual attitude-relations (unconscious), and communication (conscious observation of each other) when no longer being autonomous. These connections occur through the channels indicated with S_{12} and S_{21} as unconscious conveys, and with V_{12} and V_{21} as conscious conveys.

All the above facts taken into account for a mathematical structure result in a *functional loop* in which each cause produces an effect, and this effect in turn produces a new cause. The loop is set in such a form that the party can, under unfavorable

circumstances, become unstable, i.e., baffle its goal approach. This can happen at too large a willpower–enforcement or by too much dragging out the loop's action. It is, therefore, important to take the stability limit (the limit of homeostasis) of the party into account under both points of view: willpower and speed of action. These two factors depend intrinsically on each other: see Volume I. However, in this Chapter VII we restrict ourselves to end states, because the emphasis is on the terminal outcome of *aggressive* interrelations of the three mentioned modes.

The Dual–Partnership and its Performance

For the two terms *party* and *partner,* the word *partner* will be used henceforth.

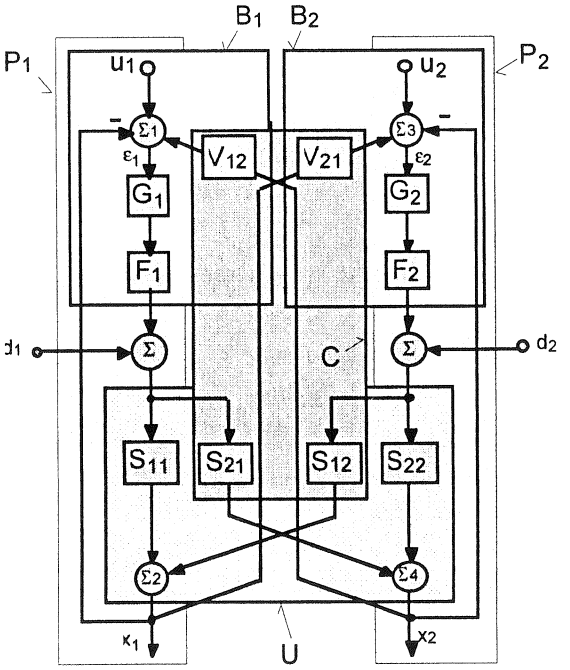
Figure VII-1 illustrates the system of two partners, the dual partnership P_1-P_2. u_1 and u_2 signify the two goals, the aim of self-realization of each partner as a constantly present purpose. There shall be no disturbances acting in our considerations, i.e., d_1 and d_2 will both be zero.

The goal attainment, or performance index, of each partner is represented relative to his goal, namely as x_1/u_1 and x_2/u_2, respectively. If $x_1/u_1 = 1$, and $x_2/u_2 = 1$, then $x_1 = u_1$ and $x_2 = u_2$, and the goals become achieved by 100%, or the attainment is 1. The two expressions, x_1/u_1 and x_2/u_2, are described with the formulae (VII-1a) und (VII-1b).

As mentioned, the essay considers only steady state values, i.e., goal attainments after a considerable time has elapsed after the goals were set. This will say mathematically that $s = 0$, or $F_1 = F_2 = 1$. Again, as done up to now, S_{11} and S_{22} are also set to the magnitude of 1. With these limitations the formulae (VII-1a) and (VII-1b), become reduced to the equations (VII-2a) and (VII-2b).

G_1 and G_2 in Figure VII-1 are the factors of the intensity with which

the two partners strive toward their goals. We call these factors willpower. T_{1i}, T_{1j}, T_{2k} and T_{2l} determine the magnitude of speed of action, or the dynamics and/or the psycho–social association of thinking, resulting in action. The smaller the exponents m_1, m_2, n_1 and n_2 are, and the smaller the time constants T_{1i}, T_{1j}, T_{2k} and T_{2l} and the more different they are, the greater is the speed of the partners' activities. For determining the stability of the partnership, the speed of action has to be taken into account.



$$F_1 = \frac{1}{\prod_{i=1}^{m_1}(T_{1i}\,s+1)};\quad F_2 = \frac{1}{\prod_{k=1}^{n_1}(T_{2k}\,s+1)};\quad S_{11} = \frac{1}{\prod_{j=1}^{m_2}(T_{1j}\,s+1)};\quad S_{22} = \frac{1}{\prod_{l=1}^{n_2}(T_{2l}\,s+1)}.$$

Figure VII-1: Extended model of the dual-partnership; the partners P_1 and P_2 (in the Laplace-domain).

Captions for Figure VII-1:

P_1, P_2	Partners P_1 and P_2
u_1, u_2	Set goals, intended self–realization
G_1, G_2	Factors of willpower for self–realization
F_1, F_2	Transfer functions of the inherent dynamic characteristics
S_{11}, S_{22}	Transfer factors of the unconscious information
T_{1i}, T_{2k}	Conscious time constants
T_{1j}, T_{2l}	Unconscious time constants
m_1, m_2, n_1, n_2	Number of delay elements of first order in series
x_1, x_2	The moment-to-moment goal variables
x_1/u_1, x_2/u_2	Goal attainments
S_{12}, S_{21}	Transfer factors of the unconscious information, the attitude
V_{12}, V_{21}	Transfer factors of mutual observation
B_1, B_2	Conscious, or rational part of the parties;
C	Communication block
U	Unconscious domain of the partnership.

$$\frac{x_1}{u_1} = \frac{\begin{vmatrix} S_{11} & (G_2F_2S_{12} - G_1F_1S_{11}V_{12}) \\ S_{21} & (1+G_2F_2S_{22} - G_1F_1S_{21}V_{12}) \end{vmatrix} G_1F_1 + \begin{vmatrix} S_{12} & (G_2F_2S_{12} - G_1F_1S_{11}V_{12}) \\ S_{22} & (1+G_2F_2S_{22} - G_1F_1S_{21}V_{12}) \end{vmatrix} G_2F_2\frac{u_2}{u_1}}{\begin{vmatrix} (1+G_1F_1S_{11} - G_2F_2S_{12}V_{21}) & (G_2F_2S_{12} - G_1F_1S_{11}V_{12}) \\ (G_1F_1S_{21} - G_2F_2S_{22}V_{21}) & (1+G_2F_2S_{22} - G_1F_1S_{21}V_{12}) \end{vmatrix}}, \quad \text{(VII-1a)}$$

$$\frac{x_2}{u_2} = \frac{\begin{vmatrix} (1+G_1F_1S_{11} - G_2F_2S_{12}V_{21}) & S_{12} \\ (G_1F_1S_{21} - G_2F_2S_{22}V_{21}) & S_{22} \end{vmatrix} G_2F_2 + \begin{vmatrix} (1+G_1F_1S_{11} - G_2F_2S_{12}V_{21}) & S_{11} \\ (G_1F_1S_{21} - G_2F_2S_{22}V_{21}) & S_{21} \end{vmatrix} G_1F_1\frac{u_1}{u_2}}{\begin{vmatrix} (1+G_1F_1S_{11} - G_2F_2S_{12}V_{21}) & (G_2F_2S_{12} - G_1F_1S_{11}V_{12}) \\ (G_1F_1S_{21} - G_2F_2S_{22}V_{21}) & (1+G_2F_2S_{22} - G_1F_1S_{21}V_{12}) \end{vmatrix}}, \quad \text{(VII-1b)}$$

The values S_{12}, S_{21}, V_{12}, and V_{21}, and S_{11} and S_{22}, and definitely the values F_1, and F_2, are time dependent. However, for the calculation of goal attainments, this dependency is to be disregarded. Therefore, $F_1 = 1$, $F_2 = 1$, $S_{11} = 1$ and $S_{22} = 1$, and the formulae (VII-1a) and (VII-1b) become (VII-2a) and (VII-2b).

$$\frac{x_1}{u_1} = \frac{\begin{vmatrix} 1 & (G_2S_{12} - G_1V_{12}) \\ S_{21} & (1+G_2 - G_1S_{21}V_{12}) \end{vmatrix} G_1 + \begin{vmatrix} S_{12} & (G_2S_{12} - G_1V_{12}) \\ 1 & (1+G_2 - G_1S_{21}V_{12}) \end{vmatrix} G_2 \frac{u_2}{u_1}}{\begin{vmatrix} (1+G_1 - G_2S_{12}V_{21}) & (G_2S_{12} - G_1V_{12}) \\ (G_1S_{21} - G_2V_{21}) & (1+G_2 - G_1S_{21}V_{12}) \end{vmatrix}}, \quad \text{(VII-2a)}$$

$$\frac{x_2}{u_2} = \frac{\begin{vmatrix} (1+G_1 - G_2S_{12}V_{21}) & S_{12} \\ (G_1S_{21} - G_2V_{21}) & 1 \end{vmatrix} G_2 + \begin{vmatrix} (1+G_1 - G_2S_{12}V_{21}) & 1 \\ (G_1S_{21} - G_2V_{21}) & S_{21} \end{vmatrix} G_1 \frac{u_1}{u_2}}{\begin{vmatrix} (1+G_1 - G_2S_{12}V_{21}) & (G_2S_{12} - G_1V_{12}) \\ (G_1S_{21} - G_2V_{21}) & (1+G_2 - G_1S_{21}V_{12}) \end{vmatrix}}, \quad \text{(VII-2b)}$$

As there are no measurable quantities yet in the real psycho–social world (beside statistical data), comparison is a means of evaluation. Comparison can show which situation of two or of several is better or worse or best. The examination of the results, therefore, will be based on comparison of the behavioral modi and their consequences.

Concerning the three listed goal concepts, a), b), and c), the following facts are set:

1) For *independent* goals: for the calculation of x_1/u_1, i.e., in the equation VII-2a, u_2/u_1 is set to zero; u_2 has no influence on u_1. And for the calculation of x_2/u_2, i.e., in the equation VII-2b u_1/u_2 is set to zero; u_1 has no influence on u_2.

2) For *equal* goals: $u_1 = u_2$, i.e., in the equations (VII-2) $u_2/u_1 = u_1/u_2 = 1$. This means that the goals are equally oriented and of equal value.

3) For *antagonistic* goals: $u_1 = -u_2$, or $u_2 = -u_1$, i.e., in the equations (VII-2): $u_2/u_1 = -1$, or $u_1/u_2 = -1$.

As the model, Figure VII-1 and the parameters taken, is value-symmetric, only the calculated x_1/u_1 will be depicted.

Some more notes about the potential of the model:

If the V_{12}- and V_{21}-connections are set to zero, the model serves for the two *unconscious* attitude constellations, a consentient and a hostile one. The structural facts and their justifications are:

For consent $S_{12} > 0$ and $S_{21} < 0$, or $S_{12} < 0$ and $S_{21} > 0$;
for hostility $S_{12} > 0$ and $S_{21} > 0$.

As mentioned in previous chapters, $S_{12} < 0$ and $S_{21} < 0$ is a pathological, self-ruining constellation, and is not considered herein. In a status of consent, the circuit of interaction G_1-F_1-S_{21}-G_2-F_2-S_{12}-G_1 results in a *negative feed-cross loop*. This status *consentient attitude* increases mutually the attainment of the two partners. In a state of hostility, the circuit of interaction results in a *positive feed-cross loop.* It decreases each other's attainment if the partners' goals are *independent* from each other. See Volume I.

To remember: A social structure that results in mutual help for its partners is called *consent*; a structure that results in mutual damage for its components - with *independent* goals - is called *hostility*. This is defined in accordance with well-known social notions and up to now, also in our investigations.

We already found that even in a state of consent, one of the two partners has to be in an aggressive state. On partner has to push forward, has to be active. In hostility, however, both partners are in an aggressive disposition, namely both transfers, S_{12} and S_{21}, are positive in their attitude-cooperation. In consent, only one of S_{12} and S_{21} can be taken positively, the other has to be taken negatively. The partner, who internalizes either S_{12} or S_{21} positively, when the cross-information reaches his loop, is called the *egoist*. He is aggressively disposed, whereas a partner, who internalizes either S_{21} or S_{12} in a negative manner, when he perceives the neighbors attitude-information, is called *altruist*. He is accommodatingly disposed. He subtracts information of the discrepancy (variables with S_{12} or S_{21}) that exists between the two partners. This situation is extensively explained in Volume I.

The *unconscious* consentient attitude renders mutual help, the *unconscious* hostile attitude results in mutual damage. In other words, the unconscious attitude, the pure presence of the two partners without any rational doing to each other ($V_{12} = V_{21} = 0$), already has an effect on each other's outcome! This is an extremely important fact that generally is not recognized and taken into account in daily life (except by psychologically trained people). We think there are not only Platonic love, but as well Platonic hate.

With these preconditions in mind, the following composites of some constellations of hostile behavior ($S_{12} > 0$ and $S_{21} > 0$) and their attainments will be presented in the following Figures VII-2, VII-3, and VII-4. In these three figures the bilateral transfer factors of mutual observation, V_{12} and V_{21}, come into play.

Figure VII-2: Hostile attitude with *independent* goals;
Figure VII-3: Hostile attitude which *equal* goals;
Figure VII-4: Hostile attitude with *antagonistic* goals.

In all three figures there will be parity of willpowers: $G_1 = G_2$ (this is, indeed, a massive restriction). The magnitudes of hostility will have four different values, namely

zero, i.e., $S_{12} = S_{21} = 0$;
minor, i.e., $S_{12} = S_{21} = 0.5$, i.e., $S_{12}S_{21} = 0.25$;
stronger, i.e., $S_{12} = S_{21} = \sqrt{0.5} = 0.707$, i.e., $S_{12}S_{21} = 0.5$;
and strong, i.e., $S_{12} = S_{21} = 1$, i.e., $S_{12}S_{21} = 1$.

Thus, the so-called coupling factors, the product $S_{12}S_{21}$, will be: $S_{12}S_{21} = 0, 0.25, 0.5$, and 1. The observation of each other's doing, $\pm V_{12}$ and $\pm V_{21}$, will be a variable. The restriction is: $|V_{12}|$ is equal to $|V_{21}|$. Severe limitations of parameter values are require in order not to overload the grasp.

It goes without saying that such restrictions limit the values of the results.

Discussion of the Goal Attainments

The scale of the symmetric factors of mutual observation, $|V_{12}| = |V_{21}|$ varies from zero to one. One cannot observe more than what exists, that means $|V_{12}| = |V_{21}| \leq 1$ although mathematically there is no limit, and some people might see more than what really *is*.

Another feature that has to be kept in mind is that all three figures, Figures VII-2, VII-3, and VII-4, show steady state values and - as already mentioned - the stability of each system has to be maintained in this steady state and not only on the way toward the steady end position. A system has to be stable in order to operate properly, i.e., it has to be homeostatic in both, in approaching the steady state *and* in holding this position at this end state. It was found that the greater the values S_{12}, S_{21}, $|V_{12}|$, and $|V_{21}|$ are, including a certain speed of action with F_1 and F_2, less the willpowers G_1 and G_2 can be for maintaining stability. Or, once G_1 and G_2 and S_{12} and S_{21} are set, then in order to guarantee stability, there is a limit to the values $|V_{12}|$ and $|V_{21}|$. Although stability is of enormous importance, for the three figures to be depicted, we show steady state values only, assuming that stability borders are not transgressed. We still get qualitative results of great interest.

