Some Comments on Methodology in Management Research

By Björn Bjerke*)

It is my purpose in this article to give some of my views of methodology in the field of Business Management. The readers will find that several of the points of view that I give are valid for most of the subjects within Social Sciences. However, my own training and education is within Business Management. My practical experience is also from companies. That is why the restriction is given already in the title of this article.

Methodology is *not* a simple subject, in theory as well as in practice. The subject is rather new, at least in Business Management. It has connections with several other areas, e.g. Philosophy, Psychology, Logic and Mathematics. Because only a few attempts have been made to systematize the area, every contribution so far has been limited to one or several steps into what can be called partly unexplored territory. It is therefore very easy to criticise such attempts.

What should not be done, however, is to *disregard* the subject altogether which is unfortunately done only too often. Many scientists take the view for example that research has nothing to do with philosophy.

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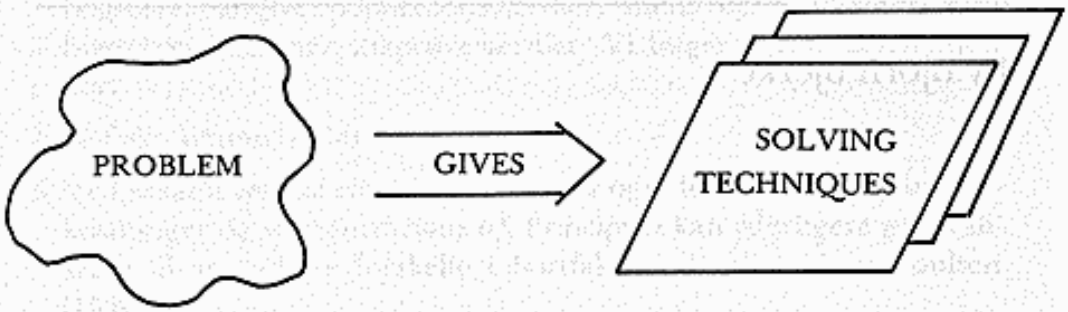
Others believe that from a methodological point of view it is uncontroversial to do an interview. Yet others believe that for a given situation and problem there is *one and only best way* to carry out research, that is to say that the problem *inherently gives* the best techniques for solving it.

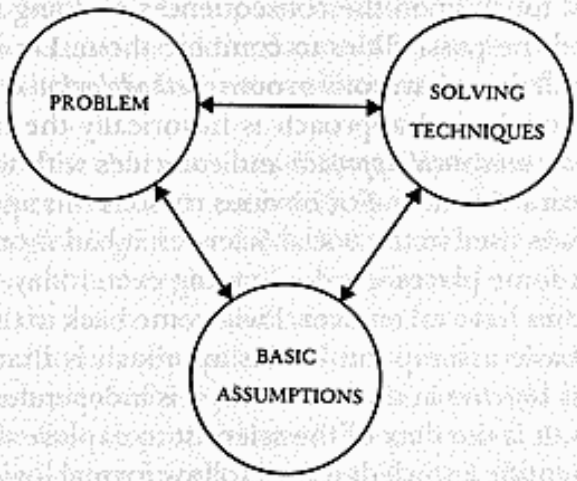


For example, there are scientists that claim that information problems are best solved if a computer is available, that a balance sheet gives a correct picture of the position of a company or that motivational problems are in most cases of pecuniary nature.
There are too many books on »methods« that reduce the problem of methodology to the following simple sequence:

1. Define the problem,
2. Draw up a plan for the study,
3. Collect data,
4. Analyze the data,
5. Write a report.

Methodology becomes reduced to simple discussions about whether interviews should be personal or by telephone or sent in the form of a questionnaire; whether it is possible to quantify a certain piece of information or not, or to budget costs that are to be put down in an enquiry. Such discussions touch upon *choice of techniques,* which in my opinion is only a part of methodology. The difference I make between techniques and methods is that *techniques are different possible alternative actions* available to the scientist, while *methods concern research policy,* including choice of techniques.

I want to argue that the methodological problem is not that simple. I would like to replace the previous figure with the following one, which I want to comment on briefly:



What is probably new for many is what is meant by *basic assumptions*. Assumptions important for methodology are those that concern *basic construction of reality, how to look at research and its aim, what constitute scientific ideals* and, *the ethical and aesthetic elements of the scientific process*. Such assumptions are normally called *stipulations* or *normative propositions* and are usually collected under the title of *paradigm*. The decisive point in this context is that assumptions as to how reality is basically constructed *can not* be empirically or logically tested. One can only *reflect* on them *intellectually*. Using techniques based on certain assumptions for testing these assumptions can only give *one result, confirmation*.

