

Higher Education 2012

Introducing Non-knowledge-based Learning of Creativity and “Learning to be” In All Education Programs

Anders Lennart Swahn and Staffan Svahn

INTRODUCTION

In education development history there are two outstanding UNESCO documents; “**Learning to be**”, 1972 and “**Learning: The Treasure Within**”, 1996, that are of great significance for how we today can go forward and create new and better education for all. We have used those documents to make proposals for programs that will generate significant breakthroughs both in basic and higher education development. This document deals with higher education development and a separate document; BASIC EDUCATION 2012 deals with primary and secondary education.

LEARNING TO BE AND THE FOUR PILLARS OF EDUCATION

The UNESCO report of the **International Commission on the Development of Education**, “**Learning to be**”, 1972, introduced some substantial new thinking into education development work. It suggested the use of modern technology for knowledge learning and introduced an additional area of learning, which they called “Learning to be”.

These concepts were further developed and refined by the **International Commission on Education for the Twenty-first Century (Delors-Commission)**, which presented their findings and proposals in the UNESCO report: “**LEARNING: THE TREASURE WITHIN**”, 1996. There they created and presented a new, fundamental and comprehensive framework for education by introducing the four “pillars of education”: *learning to know, learning to do, learning to live together and learning to be*. The report explains that “.. *learning should enable each individual to discover, unearth and enrich his or her creative potential and to reveal the treasure within each of us. This means going beyond an instrumental view of education, as a process to achieve specific aims in terms of skills, capacities, competence, etc., to one that emphasizes the development of a complete person, in short, learning to be.*”

The research and investigations into the reasons and justifications for proposing this framework is related to questions like:

What is the difference between “learning to know” and “learning to be”?
What is the difference between “knowing all that e.g. an engineer or an entrepreneur need to know” and “being a good engineer or entrepreneur”? and;
If I learn all about leadership, will I become a good leader”?

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Anders Lennart Swahn tel. + 13047543761
lennart.staffan@creativityinaction.eu

Staffan Svahn tel. + 390302007570
www.creativityinaction.eu

How to answer such questions and how to introduce “learning to be” into the curricula of academic institutions has been an unresolved problem for education researchers for many years. The main problem has been that this is a non-knowledge-based subject and there is consequently no acceptable science-based definition of the subject, which normally is a prerequisite for establishing a scientific base for further development and teaching.

Our fundamental research into a closely related subject, *Creativity*, has produced science-based explanations of how to approach learning of all non-knowledge-based subjects. We have also worked out models for establishing a creativity science and course plans for introducing all non-knowledge-based learning into ordinary academic courses on college and university levels.

The following is a brief presentation of the basic concepts and the models that can be used for establishing non-knowledge-based learning in all higher-level academic education. For a video presentation of the basic concept and for additional information, see our website www.creativityinaction.eu and also our first basic textbook on the subject; “CREATIVITY – A Science-based Outlook on Life and Work.

A SCIENCE-BASED MODEL FOR ALL NON-KNOWLEDGE-BASED LEARNING

ABOUT MODEL BUILDING

The three basic tools for constructing scientific models are

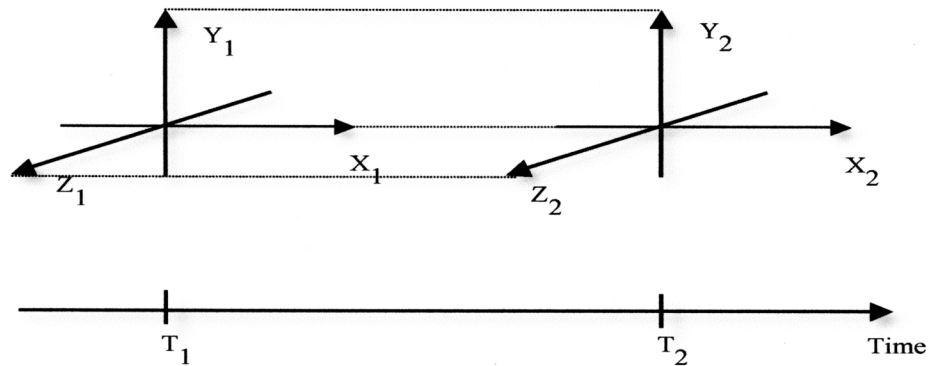
1. **Dimensional analyses and analogies.**
2. **Analyses of the extreme cases**
3. **Assessment of reasonableness and probability**

The value of the outcome or product that the use of the model presents cannot be assessed in advance.