In all three figures the goal attainments are the same for P_1 and P_2 for a specific package of parameters. This is so because the structure is symmetric - except for the orientation of the goals u (+) or (-), what does not come into play concerning this symmetry.

a) We begin with the examination of the most common situation, with the feature of *independent* goals, Figure VII-2, and with $V_{12} = V_{21} > 0$. The attainments x_1/u_1 increase with mutual observation. If there is no observation ($V_{12} = V_{21} = 0$), increasing magnitude in hostility means increasing damage (the goal attainments decrease). This can be seen on the vertical axis at $V_{12} = V_{21} = 0$. From $S_{12}S_{21} = 0$ via $S_{12}S_{21} = 0.5$ and $S_{12}S_{21} = \sqrt{0.5}$ to $S_{12}S_{21} = 1$ the value x_1/u_1 drops from 0.67 down to 0.4, or from 67% to 40%. However, with increasing observation $V_{12} = V_{21} > 0$ the goal

attainment x_1/u_1 goes up with greater hostility. See the end-values of x_1/u_1 for $V_{12} = V_{21} = 1$.

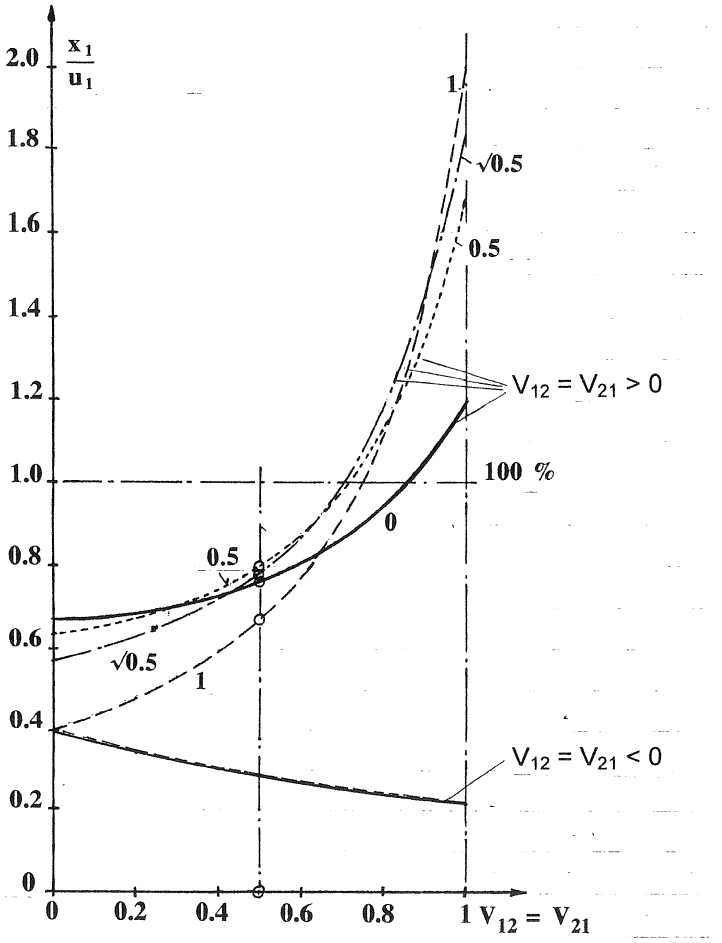


Figure VII-2: Goal attainments for independent goals. Parity of willpowers: $G_1 = G_2 = 2$. For $V_{12} = V_{21} > 0$: hostile attitude of zero, of minor, of higher and of high magnitude: $S_{12} = S_{21} = 0$; 0.5; $\sqrt{0.5}$; and 1. For $V_{12} = V_{21} < 0$: hostile attitude of $S_{12} = S_{21} = 1$.

Each partner dislikes the other partner, i.e., he is against the other partner - in his mind. But also each partner strives toward his own goal. It is easy to imagine that mutual observation - seeing what the other does (building on the arsenal) - helps one in adjusting one's own survival. An example: where $V_{12} = V_{21} = 0$, and $S_{12} = S_{21} = 1$, $x_1/u_1 = x_2/u_2$ is lowest, 0.4, or 40%. With $V_{12} = V_{21} = 1$, and $S_{12} = S_{21} = 1$, $x_1/u_1 = x_2/u_2$ is highest, 2.0, or 200%. Be reminded that survival cannot be 200%; we deal with comparison only!

For $S_{12} = S_{21} = 1$ there is one curve depicted for $V_{12} = V_{21} < 0$ by taking the same scale of $V_{12} = V_{21} > 0$. Observation taken negatively reduces the amount of the goal x_1 and in turn reduces the attainment x_1/u_1. From $V_{12} = V_{21} = 0$ to $V_{12} = V_{21} = -1$, x_1/u_1 drops from 0.4 to 0.2, or from 40% to 20%.

Taking a goal attainment $V_{12}x_2$ from the partner P_2 negatively, i.e., as $-V_{12}x_2$, shows that P_1 is wrong doing, has something tricky in mind, or - the other possibility - is unknowingly accepting wrong information.

b) The surprising and, indeed, socially somehow rather pleasant result is that with *equal* goals, Figure VII-3, the attainments are the higher the *greater* the up to now called *hostility* and the *greater* the *observation* are. Hostility is - as we see now - not necessarily bad if the attitude S_{12}- and S_{21}-factors are taken in an aggressive disposition, and if aggressive disposition means *pushing forward.* But *equal* goals are needed. One might say that this is the case in the daily well functioning, *competitive democracy* - or perhaps competitive Mafia-gangs (Nature doesn't know ethics!). This situation means effort for working toward equal goals, but having only the own goal in mind. Note that hostile behavior increases the goal attainments already at $V_{12} = V_{21} = 0$ if the goals are equal.

As in Figure VII-2, here in Figure VII-3 as well, for $S_{12}S_{21} = 1$ there is one curve depicted for $V_{12} = V_{21} < 0$ on the same scale of $V_{12} = V_{21} > 0$. Observation taken negatively ($V_{12} = V_{21} < 0$) reduces quasi the magnitude of the goal u - so to speak -. The operations in

the Σ-points Σ1 and Σ3 are u_1-V_{12} and Σ3-V_{21}, respectively. The result is damaging the partner, but it is in our symmetric arrangement self-damage as well.

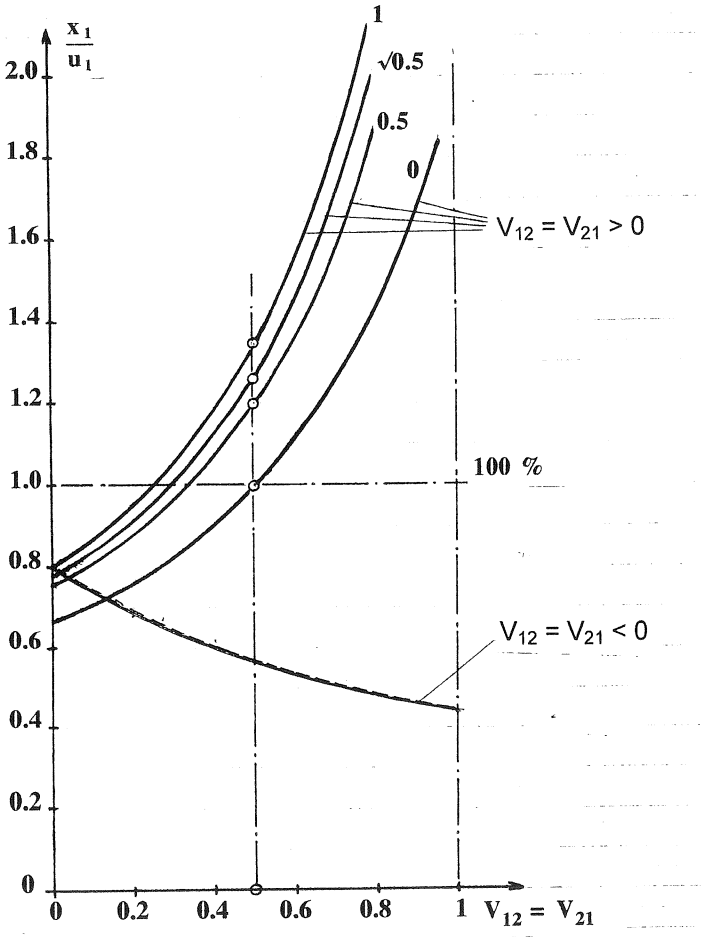


Figure VII-3: Goal attainments for equal goals. Parity of willpowers: $G_1 = G_2 = 2$. For $V_{12} = V_{21} > 0$: hostile attitude of zero, of minor, of higher and of high magnitude: $S_{12} = S_{21} = 0$; 0.5; √0.5; and 1. For $V_{12} = V_{21} < 0$: hostile attitude of $S_{12} = S_{21} = 1$.

c) If one of the two partners changes his mind and overturns his goal from +u to -u, we come to the *antagonistic* case c). We have Figure VII-4, the destruction of the dualism with mutual spying ($V_{12} = V_{21} > 0$). Each partner wants the opposite of the other: „I want to live; the partner shall die."

The solid lines are for $V_{12} = V_{21} > 0$. Indeed, in spying V_{12} and V_{21} are positive. The more pronounced the hostile behavior $S_{12}S_{21}$ is (it still changes in steps: 0, 0.25, 0.5, and 1); and the more intense the mutual observation factors $+V_{12}$, $+V_{21}$ are, the greater are the goal damage for both partners. This is the typical war–situation depicted with the solid lines in the figure. For the maximum strength of hostility of $S_{12}S_{21} = 1$, the mutual destruction is 100%! *Bellum lethale!* Deadly war. Mutual positive observation adds to the attitude-damage. Hostility with antagonistic goals is mutual homicide. We risk again the linear argumentation - done similarly above - that a positive V_{12} multiplied with a negative u_1 results in a negative signal, and adding this negative signal into the Σ-point Σ1 in Figure VII-1 can be considered similar to decreasing the magnitude of the goal signal u_1. The effect is a decline of x_1/u_1. We see that if one of the two partners changes his mind and overturns his goal from +u to -u, i.e., going from Figure VII-3 to Figure VII-4 with $V_{12} = V_{21} > 0$, the destruction is definitely programmed! The saying comes true: *Lupus est homo homini!* Man is a wolf to his fellow man.

The dashed lines in Figure VII-4 are for $V_{12} = V_{21} < 0$.
The dashed lines show an increase of goal attainment with increasing observation incorporating in a negative manner: $-V_{12}$, and $-V_{21}$. A negative V_{12} multiplied with a negative x_2, resulting in a positive signal and adding this signal into the Σ-point Σ1 can be considered similar as increasing the goal signal u_1. The goal attainment x_1/u_1 increases accordingly. This increased attainment might be considered as malicious pleasure over the other partner's damage, experienced with the *antagonistic* goal concept and in connection with the mutually hostile attitude.

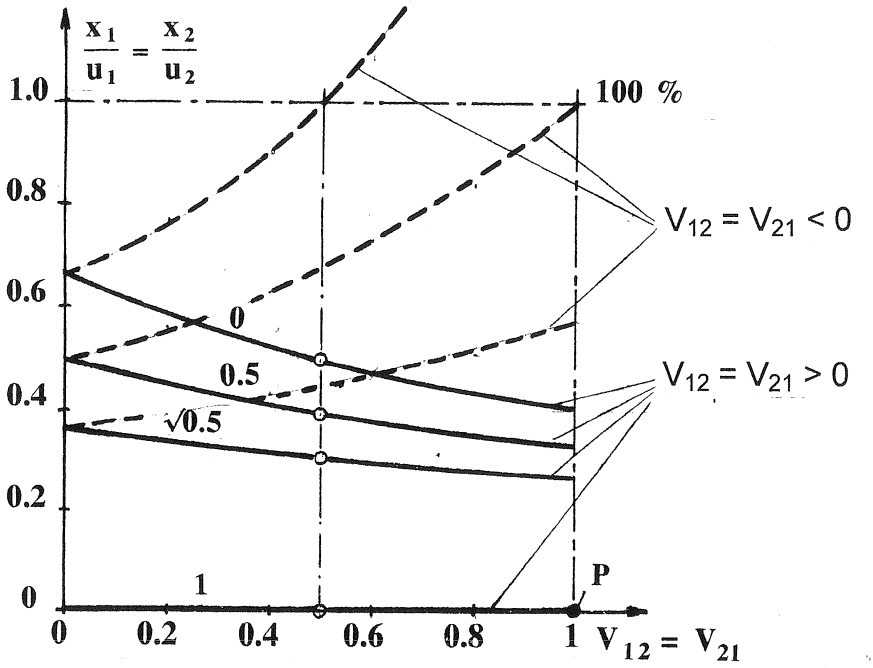


Figure VII-4: Goal attainments for antagonistic goals. Parity of willpowers: $G_1 = G_2 = 2$. Hostile attitude of zero, of minor, of higher and of high magnitude: $S_{12} = S_{21} = 0$; 0.5; $\sqrt{0.5}$; and 1; For the solid lines, $V_{12} = V_{21} > 0$; for the dashed lines $V_{12} = V_{21} < 0$. For x_1/u_1, $u_1 = 1$, $u_2 = -1$; for x_2/u_2, $u_2 = 1$, $u_1 = -1$.

As we have two different sets of curves in the Figures VII-4, one set of curves on the scale of decreasing attainments (set of $+V_{12}$, $+V_{21}$), and one increasing the attainments (set of $-V_{12}$, $-V_{21}$), it can be assumed that there are two parameter settings of antagonistic goals simultaneously in the mind of each partner, one setting with ($+V_{12}$, $+V_{21}$) with the purpose of damaging the goal attainment of the other partner, and one setting ($-V_{12}$, $-V_{21}$) with increasing goal attainments, meaning malicious pleasure for the damage done to that partner; both, quasi one on top of each other.

Table VII-1 shows some numerical data for $V_{12} = V_{21} = +0.5$. They can be read from the Figures VII-2 to VII-4.

It has to be mentioned that the stability limits, which we disregard, depend on all the parameters we are dealing with. Therefore the data given herein are really for comparative purposes only and provided only for demonstrating how unpredictable social systems are in reality when parameter values change continuously with the mood of people and depending upon external circumstances.

Very simple structures and models become extremely intricate when they are carefully scrutinized. The complexity becomes even more obvious when mathematics is applied. In the short addendum we give an example in connection with this essay. A modest insight into the irrational incredible precipice of human relationships should remind politicians that whenever they pretend to have firm solid solutions, they don't understand the problem!

Table VII-1: Goal attainments in % for $V_{12} = V_{21} = +0.5$.