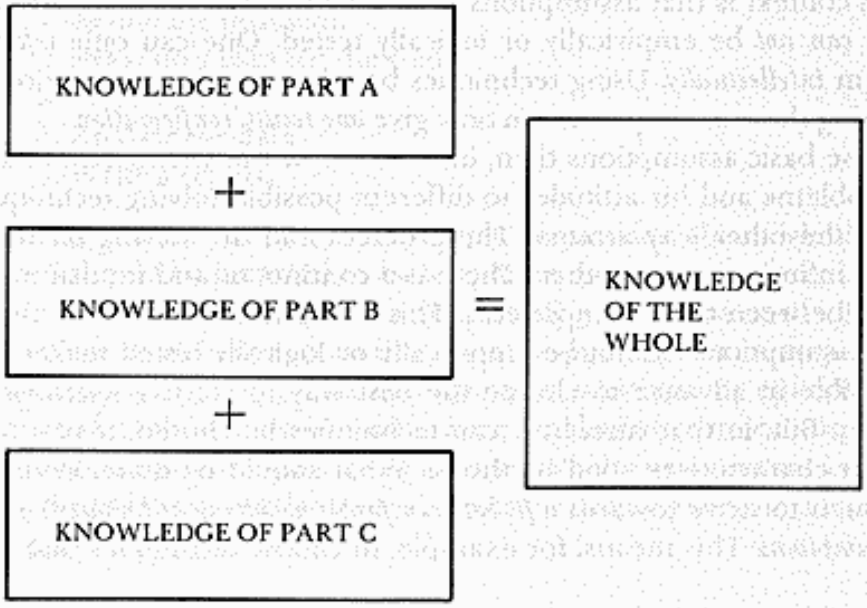
These basic assumptions then, influence how the scientist looks at the »problem« and his attitudes to different possible solving techniques – and the other way around. The problem and the solving techniques also influence one another. There is a continuous and mutual interaction between these components. This interaction plus the fact that basic assumptions cannot be empirically or logically tested makes it impossible in advance to choose the best way to solve a scientific problem. But, in that case, how can techniques be chosen, that is to say what characterises good methods? What should be done, in my opinion, is to strive towards *a fit between problem, solving techniques and basic assumptions*. This means, for example, to choose techniques that are in

harmony with the scientist's basic assumptions and with the problem that seems to be at hand. Let me in the rest of this article separate *three such harmony groups,* which exist within management research. I will also at the end touch upon the consequences of doing research in the three cases and the possibilities to combine them. Let me for the rest of this article call these harmony groups *methodological approaches.*

The first methodological approach is historically the oldest one. It is usually called *the analytical approach* and coincides with ways of working within the Natural Sciences. For obvious reasons this approach was the first one that was used in the Social Sciences; it had monopoly during a period, and in some places it is dominating even today. In other places other approaches have taken over. I will come back to them later.

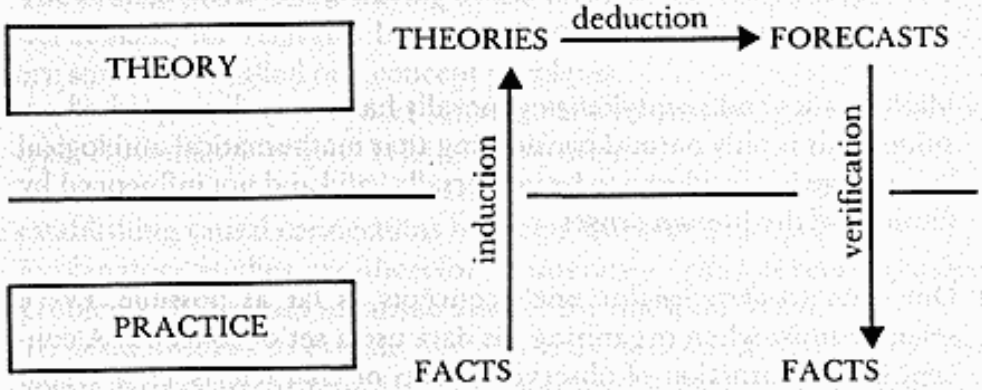
One general basic assumption in this approach is that there exists a reality which is *objective* in the sense that it is independent of individual human beings. It is the duty of the scientist to explore this reality. This means that scientific knowledge shall follow formal logical judgements and be independent of subjective impressions. Such impressions are regarded as disturbances trying to describe and explain what reality really looks like.

A further assumption is that reality has an *additive* character, i.e. the whole is the sum of the parts.