BASIC DIMENSIONAL ANALYSES OF OUR SPACE/TIME REALITY

The Old Worldview

Up until the middle ages, the official worldview was that the earth was the center of the universe and that its surface was flat. People lived in a flat, three-dimensional world, which can scientifically and mathematically be represented by the three coordinate axes X, Y, and Z. The coordinate axes stretched out into infinity like straight lines in three right-angle directions. Time (T) was independent of the three coordinate axes, but like them, it had an unending extension forward and backward in time. This was a Space+Time world, as represented by the figure on next page.

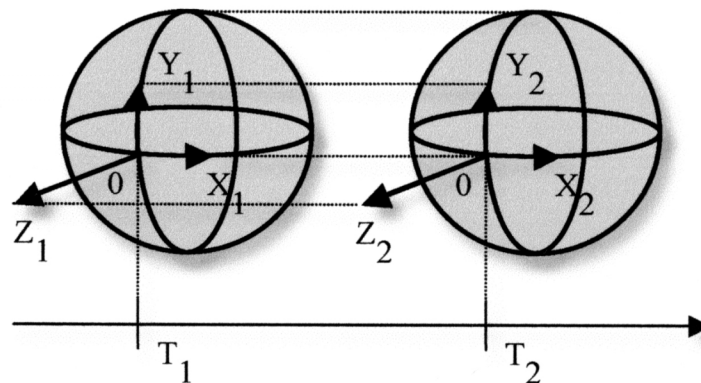


Before Newton

Within this worldview, there were many natural forces and phenomena, which could not be explained in a rational way; e.g. electrical-, magnetic-, physical-, chemical-, and biological forces.

Newton's Worldview

In the 1700s, Isaac Newton gave us a completely new and revolutionary scientific worldview when he explained the fundamental natural force—gravity. Mathematically and scientifically, the gravitational force seemed to affect two of the coordinate axes, X and Y, so that they curved like circles around the earth, while the third, Z, still seemed to be unaffected and stretch straight out into space. The time coordinate, T, was still regarded as independent of the coordinate system and stretched infinitely forward and backward in time.



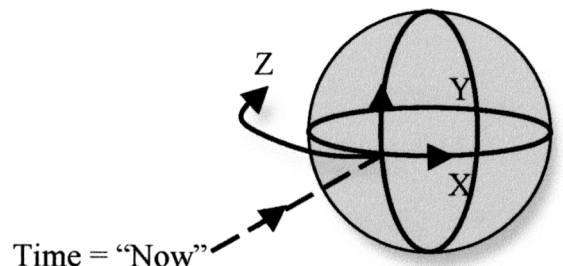
After Newton

Newton's discoveries made it possible to scientifically investigate and explain many of the natural phenomena, which were mentioned above. Natural Science got a very big boost.

Einstein's New World View—Our True Reality

In the beginning of the twentieth century, Albert Einstein, presented the world with a completely new theory that revolutionized science and opened new, vast possibilities for the development of science and technology. This theory shows that our reality is four-dimensional. Space (the coordinate axes X, Y, and Z) and time (T), are all “relative to each other” and they together create a uniform, integrated world which is “finite but without boundaries.”

Einstein managed to derive a uniform mathematical equation that fully described the connection between the three coordinate axes and the time axis. He thus created a four-dimensional Space/Time model for our universe and showed, through theoretical calculations, that it met all requirements for a true model of the world we live in.