	Goal constellation		
$S_{12}S_{21}$	Independent	Equal	Antagonistic
0	75	100	50
0.25	80	120	40
0.5	79	126	31
1	67	**133**	**0**

0 = lowest attainment 133 = highest attainment

Addendum

The description of the characteristic equation, i.e., the character for determining the behavior of the system Figure VII-1 - with the restrictions

$$F_1 = \frac{1}{(T_1 s + 1)^3};\quad F_2 = \frac{1}{(T_2 s + 1)^3};\quad S_{11} = 1;\quad S_{22} = 1$$

becomes (VII-3):

$$\begin{aligned}
&T_1^3 T_2^3 s^6 + \\
&3\,T_1^2 T_2^2\,(T_1+T_2)s^5 + \\
&3T_1T_2(T_1^2+3T_1T_2+T_2^2)s^4 \\
&+ (T_1^3+ 9T_1^2T_2+9T_1T_2^2+T_2^3+G_1T_2^3+G_2T_1^3 \\
&-G_1S_{21}V_{12}T_2^3-G_2S_{12}V_{21}T_1^3)s^3 \\
&+3(T_1^2+3T_1T_2+T_2^2+G_1T_2^2+G_2T_1^2-G_1S_{21}V_{12}T_2^2-G_2S_{12}V_{21}T_1^2)s^2 \\
&+ 3(T_1+T_2+G_1T_2+ G_2T_1-G_1S_{21}V_{12}T_2-G_2S_{12}V_{21}T_1)s \\
&+1+G_1+G_2+G_1G_2-G_1S_{21}V_{12}-G_2S_{12}V_{21} \\
&-G_1G_2[S_{12}S_{21}+V_{12}V_{21}-S_{12}S_{21}V_{12}V_{21}] \qquad = 0
\end{aligned}$$

(VII-3)

In order to find the stability limit, the Hurwitz determinant can be used:

$$\begin{vmatrix}
a_5 & a_3 & a_1 & 0 & 0 \\
a_6 & a_4 & a_2 & a_0 & 0 \\
0 & a_5 & a_3 & a_1 & 0 \\
0 & a_6 & a_4 & a_2 & a_0 \\
0 & 0 & a_5 & a_3 & a_1
\end{vmatrix} = 0,$$

which is detailed:

$$\begin{aligned}
&a_5a_4a_3a_2a_1-a_5a_4a_3^2a_0-a_5a_4^2a_1^2+2(a_5^2a_4a_1a_0)-a_5^2a_2^2a_1- a_5^2a_3a_2a_0- \\
&a_5^3a_0^2+2(a_6a_5a_2a_1^2)-3(a_6a_5a_3a_1a_0)- a_6a_3^2a_2a_1+a_6a_3^3a_0+a_6a_4a_3a_1^2 \\
&-a_6^2a_1^3 = 0.
\end{aligned}$$

(VII-4)

where the "a"–expressions are:

$$\begin{aligned}
a_6 &= T_1^3T_2^3 \\
a_5 &= 3T_1^2T_2^2(T_1+T_2) \\
a_4 &= 3T_1T_2(T_1^2+3\,T_1T_2+T_2^2)
\end{aligned}$$

$$a_3 = T_1^3+9T_1^2T_2+9T_1T_2^2+T_2^3+G_1T_2^3+ G_2T_1^3- G_1S_{21}V_{12}T_2^3-G_2S_{12}V_{21}T_1^3$$

$$a_2 = 3(T_1^2+3T_1T_2+T_2^2+G_1T_2^2+G_2T_1^2-G_1S_{21}V_{12}T_2^2-G_2S_{12}V_{21}T_1^2)$$

$$a_1 = 3(T_1+T_2+G_1T_2+G_2T_1-G_1S_{21}V_{12}T_2-G_2S_{12}V_{21}T_1)$$

$$a_0 = 1+G_1+G_2+G_1G_2-G_1S_{21}V_{12}-G_2S_{12}V_{21}- G1G_2(S_{12}S_{21}+V_{12}V_{21}-S_{12}S_{21}V_{12}V_{21}).$$

This short display of mathematics will illustrate the complexity of only relatively simple functional systems as they oc
cur in our social behavior.

Functional systems cannot be comprehended by intuition or thinking; they must be treated mathematically. And keeping in mind that life is of such an enormous complexity that our attempt to interpret technical structures in a social context might be somehow presumptuous. Nevertheless, we still try - perhaps to the annoyance of sociologists and psychologists who still might think that they know - nevertheless - better.

VIII. Viribus unitis

Introduction

This chapter is a further exercise in amalgamating concepts via our mathematical language - of some social phenomena, as formulated in daily language - into strictly defined natural laws. In contrast to the former chapters, three partners are now involved in establishing a proof of proverbial sayings. The focus is on three proverbs that indicate different patterns of social functioning:

a) *Viribus unitis:* Unity is strength.
b) *Frustra laborat qui omnibus placere stude:* He that would please all and himself, too, undertakes what he cannot do.
c) *Corruptio optimi pessima:* Corruption of the best is the worst.

A system based on three partners that are interacting with each other on the basis of their attitudes serves to explore the three proverbs. We want to find out how the three partners effect each other's goal attainment in their different behavior. The goals are of a mental character, of a non-measurable quantity, e.g., health, or contentedness, or some kind of satisfaction. The two basic forms of attitude are still the *hostile* and the *consentient*. That is to say that a partner has either an *aggressive* or a *reconciling* inclination in his behavior toward a partner. It is assumed that a hostile attitude toward each other not only results in damaging one partner's attainment - i.e., his well-being - but that hostility is *mutual* damage per se. This assumption becomes a verity if the goals of the system's partners are independent from each other, and *not* equal-minded (the latter is a result known from Chapter VII). The worst situation occurs if the partners' goals are antagonistic to one another (also already known from Chapter VII). Reconciling attitude results definitely in help for the one who receives a favor, but not necessarily for the one who is offering such a favor. It seems, as will be demonstrated, that it is more blessed to take than to give! Or: *it is more blessed to give than to receive* (the Acts 20/35) - *for the person who receives!* As the

goal attainments of the three partners are of irrational quality, the attainments cannot be added as it were the case if the undertakings were a product of common work endeavor.

Three patterns of social interaction are derived from one and the same social structure, Figure VIII-1. The structure consists of three partners, P_1, P_2, and P_3. The potential of goal attainment is formulated as a function of the willpower of the partners, G_1, G_2, G_3, the willpower they exert for the realization of their respective goal. All findings are depicted as graphs and will be discussed.

The detailed structure of the social individual with its interpretation can be found in the publication of Volume I.

In Figure VIII-1, the information u_i (i = 1, 2, 3) symbolizes the attempted goal, the ultimate aim of each partner. G_i stands for willpower, needed to realize the goal. F_i contains the needed time to act. S_{ii} stands for the unconscious realm of every partner. S_{ik} ($i \neq k$) describes the exchanged *attitude* information. This information is supposed to operate unconsciously between the partners. The x_i's are the momentary and ongoing achievements of goal realization; and R_i is the feedback-factor for every partner's goal control. Self-control is absolutely necessary if a system (or a partner) wants to have goal-control and to fight disturbances that might come from the external environment and penetrate into the threesome. These are statements all well known by now.

For a), i.e., for the proverb *viribus unitis*, the discovery is that aggressive (or hostile) behavior of partners is *advantageous* if they are aggressively disposed *and* if they have like-minded goals toward which they struggle, i.e., if each partner agrees that the two other partners have simultaneously the same orientation to reach their own goal u_i. Otherwise, if one partner *pretends* to be in accordance with them, but in his mind he intends, non-admittedly indeed, to damage his partners, then c) comes through: *corruption within the system.*

For b), the French saying *Qui est trop bon, est demi-fou* proves to be correct: To be lenient, i.e., to accommodate to more partners than one, is to the disadvantage of the submissive individual. In parallel, there is the English proverb: *He that would please all* (in our case two*) and himself, too, undertakes what he cannot do.* You can be good without much damage, but don't be too good.

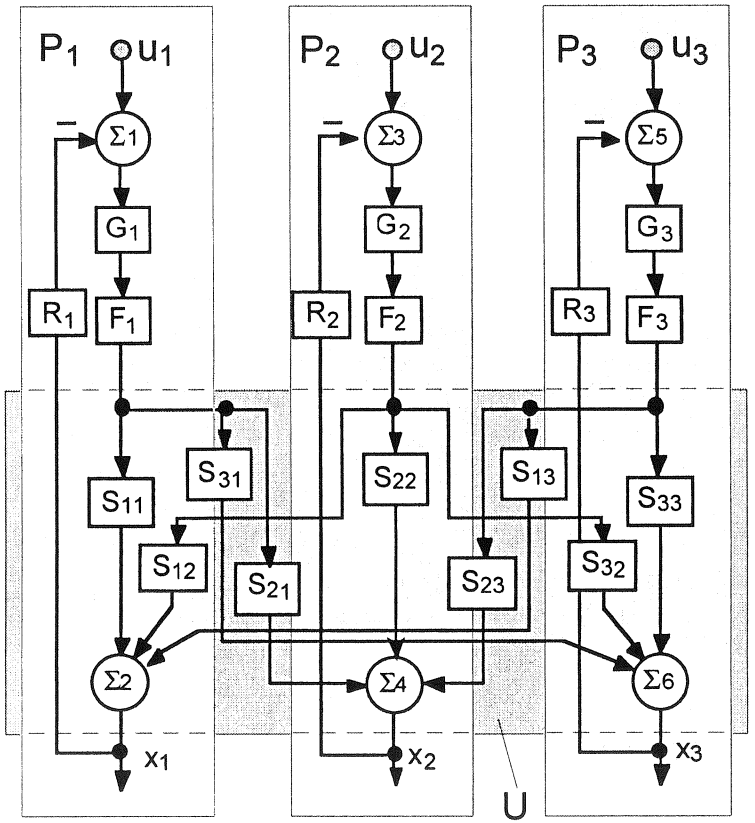


Figure VIII-1: The three-partner social system with unconscious interaction, U = unconscious.

And the c)-topic - *Corruptio optimi pessima* - indicates that if one partner of the three is corrupt, the damage is not only to both of the other two partners but as well to the corrupting one himself. The saying comes true: *He that flings dirt at another dirties himself most.* Corruption is defined as the opposite goal a partner has in mind than that of the other two partners. Another proverb says the same: *Ill be to him that does ill.* Being corrupt harms your own conscience via your unconscious. The Christian Hell might have been invented to symbolize such harm, namely to feel guilty by being burnt forever for earthly wrongdoing. The invention of hell must be very convenient for the clergy. Equally helpful for the clergy of the Roman Catholic Church is the purgatory from which a dead person can be bailed out.

As always on our track, each of the three partners is modeled as a self-reflecting circular continuous cause-effect-cause structure, a *stimulus-response model.* Self-reflection provides self-control, and thus, consciousness. Continuity requires that the factor of *time* must come into play. Everything moves continuously, as we already know, Heraklit said: *Panta rhei.* We know by now that it is not possible to think in terms of continuous functioning. Therefore such investigations have to be done with mathematical approaches, especially for systems of several partners. *What cannot be thought must be calculated.*

It is necessary to remember that a positive product of S_{ik} and S_{ki} between partner P_{ik} and partner P_{ki}, say between P_1 and P_2 as $S_{12} = +1$ and $S_{21} = +1$, forming the product $S_{12}S_{21} = +1$, results in mutual damage, called hostile relationship - if the partner's goals are not compatible and not like-minded. That is, if the goals are independent. A negative product, on the other hand, e.g., $S_{12} = +1$ and $S_{21} = -1$ as a product of $S_{12}S_{21} = -1$, results in consentient behavior and in partners´ help concerning their individual goal in mind.

The Proofs

In the following three graphs, the curves show steady state results of x_1, x_2, and x_3. A steady state is the attainment of the three partners in Figure VIII-1 after ample time has elapsed of the striving process toward the goals u_1, u_2, and u_3, after they have been set. A steady state position is the end-attainment. - All curves to be shown are a function of the partner's equal willpowers, G_1, G_2, and G_3, i.e., $G_1 = G_2 = G_3$.

It goes without saying that the attainments are zero when the willpowers are zero. If one doesn't do anything, one does not attain anything. *De nihilo nihil!* Nothing comes from nothing. All curves start at the zero point where $G_1 = G_2 = G_3 = 0$. And - generally - the greater the power one can exert for the own attainment, the closer one comes to the own goal. These are trivialities by now.

a) *Viribus unitis;* unity is strength.

In Figure VIII-2 two curves are depicted. The three goals, u_1, u_2, and u_3, are equally oriented that will say that in the model Figure VIII-1 each goal is set to +1 or to 100%. Therefore the three goals are equal for the computer's language. The curve, indicated as $x_1 = x_2 = x_3$, shows that each partner attains more than if they were in an autonomous state, i.e., if they would act as autonomous individuals. The curve denoted as x_1 is for P_1 as an autonomous individual, indicated as *single partner* P_1. An example: If $G_1 = G_2 = G_3 = 3$, $x_1 = x_2 = x_3 = 90\%$. If P_1 acts autonomously, x_1 is only 75% at $G_1 = 3$. The unconscious united togetherness creates for each one an increase of self-realization of 15%. As in this mode all S_{ik} and all S_{ki} are +1 (i, k = 1, 2, and 3), that is all attitudes are in an aggressive disposition, this is another sign that aggression can have a very positive meaning, namely being entrepreneurial in collectives and sticking to objectives.

A note to be mentioned: With $u_1 = u_2 = u_3 = +1$, and all unconscious

interactions negative, i.e., $S_{12} < 0$, $S_{21} < 0$, $S_{13} < 0$, $S_{31} < 0$, $S_{23} < 0$, $S_{32} < 0$, then the products $S_{ik}S_{ki}$ would also become positive - as it is the case with $S_{12} > 0$, $S_{21} > 0$, $S_{13} > 0$, $S_{31} > 0$, $S_{23} > 0$, $S_{32} > 0$, i.e., with partners being aggressive in their orientation. But all three x_i would become negatively infinite. Such a case is to be considered as being socially pathological. The system disintegrates. This situation is not further considered herein.

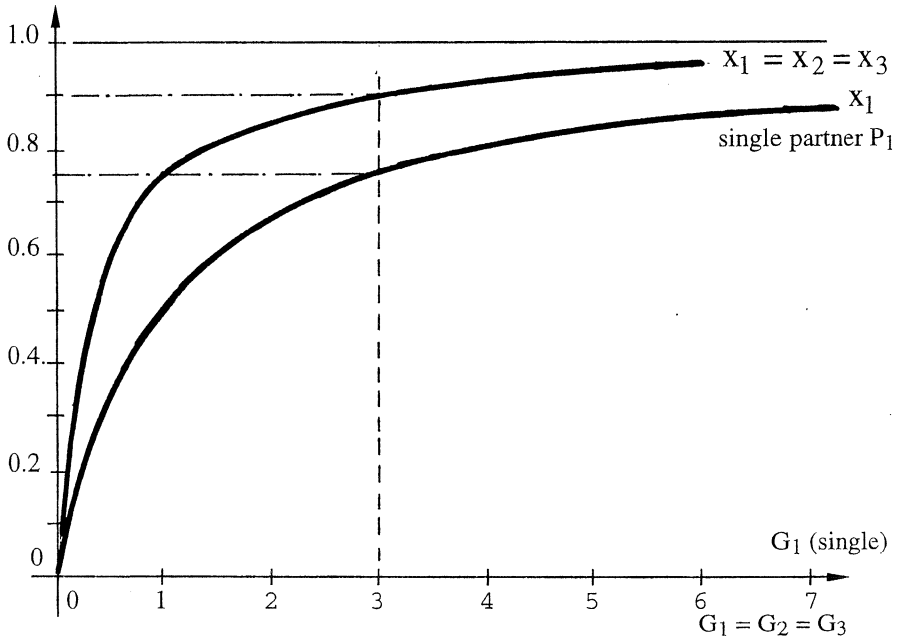


Figure VIII-2: Unison is strength.
$u_1 = u_2 = u_3 = +1$. All S_{ik} and all S_{ki} are +1 (i, k = 1, 2, and 3). All three attainments are larger than the single attainment x_i of an autonomous partner P_i. Cooperation with aggressive attitude but congruent goals results in positive accomplishment.

b) *Frustra laborat qui omnibus placere studet* - He that would please all and himself, too, undertakes what he cannot do.