Albert Einstein, the famous physicist, said on a number of occasions that »science must start with facts and end with facts, independent of which theoretical structures it builds in between«. Firstly, the scientist is an observer. Secondly, he tries to describe what he sees universally and what he expects to see in the future. Thirdly, he predicts the future in the light of his theories. These predictions are finally checked again against the data.

The most significant characteristic of the analytical approach is its *cyclical nature*. It starts with facts, ends with facts and the facts ending one cycle are the beginning of the next. A scientist only thinks that his results are likely and is therefore always prepared to abandon them, if facts arise that do not correspond with the forecast of the theory. If a series of observations, collected in order to verify certain forecasts, forces us to abandon our theory, we look for new and better theories. Thus, this is the first step of the new theory as well as the last step of the old one. And as we expect science to form a chain of findings, we also expect this cyclical process to continue.



The horizontal line in the figure separates the empirical world (the world full of facts) from the theoretical world. In the world under this line we can see scientists looking through microscopes, or observing behaviour, or interviewing people. In the world above the line we can see an endless chain of mathematical formulas, logical sequences and systematically collected data. In the figure we can also see three steps. The first step means that we go from original observations to theories.

This is known as *induction* – a scientific methods where from the individual cases you conclude general laws, i.e. building of theories from factual knowledge. Sooner or later a scientist must ask what his general theory says about the development in the future. This step is done by *deduction* – logical method by which you conclude individual cases from general laws, i.e. the logical analysis of what the general theory says about a specific event tomorrow. Not until then he is ready to return to facts and see whether he was correct in his predictions. This third and final step is *verification* of the theory.

Some other typical traits of the analytical approach are:

1. One believes in the *law of causality,* i.e. given all circumstances only one outcome is possible.

2. One discusses in terms of *ceteris paribus* (= all other things being equal) given all other things remain unchanged, to change one factor brings only one possible outcome.

3. Mathematics and *quantification* generally has a very distinquished position. This is only natural considering that mathematical and logical knowledge is considered to be universally valid and not influenced by illusions of the human senses.

4. One tries to *operationalize* one's concepts as far as possible. Every scientist must when organizing his data use a set of concepts. A concept is an abstraction of observed events or characteristics, a verbal short representation of these. The closer a concept is to the objective reality, the more operational the concept is said to be. As the analytical approach to a large extent occupies itself with registering events and behaviour in this reality, one tries as much as possible to make operational definitions, i.e. concepts which contain a description of how a certain phenomenon is possible to discover in the objective reality. Anybody is assumed, using the rules laid down in the definition, to be able to discover the phenomenon in question, which is represented by the definition.

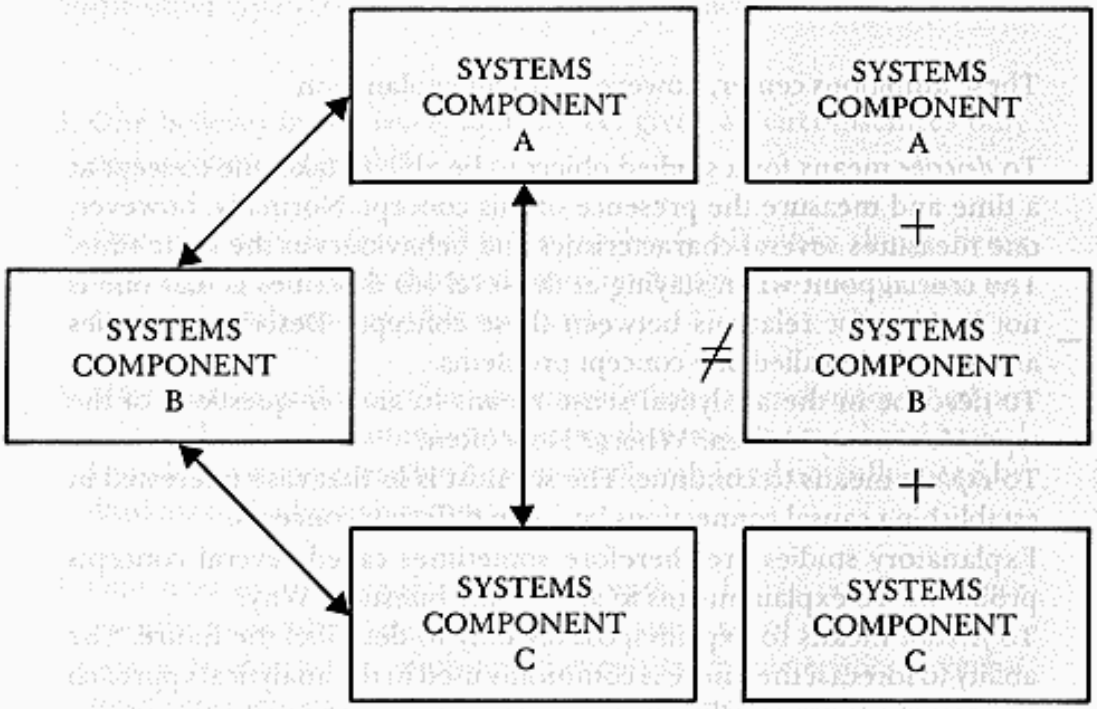
The aims/intentions of the analytical approach can be expressed in four levels:

– to describe,
– to explain,
– to forecast,
– to guide.

These ambitions center, however, around explanation.

To *describe* means for a studied object to be able to take one concept at a time and measure the presence of this concept. Normally, however, one measures several characteristics and behaviours at the same time. The crucial point when staying at the level »to describe« is that one is not looking for relations between these concepts. Descriptive studies are sometimes called one concept problems.
To describe in the analytical sense means to answer questions of the type: How many? When? Where? How often?
To *explain* means to continue. The scientist is in that case interested in establishing causal connections between different concepts.
Explanatory studies are therefore sometimes called several concepts problems. To explain means to answer the question: Why?
To *forecast* means to explain (possibly only to describe) the future. The ability to forecast the future is commonly used in the analytical approach as a test of the universal applicability of explanations.
To *guide* (which is important in such an applied subject as Business Management) is to use existing explanations and theories in the service of change.
The next approach in the historical development is *the systems approach.* This approach started to take form in the beginning of 50's, among other reasons as a reaction to the additive picture of reality in the analytical approach. The systems approach is very common within Business Management. One may even say that it is the one dominating today.

The systems approach also believes in an *objective* reality, which the scientist shall map out. However, unlike the analytical approach, the systems approach assumes that this reality is arranged in such a way, that the whole differs from the sum of the parts. Reality must be looked at with the assumption that its parts are mutually interacting and can therefore not be added in a simple way. This means that the relations between the parts come into focus as they may give positive or negative effects. This is what is called *synergy*.



Knowledge developed in the systems approach is dependent on the system. Individuals can be parts of a system, but their behaviours follow systemic principles, i.e. the individuals are explained by the characteristics of the system. In other words, the systems approach explains the parts by the traits of the whole.

Another important difference compared with the analytical approach is that one denies the utility of looking for causal connections. Within the systems approach one does not look for factors earlier on in time but for *purposeful forces.* These forces may for example be derived from the fact that a specific constellation in a certain situation may be more functional than another constellation. A common name for such connections is *produce-product connections.* The means accepting the notion that a »cause« may have alternative »effects« and that alternative »causes« may have the same »effect«. The former is called *multifinality* and the latter *equifinality.*

This approach also leads to a different attitude towards the possibilities to use experiences from one study into another (similar) one. The results of a study (and hence the conditions for the next one) is not a theory in the analytical sense of components included in the model and the way they are structured. One is using experiences from earlier studies only as aids in thinking in analogies, provided that one is studying systems with a similar content.

The systems approach has in many respects a language of its own. This language contains several concepts with a specific meaning in this approach. They are specific enough to talk about the systems approach language or shorter *systems language.* Let us look at some of the words in this language.

The word *system* as such means »a set of components and relations between these«. This definition requires a few additions:

1. A system is not only something, which in the sense of the analytical approach simply is more comprehensive than normal and considers more aspects than usual. Instead, it is a question of *reorientation of the scientific mind* in relation to the analytical approach.
   This reorientation consists of studying objects in intimate interaction with one another, instead of styding objects that can be explained in causal terms.

2. To understand a component, it is not enough merely to study the component as such. One must also look at it as a part of a greater

whole. The same type of discussion can be used at a higher level. In order to understand a system as a whole it is often necessary to think of its environment. In such a way it is possible to distinguish between *open* and *closed* systems. In the latter case one is not studying the systems relations to its environment, which are of interest for open systems.

Examples of other concepts in the systems language are:

– systems environment,
– systems as such and systems model,
– systems components and super systems – level of enlargement,
– structural and processual perspectives of systems.