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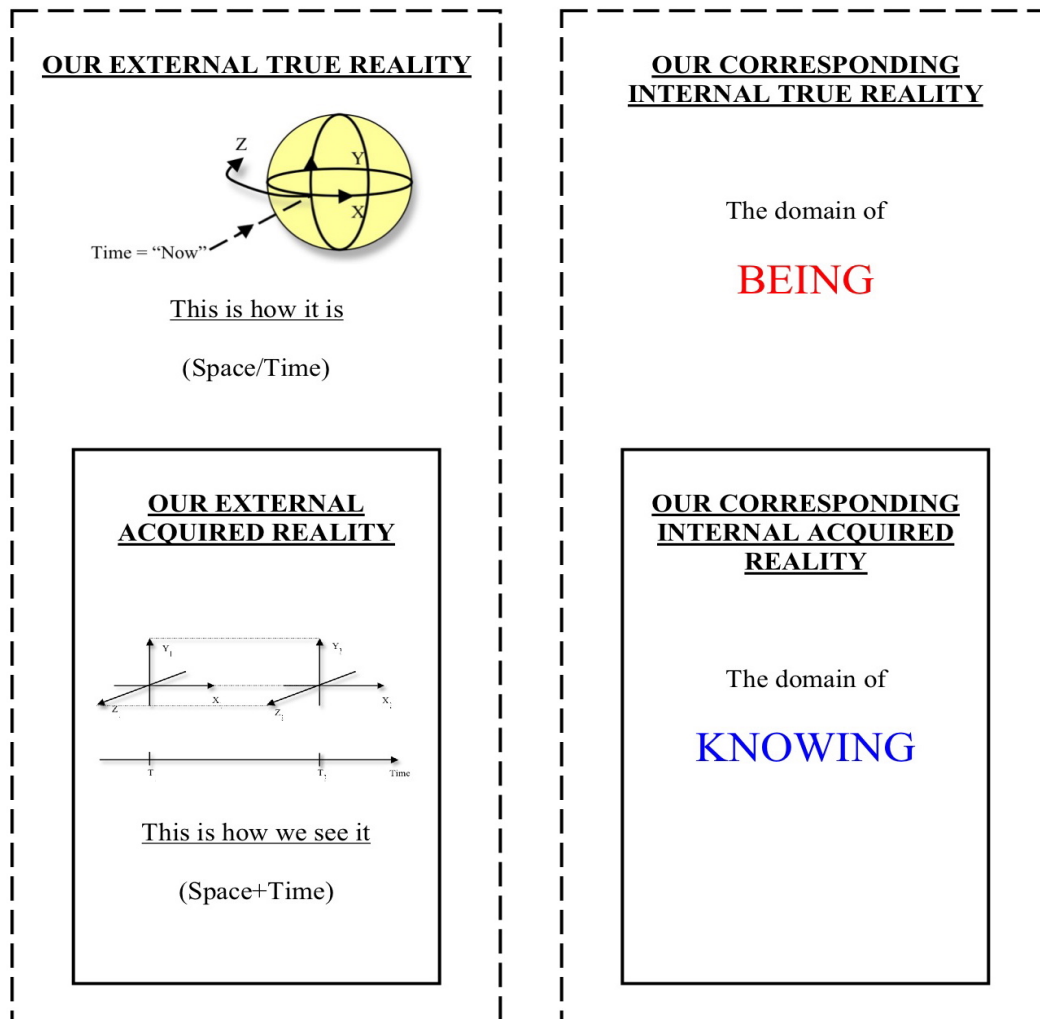
After Einstein

The worldview Einstein arrived at with the help of advanced mathematics and analogous thinking is one we can't really understand or describe using our five senses. What the figure above shows or suggests is that the three space axes encircle one another and that the time axis has completely been absorbed by the other three. The concept of time is reduced to sequences of “now” experiences, and according to Einstein: “The distinction between the past, the present and the future is only an illusion”

This is the greatest scientific discovery in human history, and the theory of relativity is the source of all scientific and technical achievements up to now.