Figure VIII-3 indicates the outcome. This case, which can be called the democratic situation, is the most intricate one. All three attainments, x_1, x_2 and x_3, are different. If the *negative attitude-sign*, that is the consentient attitude-sign, goes from right to left in Figure VIII-1, then P_1 takes (or gets) two negative signals. Due to the $-S_{12}$ from partner P_2 and $-S_{13}$ from partner P_3, P_1 becomes a *double altruist*. P_2 takes one negative signal, $-S_{23}$, from P_3 and one positive signal, $+S_{21}$, from P_1. He is a *single altruist* and a *single egoist* - so to speak. And P_3 gets only positive signals. He is the great, *double egoist*. Note that the three partners, P_1, P_2, and P_3, have all the same goal, $u_1 = u_2 = u_3$ and +1. As the goals are not the partners' self-realization, their goals are not independent, as it was the case in former chapters.

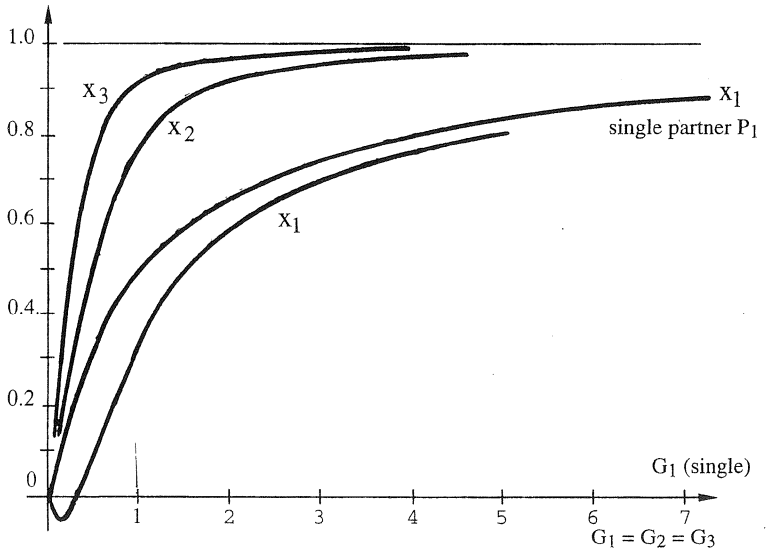


Figure VIII-3: Conciliation.
$u_1 = u_2 = u_3 = +1$. $S_{12} = S_{13} = S_{23} = -1$; $S_{21} = S_{31} = S_{32} = +1$. P_1 provides conciliation to both partners of the system, to P_2 and P_3. P_2 is conciliatory to one partner only, to P_3. P_2, on the other hand, has an aggressive disposition toward P_1, and P_3 is in an aggressive disposition to both of the other two individuals, to P_1 and P_2.

At this point it has to be mentioned again that accepting an attitude signal negatively creates a loop between two partners in the form of a negative feed-cross - if the other attitude signal is positive (e.g., if $S_{12} < 0$; $S_{21} > 0$). A negative feed-cross signal in interacting features has a variety of effects - contrary to a single loop where a negative feedback signal has predominantly a stabilizing effect, and a positive feedback signal destabilizes the loop.

Figure VIII-3 indicates that the double egoist P_3 with his x_3 gets the highest attainment; x_2 of P_2, the altruist-egoist-, achieves the next lower success; and P_1, the double altruist, with his x_1 gets less than if he were in an autonomous state (marked as *single partner P_1*). Exerting very low willpowers $G_1 = G_2 = G_3$, then P_1 even has a negative attainment - but not P_2 and P_3. Low willpower and in addition having the ethical inclination to submit oneself to two or more partners makes one dying away in the long run.

Democracies are not just advantageous for all of its constituents. The attainments x_2 and x_3 are larger than in the case a) of *viribus units*. In our democracy in our model two partners will gain, one loses. The proverb is appropriate in a slightly changed form: He that pleases two and thinks that he pleases himself too undertakes what he should not do. He damages himself to death if he is extremely weak ($0 < G_1 < 0.3$ and if G_1 and $G_3 \geq 0.3$). That means if you are really weak ($G_1 < 0.3$), don't give in! Think of Saint Matthew, 13/12*: For whosoever hath, to him shall be given, and he shall have more abundance; but whosoever hath not, from him shall be taken away even that he hath* - and he will die. Two examples in Table VIII-1 of this kind of situation show the tragedy of being too good. But to say: „don't give in!" is all in vain if you are weak in willpower. You will be forced to give in.

Table VIII-1 compares two cases where the three willpowers are not equal, but rater very different.

Case α) indicates clearly that the compliant and weak P_1 loses badly compared to the moderate egoistic P_2 (he submits to P_3), and

the very egoistic P_3. In case β), P_1 is strong and P_2 and P_3 are very weak but still egoistic in their attitude. The altruist, although in a much better willpower position, still suffers from the two weak egoists.

Table VIII-1: A weak and a strong *altruist* P_1 in comparison with two *egoistic* partners, P_2 and P_3. $u_1 = u_2 = u_3 = +1$ or 100%. $S_{12} = -1$, $S_{21} = +1$, $S_{13} = -1$, $S_{31} = +1$, $S_{23} = -1$, $S_{32} = +1$.

	G_1 Altruist	G_2 egoist-altruist	G_3 egoist	x_1%	x_2%	x_3%
α)	1	5	5	33	93	99
β)	5	1	1	81	93	98

If an altruist has to deal with egoists, he will lose even if he has a willpower that is multiple times stronger than the egoists´ willpower.

Egotism cannot be conquered. It has to be eliminated, killed! But an altruist will not kill, cannot kill. Therefore, there is no remedy for egoism! As willpower is the main quality for achieving one's goal, it can be said that even a person of utmost high qualities will lose when he has to deal with egomaniacs.

The Biblical saying in Acts 20/35: *It is more blessed to give than to receive* needs to be reversed, or it needs the additional remark - *for the one who receives*. Jesus could not know yet about loop-thinking. But, did he really say so, or were the words only attributed to him?

This comparison of the two situations Table VIII-1 indicates clearly that life-situations are extremely more complex than our day-to-day knowledge, our faiths, beliefs, and illusions describe them.

Even in a democracy the advice is: communicate in peace but look after yourself first. And if wealthy people assemble in a world conference in Johannesburg to talk about fighting poverty, such intention is a bitter absurdity. These people go home afterwards to put more in their pockets. If you tell them to fight their wealth instead, the response will be a big laugh at you.

c) *Corruptio optimi pessima;* corruption of the best is the worst.

We come to the simple Figure VIII-4: In this system, P_2 is corrupt. He pretends to make part of the game, i.e., to behave similarly as in system a) *Viribus unitis*, i.e., all S_{ik} are positive. But in his mind he keeps his goal u_2 negative, i.e., against the positive goals u_1 and u_3. He wants to damage P_1 and P_3. Indeed, he is corrupt; he has something else in mind other than his two partners´ welfare. Compared with system a) a damage to P_1 and P_3, occurs. They achieve only 1/3 compared with the feature *viribus unitis*. But the corrupting P_2´s damage is by far worse. Although x_2 in the computer model comes out as positive, as his goal u_2 is negative, he indeed achieves the opposite from what P_1 and P_3 do. His goal attainment with a negative u_2 and a positive x_2 results in $(x_2/-u_2) = -(x_2/u_2)$, i.e., a negative attainment. If P_1 and P_3 sense P_2´s attainment x_2 as being positive, but do not recognize P_2´s negative goal $-u_2$, they both trust the corrupt P_2 and unknowingly and take the consequential damage.

It is to be mentioned that the *speed of acting* in system b) is only half of the speed of systems a), and c). Consentient behavior, i.e., an *ideal democratic* system, is much slower acting than aggressive systems. This is the case in both situations, in honest goal-parallelism a), and in the situation of corruption c).

Hence, there are more situations than the three of a), b), and c) that can be derived from the structure Figure VIII-1. If, e.g., all three goals are positive ($u_1 = u_2 = u_3 = +1$) but P_2´s willpower G_2 is set to negative ($G_2 = -2$, $G_1 = G_3 = +2$) the attainments of P_1, P_2 and P_3 all become positive. This situation could no longer be called

corruption. P_2 would only be a terrible *freeloader*, damaging the two partners. See Table VIII-2, case γ), and compare with case α).

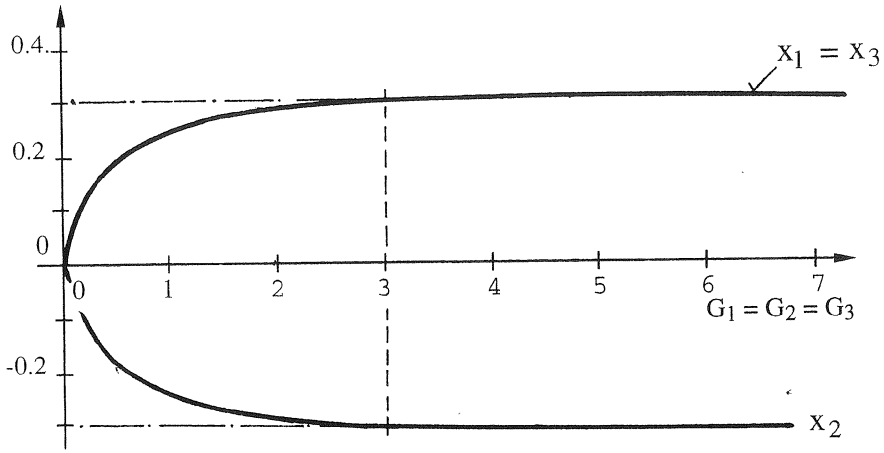


Figure VIII-4: Corruption.
All S_{ik} and all S_{ki} are +1 (i, k = 1, 2, and 3). $u_2 = -1$, $u_2 = u_3 = +1$.
P_2's goal u_2 is in opposition to what P_1 and P_3 are after.
As all S_{ik} and S_{ki} are positive, P_1 and P_3 feel that P_2 is unified with them. But, indeed, P_2 is corrupt; he is a liar, pretending to be in accord with P_1 and P_3.

Functional systems are complex, not only if they are merely of technical nature. In social contexts the complexity becomes grave and we are much less capable for investigating them. Their scrutiny demands labor, and the acceptance of their outcomes is not always easy. In daily life situations we are constrained by taking snapshots of living systems, i.e., static facts, unable to take into account the influence of long lasting time factors. In our investigations it also comes to light that in order to find the meaning of a sign, not only that sign (e.g. aggression), but also the whole system has to be taken into consideration.

Table VIII-2: ($u_1 = u_2 = u_3 = +1$).

	G_1	G_2	G_3	x_1%	x_2%	x_3%
α)	2	2	2	86	86	86
β)	2	0	2	80	80	80
γ)	2	-2	2	67	67	67
δ)	2	-3	2	50	50	50
ε)	2	-4	2	00	00	

Case α) is perfect unification. In case β), P_2 is a freeloader, a terrible idler. In cases γ) and δ), P_2 is a hypocritical crook. And in case ε), P_2 is a war criminal. He totally ruins the whole relationship including him.

The three proverbs used above in other languages and some parallel proverbs are:

a) For *viribus unitis:*
L´union fait la force (French)
Einigkeit macht stark (German)
L´unione fa la forza (Italian)

b) For *frustra laborat qui omnibus placere studet:*
He that all men will please shall never find ease.
On ne peut contenter tout le monde et son père.
Allen Leuten recht getan, ist eine Kunst, die niemand kann.
Non si può fare a modo di tutti.

c) For *corruptio optimi pessima:*
The biter will be bitten.
Who spits against the wind, it falls in his face.
He that flings dirt at another dirtieth himself most.
After your fling, watch for the sting.

Tel est pris qui croyait prendre.
Qui crache en l´air reçoit le crachat sur soi.
Wer andern eine Grube gräbt, fällt selbst hinein.
Wer einen Stein über sich wirft, dem fällt er leicht auf den Kopf.
Chi scava in su, lo sputo gli torna sul viso.

IX. The Quarrelsome Clerics Become United About the Heretic's Hair

Introduction

This essay describes the modeling of the sudden emotional change of a group of individuals from quarreling behavior amongst them to a unification of consent when a malicious pleasure is in sight for the belligerent group to destroy an antagonist. It is a common social encounter that a group of hostile people becomes united in their attitude to a temporary friendship when an outsider, an enemy, can become disparaged and eventually tortured or even killed.

The title's saying is a translation from the German medieval proverb *Die uneinigen Pfaffen werden eins über des Ketzers Haar.* The word *cleric* is manly used as a synonym. A similar saying is *Multitudo canum mors leporis,* many dogs are the rabbits death, when a weak group member or an outsider becomes declared as inadequate or being a foe.

Firstly, with no heretic yet, it is demonstrated how mutual hostility damages each other's self-realization when the group of clerics is *inimical* toward each other; and then how *consentient* group-behavior would render mutual improvement of their self-realization. The groups are increased from two to seven. Damage increases tremendously with the growing numbers of quarrelling group constituents, whereas improvement in friendship is only modestly augmented when the group grows. And this growing improvement is flattened out when the size of a group reaches about four.

The *second* step, the main part of the investigation, is the demonstration of the harming of an apostate. The group of clerics that go after the heretic is built up from one to seven. It comes to light that even an intelligent heretic becomes annihilated when a group of only two opponents tend to ruin his life.

A *third* point will be shown: When the time-functional behavior of the individuals is taken into account, i.e., the homeostasis, then it is revealed that in a state of hostility the willpower to act can and will be two to three times larger than in peaceful togetherness; and that the speed of acting in a hostile state is about twice the speed compared with a consentient collective. This very basic outcome between enmity and amity is already known from Volume I. In addition we will find the requirement that the clerics, after they killed the heretic in friendship, will - as a natural law - fall back into their former hostility; and they will stay there until they found the next heretic to go after.

When investigating the area within which a heretic-attacking system can homogeneously exist, it becomes clear that there are too many parameters in a group of operating people and thus, too many different possibilities of outcomes for predicting a direction through which any events can develop. This point is also well known by now to the reader of Volume I. Therefore, restrictions are necessary in order to make the investigation a mental profit.

Characteristics of hostility and of friendship are embedded in the unconscious in the form of attitudes that exist amongst individuals. The detailed model of the individual can be taken from Volume I, Chapter V and Appendix IV, although a short description is given in Chapter IV of this Volume II.

The Basic Concept

Figure IX-1 displays the structure of the group of one heretic H and two clerics, C_1 and C_2. Figure IX-2 depicts the total structure of the group of one heretic H and seven clerics, C_1 to C_7. Before the operation toward the heretic goes into operation, the clerics´ attitude-interaction is hostile, denoted as (+ +). Once the decision is made that the heretic has to be executed, all the clerics go into a consentient attitude interaction, designated as (+ -); but they all stay in an aggressive disposition, i.e., (+ +), toward the heretic.

Concerning the definitions of the two terms (+ +) and (+ -), see also Volume I, Chapters V-5, VII, and VIII.