What is outside the limit of the system is called the *systems environment.* This comprises such aspects in the surrounding of the system, that there is reason to consider to understand the system.
The same way as within the analytical approach one separates within the systems approach between an objective reality (the reality as such) and pictures of this reality. Sometimes in discussions misunderstanding may arise, if it is not clear whether one speaks about the manifestation of the objective reality, i.e. *systems as such,* or pictures of this reality, i.e. *systems models.* One is very open within the systems approach for what a system model should contain. This is ideally decided by the purpose of the model. If the model has only a descriptive purpose one might want to map many aspects of the reality in it. If the model is supposed to be used to guide with maybe several of these aspects can be deleted – or must be in order to be able to use the model.
One talks sometimes of the relativity principle for systems. It says, that every component within a system can be developed and made into a new system, and the converse. Every system is a potential component in a large system, called super system. For this reason, one sometimes talks of different *levels of enlargement* for system. To choose a low level means that the model contains several details. The opposite is true for a high level of enlargement.

Mapping of system as such may mean to specify the position of components and relations at a certain point of time. By specifying this for relevant qualities of the system, the *systems state* is given. To stress different states when modelling systems as such has traditionally been called a *structural perspective.*

Alternatively, it is possible to specify the *course* of different components and relations over time. This has been called a *processual perspective.* It is possible, of course, in one and the same study to describe systems as such in both structural and processual terms.

The systems approach has now existed so long that one can clearly distinguish different ways of using it. One result of such applications is that today one can talk of different groups of systems models. These are clearly related to the development within the subject Business Management, concerning its views of business organisations as such.

A. The Mechanical Systems Model

The mechanical system is a closed system. It consists of relatively simple components related to one another in a mostly one-dimensional way. The system has no ability of learning or to change its own structure. It is also not necessary for the system to subsist. It is able, with its relatively simple qualifications, in the normal case to maintain its equilibrium.

B. The Biological Systems Model

Cannon introduced the concept homeostatic processes to stand for those physiological processes in different organisms, e.g. the human body, that have the ability to maintain important equilibrium states. This is made possible by continuous exchange with the systems environment. These exchanges are however made without the need of the system to change the structure. Systems with similar characteristics, i.e. ability to maintain a certain state (with minor corrections) in spite of disturbances from the environment, have been studied within cybernetics. The systems are there called servomechanisms. One example of such is a thermostate.

It has happened in Business Management (and happens still) that business organisations (or their parts) have been mapped as either a mechanical or a biological system. The modern opinion is, however, that organisations in which human beings are involved are best pictured in the following systems model.

C. Systems as Open, Learning and Structurally Changing (Self-organizing Systems Model)

One uses to say that a system, that has continuous exchange with its environment, that has no ability to change its structure but still has the ability to maintain its state of equilibrium, is using the principle of *negative feedback*. This means that the system is using a part of its energy to notice its own course for a goal, that has been decided upon in advance and correct its course if there is any discrepancy between state and goal. In other words, no structural change is made throughout. The biological systems model is working according to this principle.

The opposite is called the principle of *positive feedback*. Then, it is valid that the system has the ability to amplify discrepancies between state and goal and to change its own structure. This is in order to overcome new demands from the environment. In other words, the system has the ability to grow (or the opposite) and to learn.