OUR TRUE AND PERCEIVED EXTERNAL AND INTERNAL REALITIES.

Using the properties of the new world-view that Einstein's Theory of Relativity presented, we can make a distinction between the external, true Space/Time reality and the external Space+Time reality, which we can perceive with the use of our five limited senses. The true external Space/Time reality has a corresponding internal reality, which we call the domain of Being, and our external Space+Time reality has a corresponding internal reality, which we call the domain of Knowing. This is graphically represented in figure on the next page.



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Our Internal Domain of Knowing

The domain of Knowing is the part of our inner self that we have designed and constructed with the help of our limited five senses. Here we have stored all that we have learnt since birth; all our knowledge, skills, experiences, beliefs, opinions, thoughts, reasoning and emotions. The properties of its content are expressed in relative values (e.g. from warm to cold, from good to bad, etc., with the full scale in between), and information is processed in an analog way; Knowing can be considered our analog inner domain. In Knowing, all information and all processing are related to the past. From Knowing we generate "changing actions", or actions that makes something that already exists into something else, often with bigger, better and /or different content. These types of actions we have defined as ReActions.

The domain of Knowing represents our personality or our EGO, and our ReActions are ultimately aimed at protecting and preserving our survival - both figuratively and literary - and at preserving and protecting all that we have acquired and own.

From the domain of Knowing we can only *predict the future* by extrapolating the past through the present into the future.

Our Internal Domain of Being

An understanding of the content and workings of the domain of Being can only be reached by drawing parallels between our outer true reality, and its corresponding inner reality. In Being, the three space dimensions and the time dimension appear in a unified interdependent system. This means that “time does not exist” as a independent dimension or as Einstein expressed it: “The distinction between the past, the present and the future is only an illusion”. It is, therefore a scientifically supported possibility that information from Being can be related to not only the past and the present but also to the future.

In Knowing, our five senses are limited to obtaining and processing only a narrow spectrum of information and can therefore provide us with a limited or incomplete picture of our outer reality. In Being, however, our senses can be assumed to be unlimited and therefore provide us with a true and full picture of our reality.

The possible content of Being also includes three other important properties; **Intuition**, which informs us of our true reality received from the unlimited expansion of our five senses; **Integrity**, which expresses the absolute value and the truth about our reality; and **Intention**, which is the intrinsic life force and the driving force in using intuition and integrity to create something new. It is from the domain of Being we generate creative actions that can bring into our perceived reality something that did not exist before. We call these actions CreActions.

It is from Being we create new knowledge, new solutions to problems, and the new “way of being” that is needed and wanted to achieve *sustainable development, progress and success* for enterprises, organizations and societies, and *flow, aliveness and well-being* on an individual and personal level. From the domain of Being we have a possibility to *create the future*.

DEFINING CREATIVITY

In reference to our previous reasoning we can now define creativity:

*Creativity is the ability to bring something into existence that was not there before-
from a possibility in the future. It is generated from our inner domain of Being.*