As already done in former chapters, the dynamics of each individual is described with three differential equations in series in order to give the units a time dependent behavior. Thus, F_H, F_{C1} to F_{C7} are formed with equation (IX-1)

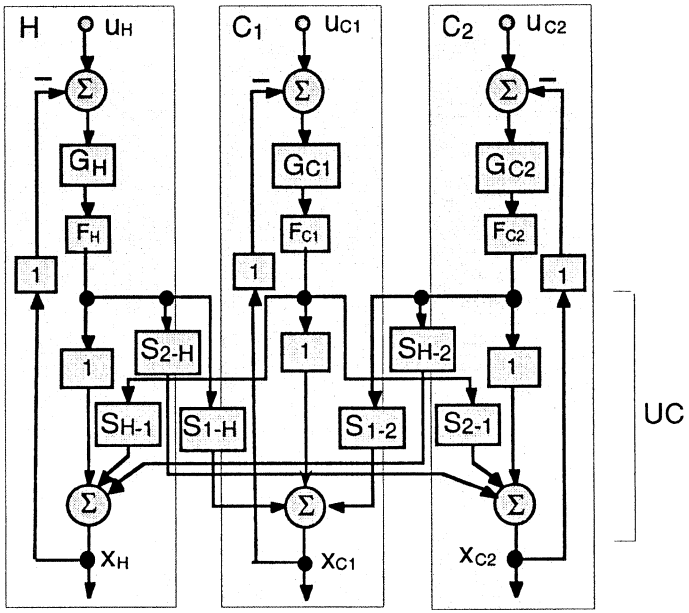


Figure IX-1: Structure of the heretic H and two clerics, C_1 and C_2. UC denotes the unconscious interaction.
Among the clerics there is friendship: $(S_{1\text{-}2})(S_{2\text{-}1}) = (+\ -) = -1$.
Between the heretic and the clerics there is hostility:
$(S_{H\text{-}1})(S_{1\text{-}H}) = (+\ +) = +1$; $(S_{H\text{-}2})(S_{2\text{-}H}) = (+\ +) = +1$.

$$F_H = F_{C1} = \ldots F_{C7} = \frac{1}{(Ts+1)^3} \qquad (IX\text{-}1)$$

Attitude - to be repeated - is considered to be information that is exchanged within a field that exists among beings. According to psychologists, unconscious information exchange is a multiple times stronger than conscious interaction. Unconscious interaction is necessary for a being's survival. The existence of a field within which unconscious information exchange happens is for the time being a hypothesis; it cannot be measured yet, but it is assumed that there is a *collective unconscious* within which such information can be exchanged among individuals.

Figure IX-2 shows the arrangement of the MATLAB-Simulink-Program with which the calculations were performed. This figure is depicted to give an impression of the complexity of the system: unavoidable, unconscious information exchange. This is the way we are interconnected.

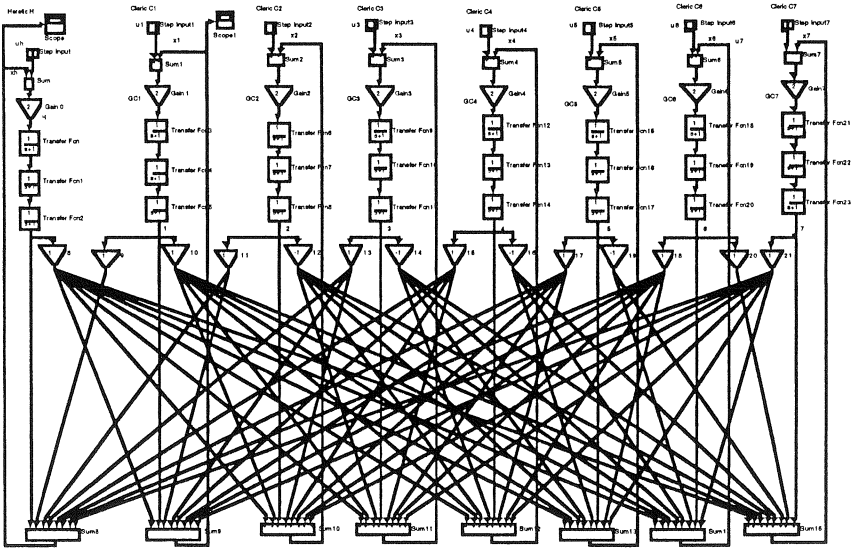


Figure IX-2. MATLAB-program of the model. The far left unit is the heretic H. On the right side of the heretic are the seven clerics, C_1 to C_7.

We know that there are two distinctive features necessary to describe a time functional system:

A) The steady state attainment. This is the end result of an event. At this end state the system remains operating and has to remain homeostatic. This state is called the steady state homeostasis.

B) The stable time-functional behavior, the dynamic homeostasis. Dynamic homeostasis is essential to remain capable of working toward goals, i.e., during the operation of an event until its end state is arrived.

The Steady State Attainments

Figure IX-3 illustrates steady state values or, what comes to the same, end values of the *first* part of our investigation. The investigation about the dynamic homeostasis follows further down when every unit is given the third order delay of equation (IX-1). A third order is the minimum order to make an autonomous unit socially in-homeostatic, unstable, so that it can run into incapability for reaching its goal u.

This first part of the steady state investigation, that is the state represented in Figure IX-3, is still without the heretic's existence. The clerics live within their own group-relationship. This is done to illustrate the difference of attainments in a *hostile cooperation* the clerics live in - *compared to* the attainments if they would live in consentient *cooperation*.

To begin with, as said, the clerics are in a hostile relationship. This is the state before they make the decision to go after the heretic's life. They fight each other for their individual purpose that generally is greed for the cleric's individual power within their ranking. The hostile relationship is denoted with interconnections by (+ +), i.e. all attitude transfer factors in Figure IX-2, or Figure IX-1 respectively, from $S_{i\text{-}k}$ to $S_{k\text{-}i}$, are +1; ($i \neq k$); i, k from 1 to 7.

For these calculations in Figure IX-3, the willpower G_H of the heretic is set to zero. Therefore he is nonexistent. His loop is open. There is no functioning, no life, in an open loop. - In the hostile relationship of the clerics, their goal attainment is regarded as x_C in % of u_C. In Figure IX-3 there is only the goal attainment for C_1 calculated, x_{C1}. This goal attainment x_{C1} illustrates the influence of hostile behavior that the cleric-partners C_2 to C_7 have on C_1. The influence is the greater the larger the number of partners is who are interrelated with C_1. This influence varies by increasing the number of clerics per group. First C_1 and C_2 form a relationship (n = 2); x_{C1} = 40%. Then, C_1, C_2 and C_3 (n = 3) are the next group, and so on up to C_7 (n = 7). The willpowers for all groups, G_{C1} to G_{C7}, are kept equal and 2. If C_1 is on his own, if he is autonomous, his goal attainment x_1/u_1 is $G_{C1}/(1+G_{C1})$ = 2/3 = 0.67, or x_{C1} = 67% as indicated in Figure IX-3.

It can be seen now how C_1´s attainment x_{C1} shrinks with an increasing number of group partners when he, C_1, and all partners of the group are involved in a hostile relationship with each other. If the lowest attainment for survival is assumed to be, say 25% of u_{C1}, then C_1 cannot survive if he is in conflict with more than 2 clerical enemies (n_C > 3). With 3 enemies (C_2, C_3, and C_4), x_{C1} is below 25% attainment. C_1 cannot fight more than 2 hostile partners, i.e., C_2 and C_3. - It has to be noted that the attitude factors +1 for hostility is very high. But hostility is known to be fierce - especially in irrational, religious contexts.

If the clerics would change from hostility to cooperative behavior, i.e., if they changed from a (+ +) relation to a (+ -) relation, curve (+ -) in the Figure IX-3 indicates how x_{C1} increased from 67% on up to about 80% when, again, the group would grow from C_1 on up to C_7. This is the amity-representation. But the increase, the help for C_1, is moderate compared to the damage, which occurs in the (+ +) relation. Up to three partners, C_2 to C_4, the curve shows some mutual help for each one in the group. With more partners in the row the increase stagnates at about 80%.

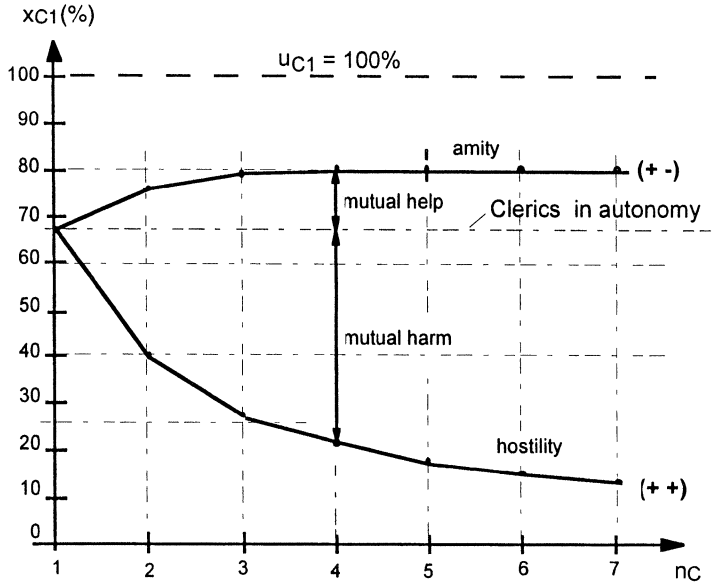


Figure IX-3: Self-realization x_{C1} of the cleric C_1 as a function of the size of the group (n_C) and of the two different group characteristics, hostility (+ +) and consensus (+ -). The goals for self-realization are not compatible. Therefore, when calculating x_{C1} in relation to u_{C1}, the other goals are set to zero: $u_{C1} = 1$, u_{C2} to $u_{C7} = 0$. $G_H = 0$, *no heretic yet involved.* G_{C1} to $G_{C7} = 2$. Steady state conditions.

The point to be made is that the realization of the clerics' goals would increase if they stayed in mutual agreement with each other. Not to forget: this curve is still without interaction with the heretic! The purpose of Figure IX-3 is to show the difference between *enmity* and *amity,* between hostility and friendship.

It is to be emphasized again at this point that the goal u_C of each unit is *independent* of the other goals, because the goals are the aim of realization of each partner. Individual realizations are incompatible. The influence of attitude on one partner is valid for all

the others in a group - with our symmetry of structure and parameters. Thus, the calculation has to be done for one partner only (for C_1) - if they all have equal magnitude of willpower - which is the case in Figure IX-3.

In the (+ +) situation the damage with increasing partners is such that the attainment of C_1 goes to zero with an ever-growing number of enemies in the group. In the (+ -) situation even a very large group of clerics does not help more than the help of about 3 partners ($n_C = 4$). This fact seems to be a *Natural Law.* There is little help in concord, but great damage in discord! The value for doing damage to a fellow citizen is described in the German saying: *Schadenfreude ist die reinste Freude*. Malicious pleasure is the paramount pleasure. Or, we might mention the Latin proverb from Sallust, 86-35 b. Ch.: *Concordia parvae res crescunt, discordia maximae dilabuntur.* Through concord small things grow, through discord the mightiest things decay. But as nature made its creations selfish and egoistic for assurance of its one survival, to do damage to the fellow citizen is great pleasure.

After this comparison of hostility and friendship, we go back to the real topic, to the second part.

Figure IX-4 demonstrates the devastating influence the unified clerics have in their hostile confrontation with the heretic. All the clerics exert a willpower of $G_C = 2$, whereas the willpower of the heretic G_H is variable. The number of clerics n_C changes from 0 to 4.

The goal attainment (the survival attainment) of the heretic is denoted as x_H in % of u_H. We look at the value of $G_H = 2$ in the figure. There the heretic has the attainment x_H of 67% with no cleric's attack ($n_C = 0$). The attainment x_H at $n_C = 0$ can be calculated with the steady state formula (IX-2) with $G_H = 2$.

$$x_H = \frac{G_H}{1+G_H} = \frac{2}{3} = 67\% \; (u_H = 100\%, \; n_{C=0}) \qquad \text{(IX-2)}$$

If the heretic's minimum survival is, say, 20% of his attempted self-realization u_H, then he cannot cope with more than one enemy-cleric. With $n_C = 1$, his x_h is 40%. If his willpower is twice the willpower of the clerics ($G_H = 4$), he can face two clerics. But even having 4 times the clerics willpower ($G_H = 8$), he cannot fight more than two clerics. Three inquisitors were no doubt enough to ruin Galileo Galilei. But the enormous power of the Pope Innocent III was enough to kill thousands of Non-Christians, called *heretics* by the Roman Catholic Church!

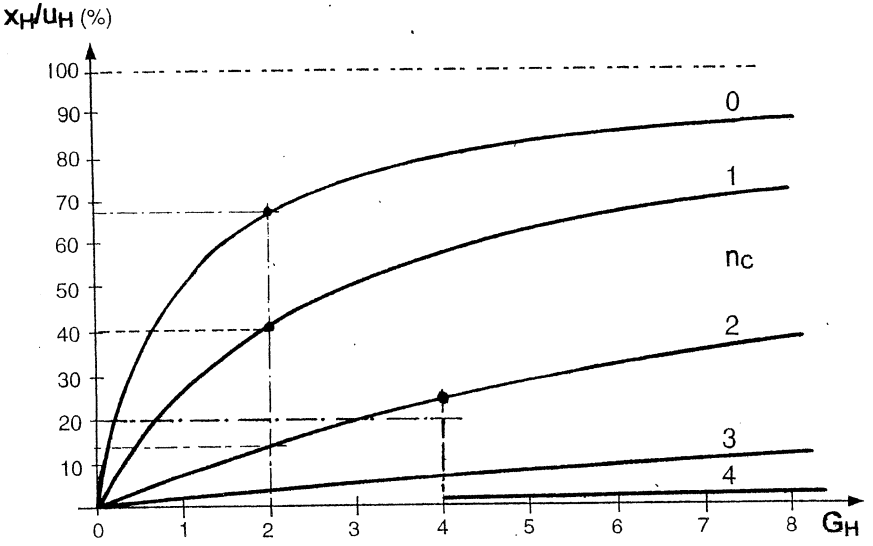


Figure IX-4: Self-realization of the heretic x_H/u_H as a function of his willpower G_H and with the number of attacking clerics $n_C = 0, 1, 2, 3,$ and 4 as a parameter. The willpower of the clerics is $G_C = 2$.

The general formula to calculate x_H/u_H is given with equation (IX-3) were n denotes the number of attacking clerics.

$$\frac{x_H}{u_H} = \frac{G_H}{1 + G_H + \sum_{k=1}^{n} 2^{k-1} \binom{n}{k} G_H^{\,k}}. \qquad \text{(IX-3)}$$

What are the clerics' goal attainments in killing the heretic? Figure IX-5 shows how they help each other in their (+ -)-coherence. All willpowers of the clerics are still $G_C = 2$. If there is no heretic around ($G_H = 0$), the attainment of one cleric is 67%; formula (IX-2) is valid. If this one goes to fight, a heretic with also a willpower of 2 ($G_H = 2$) they come even at 40% (compare with Figure IX-4!). The heretic can survive. With two clerics, the heretic needs a willpower of $G_H = 10$ to fight the two holy men. This can be seen in Figure IX-6 where curves from both Figures IX-4 and IX-5 are depicted for one and two clerics.

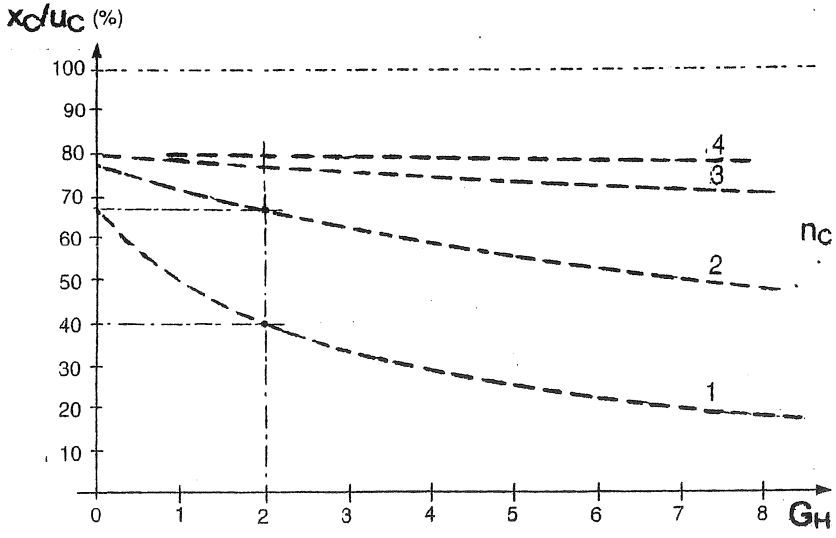


Figure IX-5: Goal attainments x_C/u_C of one to four clerics in the fight with one heretic. All G_C are 2.