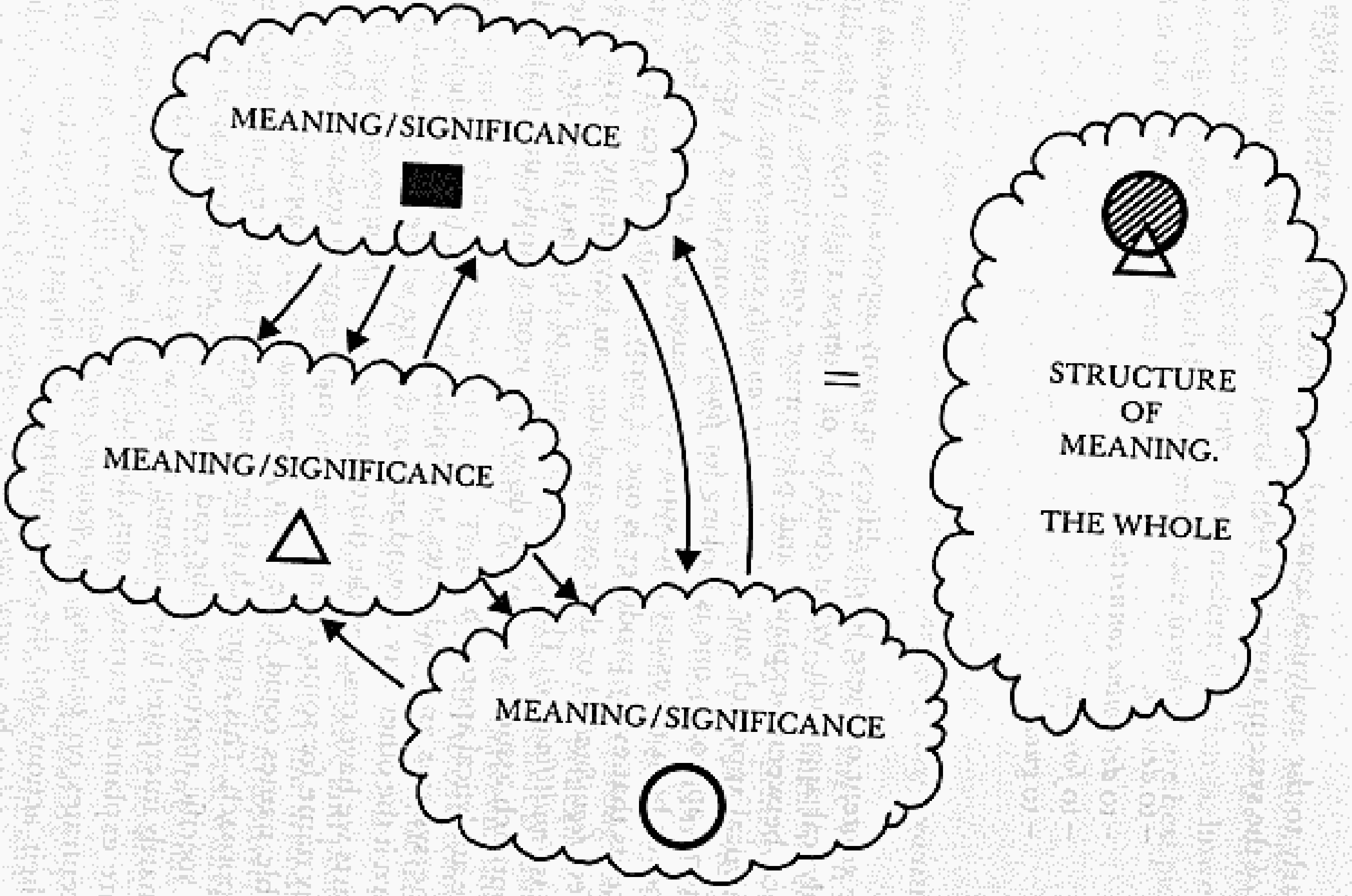
The self-organizing system has the capacity for both negative and positive feedback. Negative feedback is necessary to protect the system against disturbances and variations, and positive feedback to discover deviations and, among other things, to plant new conceptions, which explain better than the old ones and which make possible the organization of a different structure in the new situation. Maybe it is not possible to survive with the earlier structure and its ability.

According to the systems approach, research on self-organizing systems has no greater success if methods are used according to the analytical approach. Inter alia, it is necessary to use more of qualitative than quantitative techniques, to interact and try to understand instead of a passive study of reality and finally, to have a holistic point of view instead of an atomistic one.

Similarly to the analytical approach we can divide the scientific intentions of the systems approach into:

– to *describe,*
– to *determine connections,*
– to *forecast,*
– to *guide.*

The content of these levels differs in many aspects from those in the analytical approach. What could be of interest right now is the difference between »explain« and »determine connections«. Within the analytical approach one is looking for *causality* connections. Within the systems approach one is looking for *finality* connections. A »producer« is never both necessary and sufficient »cause« of a certain effect. One accepts that every producer is one of many possible to reach a certain effect *(equifinality)* or that one producer can have many alternative effects *(multifinality).* This is one meaning of the fact that the systems approach assumes to have to do with a more complicated reality than the analytical approach.
The systems approach tries to explain the parts by the whole. If we turn it the other way around and say that the whole is explained by the parts we have reached the third approach, i.e. *the actors approach.* This is my name for some recent trends in management research. Other possible names could have been *phenomenological* approach or *dialectical* approach. This approach is the youngest of the three and appeared as a specific approach at the end of 60's. The actors approach is not primarily interested in explaining larger wholes but when it happens they are explained starting from the individual actors. The approach concentrates on *picturing the meaning and content* different actors put in their actions and the surrounding environment. Therefore, reality is assumed to be a *social construction,* consisting of processes on different levels of structural meaning. From this follows that our common language is given different meanings in relation to these levels. Wholes and parts become full of nuances and are continuously reinterpreted.