The general formula to calculate the attainment of the clerics x_C/u_C in fighting the heretic is given with equation (IX-4):

$$\frac{x_H}{u_H} = \frac{\sum_{k=0}^{n} \binom{n-1}{k} 2^k \, G_H^{\,k+1}}{1 + G_h + \sum_{k=1}^{n} 2^{k-1} \binom{n}{k} G_H^{\,k}}; \quad \binom{k}{0} = 1, \binom{k}{k+1} = 0. \qquad \text{(IX-4)}$$

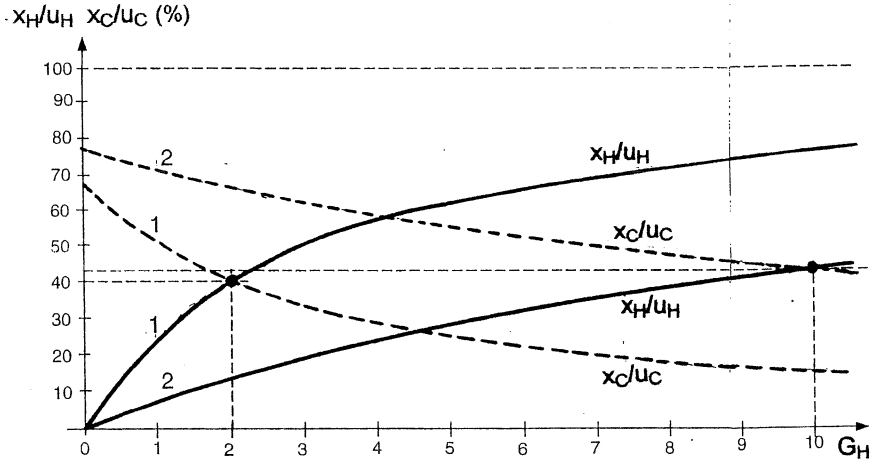


Figure IX-6: *Equi*-valence of the goal attainments of the clerics and the heretic.

To balance one cleric of $G_C = 2$, the heretic needs also a willpower of $G_H = 2$. To balance two clerics, the heretic needs a willpower of 10, and to fight three clerics, the necessary willpower of the heretic would have to be 50. With an utopian willpower of 250 the heretic then could fight 4 clerics. Very generally the clerics have more willpower at their disposal and therefore can exert more willpower to go after a heretic than the heretic has willpower to fight ordained clergymen. Making a simple assumption that willpower is equal to intelligence, then even to stupid clerics (G_C =

2) can kill a heretic of an intelligence that is four times ($G_H < 10$) that of one of the clerics. But in irrational circumstances, intelligence does not count!

The Dynamics of the Coalition

An important repetition: Time needed to act cannot be eliminated, because the transfer of information as well as any action of social entities need time to perform. This is a point to be considered, but it is also a point that cannot be grasped by thinking. Time functional behavior has to be calculated. The other point of importance is the homeostasis of the units in connection with their interaction within the whole system. As a system can lose homeostasis if its constituents exert too much willpower, the limits of willpower have to be determined in order to guarantee success in the goal approach. Homeostasis in biology is equivalent to stability in the technical realm. For example, it is possible, although not very probable, that the clerics run into such a feud among themselves that they cannot agree to unify into a consensus in order to go after a heretic. They then disintegrate and disrupt perhaps even their hostile relationship.

Figure IX-7 depicts some stability limits (limits of homeostasis) for systems of the heretic in the struggle with 1 to 4 clerics. As previously mentioned, each system's constituent is given a third order linear differential equation for his time behavior. The third order is the lowest order a unit in autonomy can run into instability. Therefore it is convenient to take the third order as a critical arrangement. The ordinates in Figure IX-7 are the willpower of the heretic G_H and the equal willpowers of the clerics G_C that they exert. The picture shows that not only the clerics must keep back with their willpower if the system is to remain in stable operation for attaining its goals, but also the heretic. As time behavior cannot be mentally visualized, it is difficult to accept such facts, whereas in the technical field, such a concept is basic.

With 1 cleric and the heretic, the limit is a straight line. G_C is G_{C1}. This is the stability limit of the symmetric system of hostility of two partners, well known from Volume I, Chapter V-2, Figure V-3. In a conspiracy of 4 clerics and the heretic, the clerics have to remain within a willpower of $G_C = 1.4$ as a maximum. G_C is: $G_{C1} = G_{C2} = G_{C3} = G_{C4}$. But the other way around: the four clerics do not need a willpower larger than 1.4 to go after the heretic! Nota bene: equal dynamics of all constituents. (If the heretic could faster acting than the clerics, he could exert a higher willpower - and live a little bit longer!)

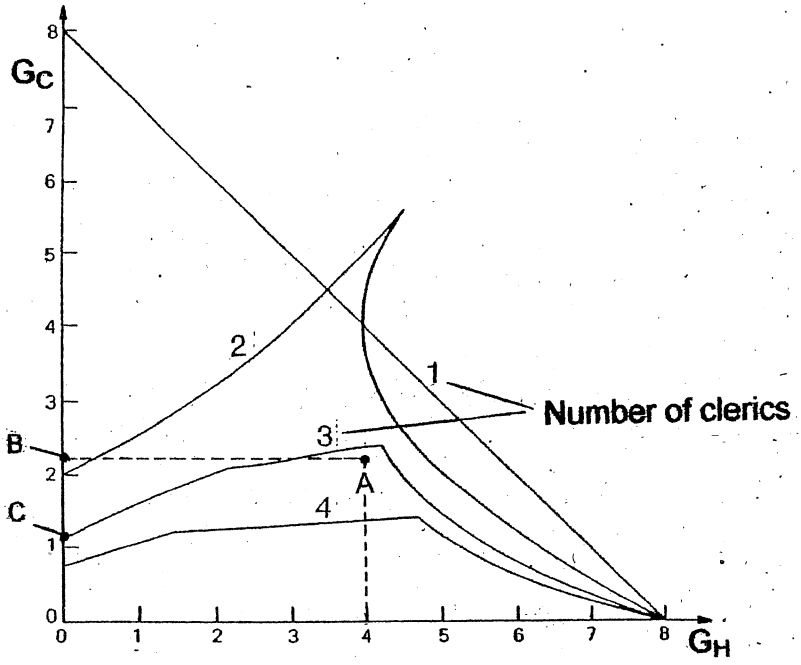


Figure IX-7: Limits of stability for systems of 1 to 4 clerics with the heretic in interrelation. Clerics and heretic have equal dynamics, according to formula (IX-1).

Let's look at point A in Figure IX-7. $G_H = 4$, $G_{C1} = G_{C2} = G_{C3} = 2.3$. Three clerics in their consentient state kill the heretic. This can be seen in Figure IX-4. After the kill is accomplished, after the witch was burned at the stake, then in our system's language G_H is zero. But with $G_C = 2.3$ (point B) the system of three clerics in friendship is unstable. G_{Cmax} is 1.2 only (point C). The clerics *have to* and *will* turn back into their state of hostility where $G_{Cmax} = 2.65$ - and prepare for the next heretic to be killed. (To verify the point $G_{Cmax} = 2.65$, see Chapter X, Figure X-7, curve (+ +)1, n = 3.)

It's a natural law that hostility, and therefore inquisitions with the intention to globalize their aggressive institutions, will continue to eliminate and kill the weaker party. To pray for peace on earth is hypocritically naive. What did the Christian Lord say in St. Matthew 10/34: Think not that I am come to send peace on earth: I came not to send peace, but a sword. The next chapter, Chapter X, underlines this terrible „eternal" truth. (Mind out! Matthew copied Mark, and Mark lived a generation after Jesus, and Jesus did not write down what he said.)

For the last case we ask whether the heretic can survive if he is faster, i.e., mentally more flexible, than the clerics. F_H (Figure IX-1) shall get one delay element that is faster then the other two of his behavioral characteristics. The arrangement is like formula (IX-5):

$$F_H = \frac{1}{(s+1)^2\left(\frac{1}{10}s+1\right)}; \quad F_{C1} = \ldots F_{C4} = \frac{1}{(s+1)^3} \qquad (IX-5)$$

The dynamics of the clerics, F_{C1} to F_{C4}, remain unchanged.

Figure IX-8 depicts the fact where the heretic is much faster now, i.e., more intelligent. The maximum G_H in his autonomy increases from 8 in Figure IX-7 to over 24 in Figure IX-8. But the willpowers of the clerics can also be somewhat higher.

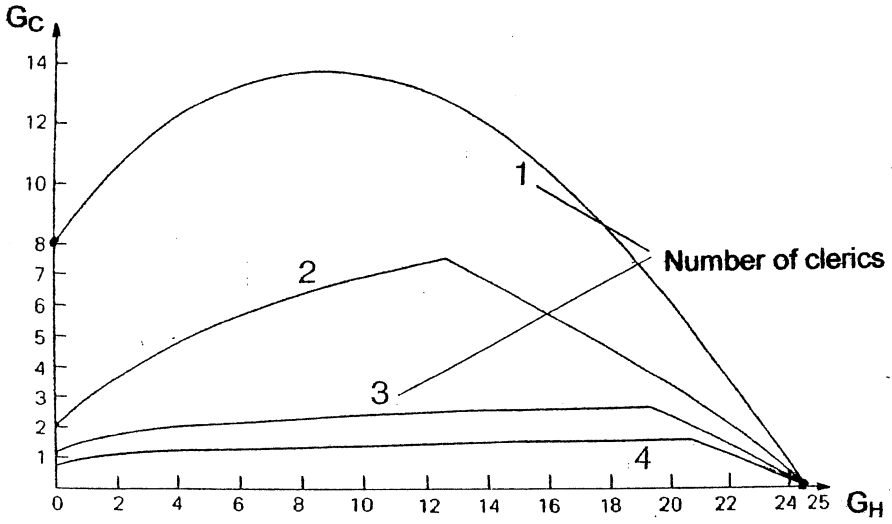


Figure IX-8: Limits of stability for systems of 1 to 4 clerics with the heretic in interrelation. Clerics have the same dynamics as in Figure IX-7, but the heretic is made faster acting according to formula (IX-5).

It is easy now for the heretic to cope with one cleric. But what happens if two clerics run after him? We look at two sets of data (two points in Figure IX-8) and calculate the attainments of the heretic (x_H) and of the two clerics ($x_{C1} = x_{C2}$):

a) $G_H = 12$, $G_{C1} = G_{C2} = 6.5$; $x_H = 11\%$, x_C (i.e., $x_{C1} = x_{C2}$) = 82%. The heretic's life ends at the stake with our assumption that 20% of u_H are needed for his survival.

b) $G_H = 20$, $G_{C1} = G_{C2} = 2.0$; $x_H = 60\%$, $x_C = 30\%$. This situation could be a chance for the heretic. But it cannot be assumed that two clerics of such a low willpower of 2.0 would attack a heretic with a willpower of 20. The two clerics would ask for help

because they have the word from their God that the heretic has to be killed! See Psalm 2/8-9: *....and I shall give thee the heathen for thine inheritance and the uttermost parts of the earth for thy possession. Thou shalt break them with a rod of iron; thou shalt dash them in pieces like a potter's vessel.*

Therefore, the heretic will made passing away!

X. Nature Favors Aggression

Introduction

In this final chapter we want to emphasize once more the very fact that the hostile behavior is considerably more attractive than the consentient one. This is the case not only for a broad mass of the population but for the individual person as well. The average individual is rather disinterested for broad peace - as long as he himself is safe. In this analysis the term *collective unconscious* is in the foreground because this social characteristic - enthusiasm for hostility - is embedded in the ubiquitous unconscious, in the *reptile brain* of man, once programmed by nature.

Our biological world is composed of interacting entities. It is this interaction that determines the social characteristics of our behavior, rather than merely the individual entities in their daily physical side-by-side existence. The opinion that a person's freedom ends where the other person's freedom begins has to be corrected by the fact that there is no borderline of freedom for a person. The areas of existence interlock. There is the collective unconscious that makes us a huge social pie of an unavoidable conflicting togetherness. Peace is rather a fictitious word.

A biological *entity* - as we defined it - has *one* ultimate *goal*, its self-realization in its survival. Despite this fact, nature does not need the single being to exist; nature produces new life relentlessly in enormous abundance. This categorical imperative of survival and the uselessness of the specific individual is a discrepancy that is difficult for our limited mind to understand and to accept.

We know that in our outlay a one-goal entity can consist of one individual, it can mean several individuals forming a one-goal-system of sub-entities, or it can even be a full nation with the goal of the survival of its population.

The aim of our endeavor is to illustrate that on the basis of natural laws that there is no cure and no remedy to substitute hostility with friendship. Crowds of up to eight units (we are replacing the word unit with partner) are taken into consideration for our model. Part of this chapter can already be found in Chapter VIII (Multi-Partner Systems) of Volume I. In the summary here we extend the concept of hostility and conciliation in two regards:

a) Different densities of communication, i.e., bilateral and multilateral interaction;
b) Different densities of multilateral interaction.

Characteristics of a system of two partners were demonstrated in former chapters for both, hostility and amity. In this tract here we interconnect, in a larger row, partners of equal autonomous characteristics. It will be demonstrated that the domain of willpower of hostile systems to exist is a multiple compared to the domain of willpower of consentient systems. Thus, the probability of hostile dominance over consentient behavior is extreme on our planet. *Mars gravior sub pace latet;* a devastating war lies hidden under peace.

The requirement for survival is the assurance that social systems be homeostatic. They have to show continuing, stable operations. Homeostasis is a necessity for a goal-oriented behavior. It will be found that hostility is much better stable, even stubbornly stable compared to systems in consent. A consentient system is rather sensitively endangered in its stable state. Hostility is rigid.

We confirm mathematically the social-ethical verity: Consentient behavior demands repression and restraint, in the face of which, of course, the unconscious feeling for autonomous will-power will not be satisfied.

It becomes clear that verbal sayings and descriptions, how sophisticated they might be, are too simple to encounter social situations in their immense complexity and diversity. The common

desire for peace is no doubt peace for oneself - in order to avoid being killed. But as a Latin saying conveys: *Si vis pacem, para bellum*. If you want to have peace, prepare for war - because each living being has to live within an entanglement of hostile partners - or other hostile creatures.

This chapter intends to explain that the probability of establishing peace on earth through a new world order, i.e., through an endeavor to overcome aggression and hostility and being replaced by global agreement and peace is a contradiction to a Universal Law. Peace on earth is rather a pipe dream - of the UN.

Our model of only two parties (as, e.g., two persons in a marriage, two religions, two nations) already shows the many attractions that mutual aggression offers to the media compared to conciliation, to friendship. This fact will be emphasized with systems consisting of more than two partners.

But social congregations in consent have also their advantages, but, as we will see, it requires blessed behavior of their constituents with long-term patience. And there is the danger of becoming annihilated by penetrating disturbing information into its delicate structure.

Nature indiscriminately enforces the reproduction of its species (the urge for reproduction is insatiable) - and it lets die indiscriminately as well. Maintaining a species requires making the stronger, the more capable survive. It is in aggressive confrontation where the stronger wins and lives on.