MEANING/SIGNIFICANCE
MEANING/SIGNIFICANCE
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STRUCTURE
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MEANING.
THE WHOLE

In order to understand and to explain an organization according to the actors approach, systemic properties are not relevant but the interest should focus on *the actions of the important actors in the organization.* Organizations as such do not act, only individual actors in it do. According to this idea, systems do not exist in the sense of the systems approach. On the contrary, the actors approach upholds that this type of systems exists only in the mind of the scientist and does not build on how the actors interpret themselves in relation to their organization.
Knowledge developed in the actors approach becomes dependent on the individuals and follows certain phenomenological principles of how the social reality is constructed.

In other words, the actors approach differs strikingly from the assumption in the other two approaches about an objective reality, independent of individuals. The reality assumed by the actors approach exists as a social construct, which means that it is not independent of us.
By this standpoint, reality will be looked at as consisting of *several different images* of reality, which are shared by a larger or a smaller group of people. These images have *different socio-cultural meanings and significancies.* The images of reality can more or less go into one another. The shared parts become common parts of reality for a larger group of people, which can consist of an organization or a whole society. These shared parts will for the group, for the organization, for the society, etc. become an *objectified reality* but not objective in the sense of the other two approaches.

This objectivity is created by man and can therefore be questioned and changed. There objectified parts of reality or their meanings will in their turn influence man himself. The relations between what man is producing and how the produced in its turn influences him are dialectical. We are continously reinterpreting the meanings in these relations. Therefore the meanings will get many nuances and the relations will become dialectical.
The different meanings and interpretations in one actor get their structure through the images of reality he is orienting himself *with* and those he is orienting himself *against,* i.e. the images from other actors. These images of reality are further developed through the mentioned interpretations and meanings.

This can be called *the first basis* for explanations within the actors approach. According to this approach it is necessary first to understand the images of reality by which the actors orient themselves, in order to understand acts in social systems. If this level of understanding is not achieved, no explanations can be given why people act the way they do. If we connect this with what has been said before, that the images of reality in different actors plus their meanings and interpretations stand in a continuous dialectic relation to one another, we will get *the second basis* for explanations within the actors approach, i.e. to understand these dialectical relations. When we understand how these different images of reality are developed and changed through the mentioned relations, we can also explain why something is changed in social systems the way it is.

Let me try to discribe the actors approach by talking about the meaning of some central concepts. The reason why I talk about meaning and not of definition is that this suits the idea of the approach itself, i.e. that concepts in the social reality have many nuances and are continuously reinterpreted. The meaning right here means my meaning as an author. The specific meaning will from time to time be determined by the setting in which the concepts may appear.

To speak of an *actor* is by itself an important standpoint. It points at the interest of human beings as human beings, i.e. acting and creating individuals, instead of somebody who is conditioned by outer factors, where she, for example, is explained as a component in a system. It therefore becomes natural to talk of acts instead of behaviour. An act gives man the role to be an active creater of meaning, while behaviour gives man a passive role as stimulus-receiver and response-giver.

For the scientist, man is an object of investigation in terms of an active thinking and creating individual. This actor is very often placed in an organizational setting which also becomes the object of investigation. This organizational setting consists of other actors – other human beings.

One way to put it is to say that by this standpoint Business Management as a subject clearly belongs to the Human Sciences instead of the Natural Sciences.

According to the actors approach, a scientist must actively *engage* himself humanly in the problems of the studied actors, in order to under-

stand social acts. However, from time to time he must *increase the distance* in order to broaden the perspective on collected data. This method is not to be mixed with participatory observation, a sociological technique of getting data, which in principle can be done without any engagement at all. Combinations between association and dissociation will decrease the risks of the scientist »drowning« in the organization he is studying.

While the scientist – we can call him an *observer* the way we are speaking of him now – is developing explanations he can put different interest in these. He can be interested in creating new understanding, new thinking and/or emancipation in the organization in which he is involved. This can be reached in many different ways and is dependent on the particular organization and actors which he is working together with. Important is also that while the scientist is working with creating new understanding, thinking and/or emancipation in the organization, he will more and more release himself from the engagement in it. An observer of social acts can never stand besides or outside what he is studying. It is a dialectical necessity that at the same time as being an observer he is *also* an actor, influencing the organization in which he happens to be, at the same time as he is influenced by it.

By *intentionality* is meant the structure that gives content to experience. It is not the same as the intentions but is the dimension that lies behind them. Intentionality is the bridge between object and subject. The concept of intentionality does not fit in with the traditional empirical research. There, human beings become passive experiencers and interpreters of perceived objects in the environment. Intentionality makes human beings active creaters of the objects in the environment. Let me put it this way. What is actually happening is that the objects themselves are shaped by our ways to perceive them. Mathematics is a good example of this. It gives constructions in our minds, but nature is shaped by them, response to them. Let me here quote Bertrand Russell, a famous philosopher in modern time. He said once: »Physics is mathematical, not because we know so much about the physical world, but because we know so little; we can only discover its mathematical qualities«. The concept of intentionality is turning the traditional empirical thought upside down, i.e. the thought that we are attracted by the

environment through our senses and through them are given the possibility to experience it. Intentionality means on the other hand that by our intentions we reach out through our senses and find and shape the subjects according to these intentions.

The scientific intention of the actors approach is to catch the *subjective logic in man.* This has to do with the opinion of science as denoting meaning and the view on how the social reality is constructed. In this theoretical setting the subjective logic is ruling. Man does not act without interpreting reality. Actors approach postulates that there is a relation between interpretation and act. In the concepts of the subjective logic, the scientist tries to catch this relation. The subjective logic gives a higher degree of harmony with the social reality than is possible with the objective logic, the logic of natural laws. For a long time the Social Sciences have applied objective logic to social reality. According to the actors approach this does not consider that the action of man stems from a network of meanings which they themselves construct and of which they are conscious. In other words, understanding how the social reality is constructed becomes very important.

If we take a concrete actor, he prescribes for himself and for his actions a meaning, the content of which is noted by the scientist. Moreover, from other actors come several other interpretations of the acts of this concrete actor and of images that he is considered to have. Therefore, the scientist must describe meaning in various ways in order to catch the multiple apprehension that exists in the social reality.

In practice the scientist is working on *two levels of language.* At the lower level he tries to give an extensive as well as multiple description of the various meanings, given to the acts of individual actors. At the scientific level, however, it is important for the scientist to denote the meaning of the subjective logic, as well at the level of the individual actors as at the level of their dialectical relations to one another.

I have so far given a brief introduction to three methodological approaches existing within management research of today. Hopefully you have got ideas that research can be done many different ways, among other things depending on basic assumptions accepted by the scientist before he starts individual studies. Let me stress again that principally because of these basic assumptions it is not possible a priori

to say which research strategy is the best one. For example, it is not possible to say in general terms which of the three approaches is preferable in all cases. They are in many aspects not comparable.
Let me give you some examples of the differences between accepting one of the three approaches, but now in more concrete tactical terms.

1. It is only the analytical and systems approaches that believe in the possibility *to plan the research as a whole* from the beginning. According to the actors approach this must be done step by step while the research is going on.
2. It is only within the analytical approach that *statistical sampling* is possible. According to the systems and the actor approaches, reality contains too many unique elements to make a fruitful discussion of representativity possible.
3. *Experiments* are only possible in the traditional sense in the analytical approach. Among other things the prerequisites for conducting an experiment build on the possibility to discuss in terms of ceteris paribus (all other things being equal). The other two approaches deny the possibility to discuss in these terms.
4. The idea of *an objective scientist,* i.e. a sincere person without a bias in one direction or the other, is accepted fully only by the analytical approach. Systems approach accepts it with modification, actors approach does not accept it at all.
5. Actors approach prefers to talk about *dialogue* instead of interview, the latter a term which is accepted by the other two approaches.

I could have continued with more examples. However, I think it is enough right here right now. Let me finally look at the possibility of a combination of the three approaches. In practice, approaches are rarely used so purely as I have described them. However, we must observe, that the point is *not* to simply combine them. There are many scientists who just go ahead without being fully aware of what they are doing. I would not recommend that. Choice of approach is associated with certain basic assessments by scientists as a group as well as by the individual scientist. How can it be possible to combine the belief of an objective from us independent reality containing causal connections

with the belief of a social constructed reality containing dialectic relations? A scientist should not have such a double moral, even though there exist cases.

What is happening, or rather what should happen, is that one of the approaches is made into *a basic approach,* i.e. one accepts one of the approaches and its basic assumptions. After that it is possible to use parts of the other approaches within the framework of the chosen one. However, and this is important, if results, techniques, etc. from one approach are used in another approach they will be reshaped. *The form will be changed by the context.* Example of such *contextual procedures* is the analytical scientist that is using the dialogue from actors approach in order to become familiar with a research area. Results of such a dialogue, which can be used for generating hypotheses, much be discussed within the context of the analytical approach. In other words, the scientist has the responsibility to think about what becomes the form and the consequences of using a dialogue in an analytical context.

Another example can be a scientist attached to the actors approach using the systems language. However, once again *that* language will receive another meaning in *that* context according to the assumptions in *that* approach.

Methodology is a difficult subject. There is no easy way out. This is understood by every conscientious scientist.