Multi-Goal Systems

A row of four units in unconscious cooperation within its collective unconscious is depicted with Figure X-1.

To illustrate the intricacy of a system of eight units, a merely symbolic structure is depicted with Figure X-2. If two more interactions are added, e.g., *talking* and *mutual observation,* a structure like Figure X-3 evolves. In Figure X-2, 16,072 circuits of information flow can be traced. Eight circuits result from the eight partners when they have no interaction at all, i.e., when they are in an autonomous state. The remaining circuits, namely 16,064, are created due to unconscious communication.

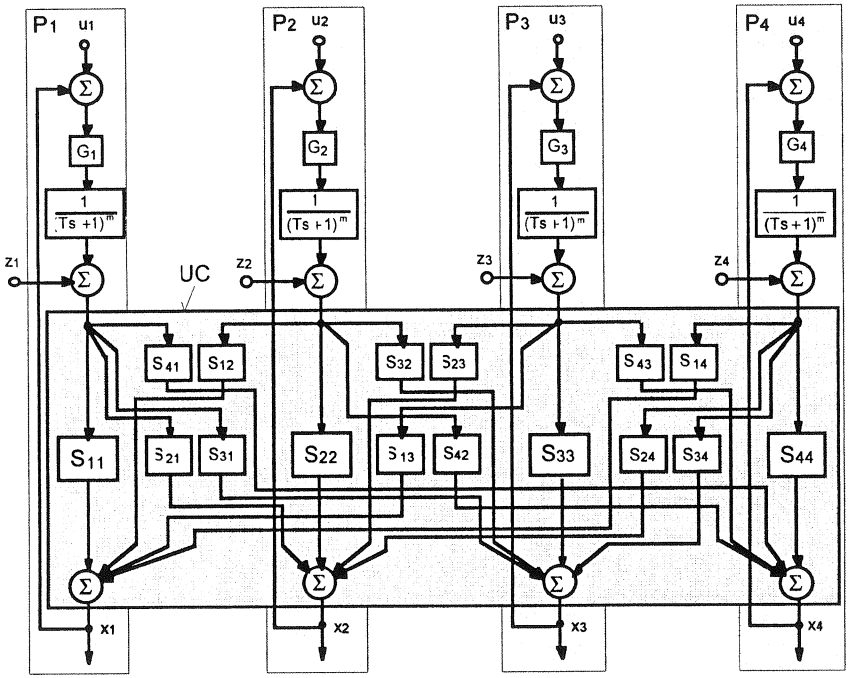


Figure X-1: Four units in multilateral attitude communication. In $\frac{1}{(Ts+1)^m}$, m= 2 means high agility,m = 3 means low agility of the autonomous individual.

Almost unbelievable is the number of possible circuits of information flow in Figure X-3 where there are eight partners: 18,985,066,966,272. Fortunately we cannot sense, see and hear consciously what happens among us. But all the consequences are there. And we do not know, cannot know, never will know!

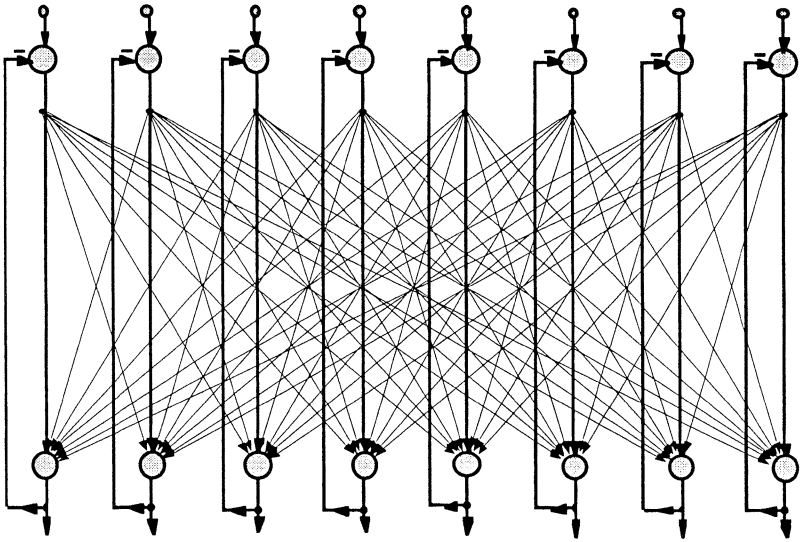


Figure X-2: Schematic arrangement of 8 units with multilateral attitude information exchange (unconscious interaction).

The symbolic structure for only bilateral unconscious interaction is indicated with Figure X-4. The number of interacting functional circuits shrinks from Figure X-2 to Figure X-4 from 16,072 down to 15. But as unconscious interaction is a collective matter, the question can be asked whether the simple Figure X-4 is domineering or whether Figure X-2 has to be considered as rather normal. Or, as unconscious communication cannot be avoided, Figure X-3 with its possible number of circuits of 18,985,066,966,272 might even be closer to reality.

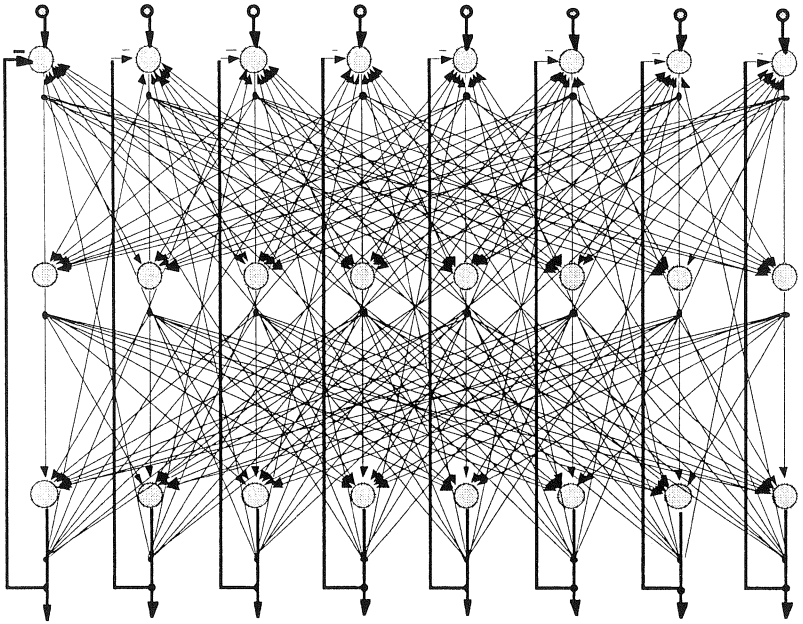


Figure X-3: Symbolic bilateral triple-communication, attitude, mutual observation, and direct physical interaction (physical interaction, e.g., in the form of discussing).

We must admit or at least have a presentiment that life is immensely more complex than we can perceive with our five senses in connection with our limited brain capacity - even considering all available knowledge ever accumulated.

A series of graphs illustrates now the continuous decline of power, swiftness (velocity, agility), and goal attainments if more and more units are hinged together to social conglomerates.

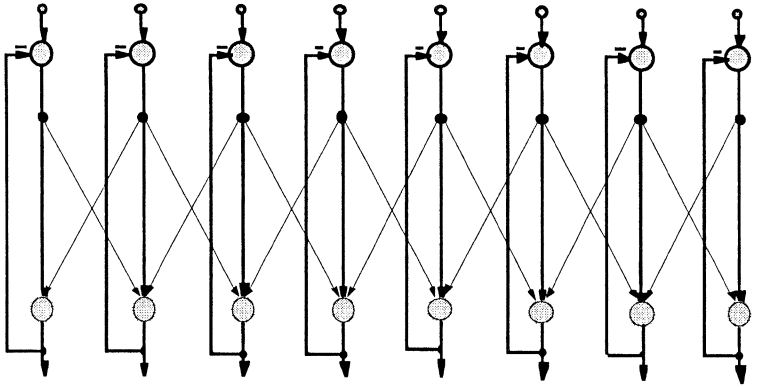


Figure X-4: Bilateral unconscious, i.e., attitude interaction. This Figure X-4 is paralleling Figure X-2.

Figure X-5 depicts the maximum willpower G_i, and Figure X-6 shows the maximum allowable speed of action V_C, both for systems of compliant interaction at their stability limit, i.e., at the limit of homeostasis. The factor of exchanged attitude information (+ -) is -1. One set of systems is for m = 2, that is for fast acting systems (2 delay elements of first order in series), the other set is for m = 3, this is for systems of lower agility (3 delay elements of first order in series). All willpowers are equal for a certain number n of units. There are two sets of curves, one for bilaterally, one for multilaterally communication. The structure for bilateral systems in its principle is shown with Figure X-4. The structure for multilateral communication is indicated with Figure X-2. We come to the very meaningful conclusion:

The larger a system of monotonously accumulated units is, the less the executed willpower of the individual unit can be with which he can realize his goal, and the slower the whole system works toward all of its individual goals. This is a *Universal Natural Law*. In the reduction of the speed of acting, of agility, the term entropy appears. Interaction consumes energy, energy for life, for survival!

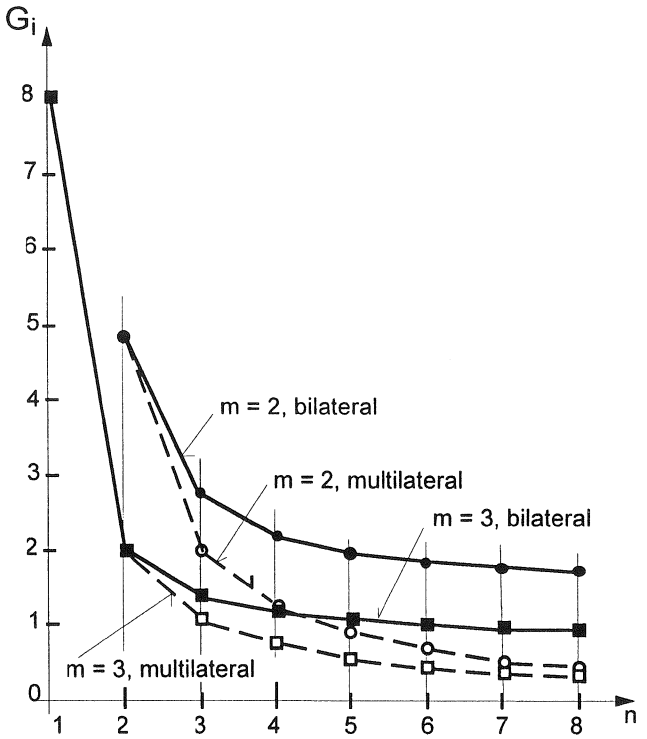


Figure X-5: Maximum willpower G_i in every unit of number n units constituting the system. Compliant interaction, (+ -); for structures of Figures X-2 (multilateral) and X-4 (bilateral); $|S_{ik}| = |S_{ki}| = 1$; m = 2: high agility; m = 3: low agility.

The decline concerning willpower and speed of acting is threefold, namely

a) the larger the umber of interacting units is (n)
b) the higher the density of communication among the units is (bilateral - multilateral) and
c) the higher the agility of the units is (low agility - high agility).

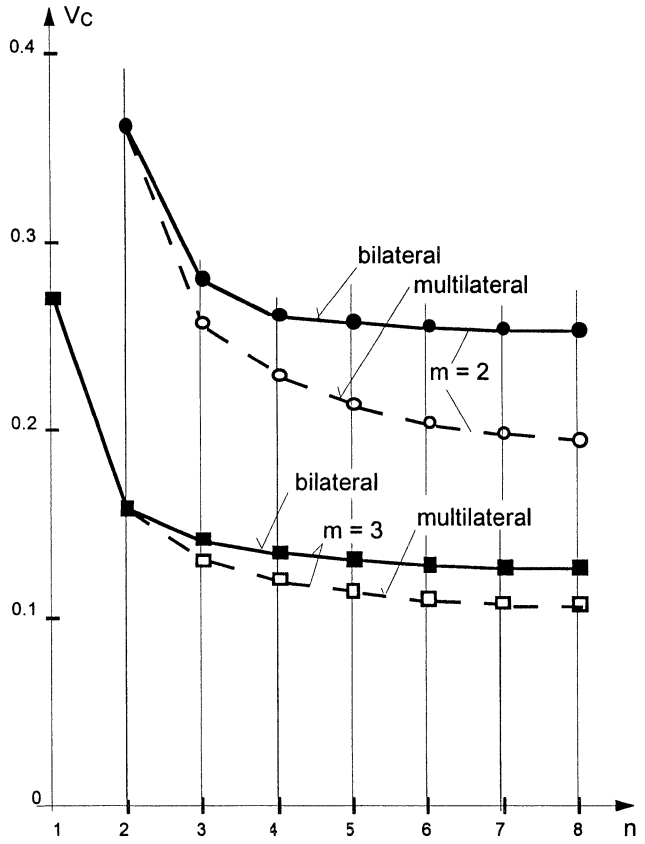


Figure X-6: Maximum velocity V_C per system of n units of compliant systems, (+ -); for Figures X-2 and X-4.

Figure X-7 illustrates the decline of maximum willpower with different magnitudes of multilateral attitude interaction. Systems are again at their stability limit. For consentient systems, the magnitudes are $|S_{ik}| = |S_{ki}| = 0.5$, 1 and 2; i.e., $S_{ik} > 0$, $S_{ki} < 0$; on all

figures, this is indicated as (+ -)0.5, (+ -)1, and (+ -)2. For hostile systems, the factors are $S_{ik} = S_{ki} = +0.5$, and +1, indicated as (+ +)0.5 and (+ +)1. For all systems, m = 3, i.e., for units of high agility. Systems with (+ +)2 do not oscillate anymore and their goal attainments become negative already with only small willpowers G_C, i.e., at $G_C > 1/3$.

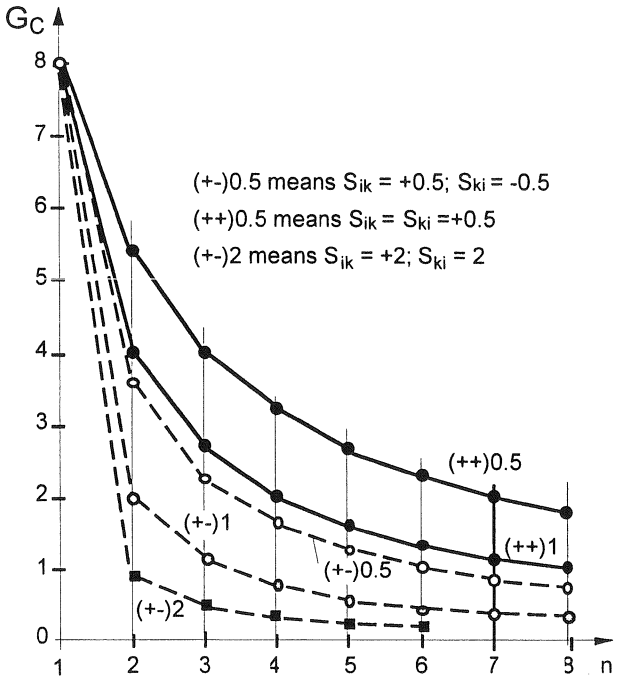


Figure X-7: Maximum willpower G_C for compliant (+ -)- and hostile (+ +)-systems; multilateral attitude interaction.

With the number of partners growing large, the willpowers finally become zero. The stronger the interaction, the smaller the willpowers can be. It has to be noted: in hostile systems the powers are about twice as large as in consentient systems!

Hostility is powerful. The decline indicates again that entropy is at work.

Extremely illustrative is Figure X-8, the speed of dynamic or emotional behavior, when comparing consentient systems, (+ -), with hostile systems, (+ +).

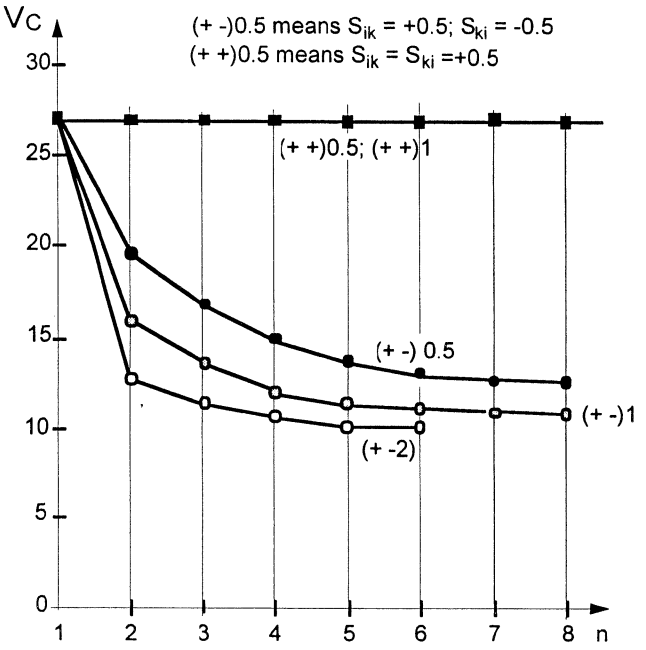


Figure X-8: Maximum velocity of behavior for compliant (+ -)- and hostile (+ +)-systems; m = 3; multilateral attitude interaction.

In compliant systems (+ -), the speed of action decreases with increasing numbers n of units involved. The more interaction, the further the systems slow down in their agility, but the speed of action does *not* go to zero if n goes to ∞. This feature was already

brought to light in Figure X-6. In hostile systems (+ +), the speed of action remains *constant* and even at the high level of the single unit and *independent* on the amount of aggression, and *independent* on the number of units involved! Hostility is always fast in its acting, in emotional reacting!

Figure X-9 demonstrates the attainments. Again, the more cooperation - whether compliant or hostile - and the stronger the involvement, the less is the output, the goal attainment x_i/u_i. It is worth to compare the two systems (+ -)1 and (+ +)1. The attainment of compliance is by far greater than that of hostility. This is the advantage, the only advantage, of consentient systems: Higher success in the long term - but low in power and low in speed in reaching the success.

The larger a system of monotonous accumulation of goal oriented people or partners is, less profitable it will be, because internal information exchanges consume energy, and from the social aspect also time and money.

With large n, the goal attainments become zero (Figure X-9), but *not* the acting speed of the systems (Figure X-8). Such a situation can transfigured to be interpreted as: Labor unions want workers to be paid for their presence at the workplace and they do not care for the workers´ speed of action, and not for the workers´ productivity which is, indeed, the organizations´ survival!

The fact that speed of acting does not go to zero, but attainments do so with growing agglomerations, might be symbolized with the Latin saying: *strenua inertia* - strenuous standing by and doing nothing.

The final figure, Figure X-10, depicts the sensitivity of compliant and hostile systems as a reaction upon entering disturbances z_i. The effect of the disturbance is denoted as x_i/z_i.

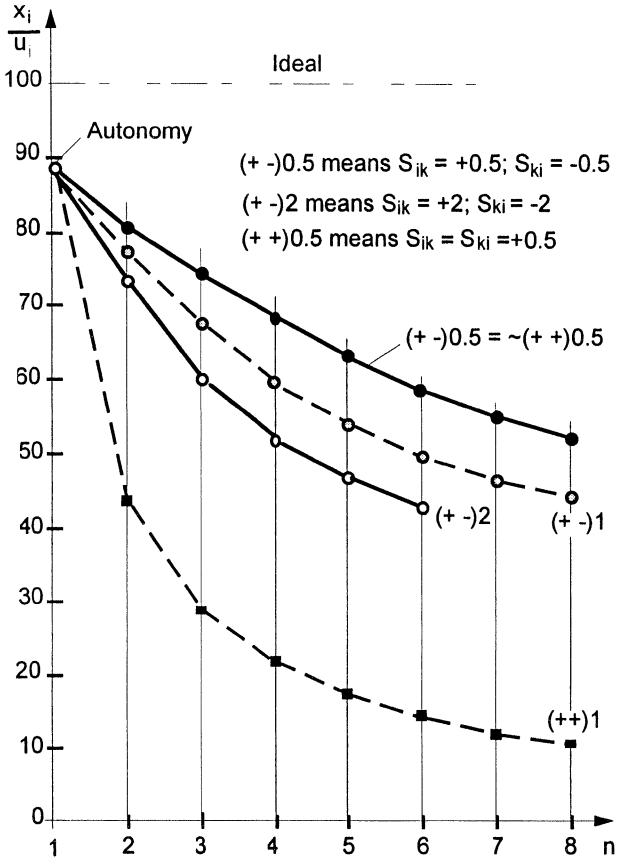


Figure X-9: Goal attainments x_i/u_i in % for compliant (+ -)- and hostile (+ +)-systems; multilateral attitude interaction.

Aggressive systems are considerably less sensitive upon disturbances than compliant systems. For severe hostility, (+ +) = 1, the effect of disturbances remains small and *independent* of the number of hostile subsystems involved. Compliant systems are

comparatively highly sensitive, and they are the more sensitive the stronger the compliance is.

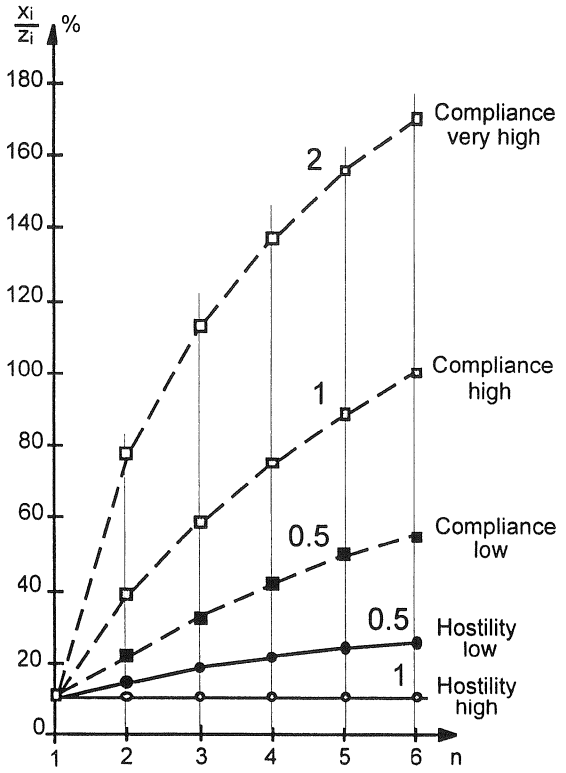


Figure X-10: Receptivity of disturbances, z_i/u_i in % for compliant (+ -)- and hostile (+ +)-systems; multilateral attitude interaction.

The more hostile a system is, less receptive it is to interventions! Peace establishing institutions try in vain to consolidate the world into a form of general agreement! *Nature favors hostility, instant speed and great power.* The awarding of the Nobel peace price is a laudable event and pleasant venture with the illusive motive that

there were a possibility to establish peace on our planet. There is an old saying: *Deos fortioribus adesse:* the gods are said to aid the stronger! And in hostility people are twice as strong as in consent.

Some Closing Comments

At all times people are longing for peace and happiness for themselves and for their immediate environment. As a fully illusory dream, some are even praying for peace for the entire world, so, e.g., the Popes and St. Luke 2/14: *.....and on earth peace, good will toward men.* And time and again, all longing was in vain, and all prayers remained unanswered. Why is that so? We found an axiomatic truth that says: *Nature favors aggression.* Our investigation shows that at the very instant of action, hostility is strong in power and fast, but it ends in tremendous detriment. Peace, on the other hand, is weak in power and slow in vitality at the very instant; but in the long run it renders advantage. The weak and slow being therefore becomes the social victim; he is the aggressor's prey. These were the findings all along on our way. In nature, competition for survival is always linked to power and speed, never to feebleness and slowness. And there is daily evidence that the appeal to the public is foremost the interest in power games, in fights, in shooting and wars - wars, as long as they happen on the other side of the fence!

These days we certainly recognize that the deeper the world is penetrated, the closer it becomes obvious that it is functioning by natural laws. But although such laws might sound concise, simple and self-evident by expressing them with our wordy language - as e.g., power and speed -, the deep secrets under which these laws work is not accessible by pure reflection and intuition. Some laws revealed themselves for us after lengthy studying of time-functional closed loops. However, such time-dimensional functioning is not accessible by thinking alone. Everything is tied to time, and time-functional interacting life requires mathematical help for its investigation and comprehension.

The simple example of the throw of a stone at the beginning of the book emphasizes time-functional thinking. The usual statement is that a stone thrown in the air goes up, makes an arc, and comes back to the ground. But it is the natural law in mathematical terms

with which the time-functioning trace of the stone can be determined. The intrinsic truth of the flight path - going up, arching, and coming down - can only be described and understood with very accurate methods of physical laws in connection with mathematical description - although the explanation in words is sufficiently true for daily use. But as soon as we looked more seriously at this phenomenon, we became somehow dumbfounded and flabbergasted. Our applied knowledge is still insufficient for accurately describing the facts. The stone on its path is surrounded by innumerable influences. This simple event is already insurmountably complex for a very precise description. The turbulent, variously shaped environment makes our view of a simple geometric parabola inaccurate. Tremendously more variously shaped is our social environment.

When it comes to human interactions, the complexity skyrockets. Our humble trial to indicate the time-functional movement of the social intricacy of amity and enmity together with some applications already became such a burden that we prefer to turn back to the common way of trial and error, of war and hope for peace - as we always did - over thousands of years. - Our brain has to function the way it is built: perceiving complex things in packages of simplified symbols. Our cranium cannot do much better without additional hard labor. The multi-formation on earth is such that our brain is - it seems - just too limited and too short-lived. And it is this way of symbolic aggregations that we are handling social, psychological, political and religious matters.

One might pose the question whether a meticulous knowledge to understand our behavior in terms of time-functional loop-behavior is necessary and needed at all? Nature in its evolutionary miracle provides us with the capability to survive within our environment without any accurate knowledge of physics and mathematics

a) if we can feed ourselves,
b) if we are able to defend our territory and keep intruders out or kill them, and

c) if we can reproduce ourselves in abundance.

That means, if we can obey nature's continuous, and immediate demands, we don't need any reflecting what so ever. But the answer to the posed question comes close to *yes*. We need more and deeper knowledge in fulfilling the requirements a) to c). The progressively increasing interrelationships of all beings on the globe become more and more entangled so that we run slowly into self-destruction if we continue to live in the illusion that a divinely mightiness takes care of mankind. We should become aware that nature does not need us! Nature makes us, and she makes us superbly automatically functioning. After that, we are absolutely on our own.

In order to find an explanation for all the inconceivable phenomena, nature gives us the ability to create magical thoughts and religious wonders and frees us this way from the burden of physics of reality and the tricky mathematics. The tremendous unconscious world we carry in our brain compensates for the incomprehension of the outer world. We *invent facts and wonders* to create a world we can perceive and live with - but also to indiscriminately kill our fellow contemporaries if they invent different facts and pretend to see different wonders.

Yet, with our rigid notion in this book, that everything is bound to laws of nature, we can argue that magical thoughts and fantasies also happen in our brain on the basis of natural laws; because, we might say, every thing is nature and there is only *one nature* that includes everything. But the harmful trouble occurs when such magic and illusory fantasies are taken out of the brain's unconscious and projected into the outer world (into gods and angels in heaven, into demons and witches on earth, and into eternal fire and devils in hell) where there is no evidence of such beings and places. In our chapter VI we tried to put the God-symbol back to where it becomes created and where it is housing, in the unconscious of the individual's brain. Nevertheless, we can continue on harming ourselves *ad absurdum* with fictitious

thinking, with opinions, views and conceptions, because nature does not need us!

Although innumerable happenings demonstrate time and again the impossibility of establishing peace on earth, we are obsessed with finding through religious doctrines the perpetual welfare that should make peace possible. People think that it can be done if the images of faith are transfigured, materialized, and believed in. Well meant intentions blind us constantly to the intricate invariance of the complex, time-functional, physical world. Our way of *contemporary* thinking is not capable of including the time-functional continuity of events and happenings without enormous effort. A new way of thinking is required; we call it *loop-thinking*. Loop-thinking provides us with deeper insight into our world's complexity.

There are signs on the horizon that it could become an urgent necessity for the survival of mankind to move from the stage of philosophy, sociology, and religion to physics with its mathematics, a shift from divine causality towards explanation based on natural laws.

As an example of the continuous progress in this regard: in the year 1633, officials of the Christian Church still regarded all the systems of mathematical astronomy as factious - and woe betide anyone who risked to deny the Church's absolutism! There was death at the stake. Such atrocity might be behind us; but the unknown world in front of us is still huge, and so is the potential for further monstrosities. We are far from seeing feelings, love and hate as neurological matter as physical activities in order to become capable of controlling them sensibly. - There is no God who protects us, who loves us! We are responsible ourselves for our own welfare. In order to become aware of such a responsibility a collective consciousness is needed - we think.

Reductionism argues that even the most complex phenomena of society, such as consciousness and unconscious, can be

reduced to the behavior of matter and laws of physics. Alas! Reductionism shall argue, and its arguing is fully justified; but reductionism in its actual concept will never have the brain to reach that end. It is easy to apply reverent words within philosophical or theological contexts; reality is inconceivably complex in reaching its core. Nevertheless, even an endless path has a beginning to be faced in order to safeguard our future. This is meant by our endeavor.

An utterly simple, although futile way to bypass ignorance and blindness of reality is in our days (perhaps it always was) boiling down the world to mainly two powerful means of survival, the two obvious substances in life: acquisitiveness of money and faith in god. With wealth we assure our survival on this side of death, and with faith in gods we intend to assure life after death. On the ground of both, greed for power and faith in gods, we not only kill introducers in order to defend our own territory, customs and religious doctrines, we greedily fight for more: we take away what others own. From the parable St. Luke 19/26: *For I say unto you, that unto every one which hath shall be given; and from him that hath not, even that he hath shall be taken away from him.*

With an abstract computer model we emphasized why speed and power are the two very components of survival. If one person is faster acting than his partner, the faster person's willpower comes into action before the willpower of the slow competitor. And if one person's power is greater than that of the competitor, so much the better for the powerful, and *vae victis* - woe to the vanquished. Enmity is short term might by damaging oneself and by killing the opponent. Amity is long-term renunciation of power, and by gaining for oneself and for the partner.

As the computer model is neutral, its application is not limited to the realm of human beings, but is valid as well for all living creatures we are involved with - be they human, animals, plants, or technical models. There is only one nature!

Our almost heretical axiom through our studies *Nature favors aggression* leads to the unpleasant paradoxical truth: survival requires killing of life as a normal action, be this eating (i.e., killing) a carrot, killing a deer for food, or killing a human being for one's own survival. Surviving is killing! You can throw up your hands in horror: for nature there is no difference between a human being and a carrot. Nature says: *Arrangez-vous!*

The answer, whether knowledge in terms of time-functional behavior to understand ourselves is really needed, was given by Albert Einstein: *We shall require a substantially new manner of thinking if mankind is to survive.*

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