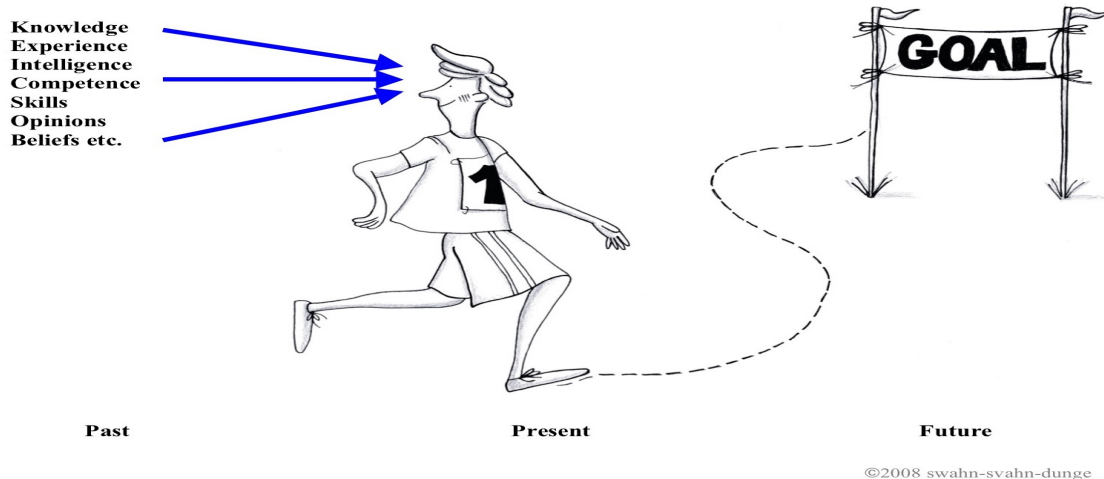
GENERATING ACTIONS

All actions are generated through a Communication for Action. All our actions are a mixture of the two actions that we have defined - ReActions and CreActions. They are distinctly different because they are generated from different domains and therefore we must analyze, investigate and deal with them as separate entities and in their most refined and extreme forms.

We can only investigate ReActions and CreActions with extreme case analyses.

Actions generated from Knowing - ReActions

ReActions are generated from a Communication for ReAction. The Source of the communication for ReActions is all that we have accumulated in the domain of Knowing in form of knowledge, skills and experience etc. and is verbally expressed through an order, accompanied by explanations and/or descriptions. A communication for ReAction is a one-way communication that changes something that already exists into something else, often with better and/or different content or properties. The most refined ReAction process is automatic and repetitive symbolized by the blue circle in the figure of the Operating System on page 7.



ReActions

Predicting the future by extrapolating the Past through the Present into the Future

Actions generated from Being - CreActions

CreActions are generated from a future-based Communication for CreAction, which brings into existence something that has never existed before from the domain of Being. The Communication for CreAction has to;

1. express a definite goal in the future;
2. have absolute, not relative values;
3. be guided by Intuition;
4. express the truth with Integrity and with Intention.

The future-based Communication for CreAction has three components;

Declaration – which defines the goal in exact qualitative and quantitative terms at a precise time in the future: **I declare that X is true by Y,**

Promise – to reach the declared goal at the precise time: **I promise that X is true by Y,** and

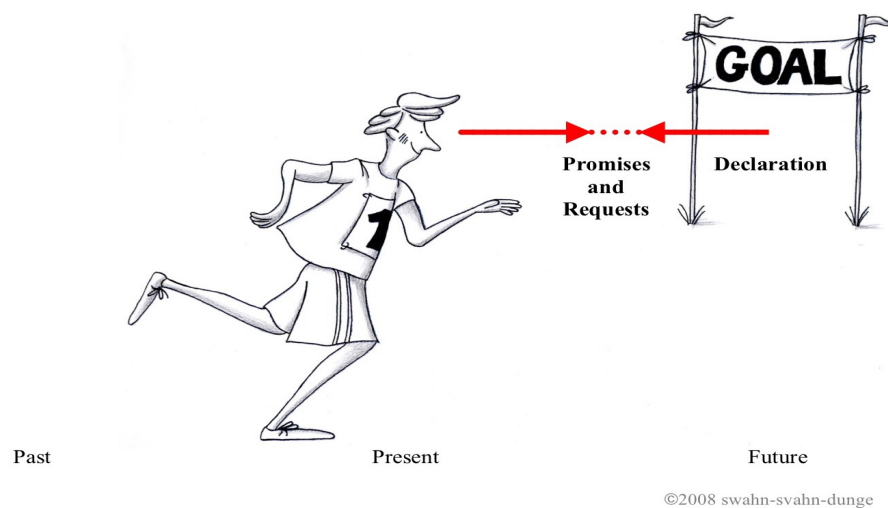
Request – support at a precise time to reach the declared goal: **I request that X is true by Y.**

This three-part formulation creates a contract between the participating parties that is strongly anchored in their Integrity. If all parties fulfill their commitment and follow through to reach the agreed upon goal just because they promised to do so, regardless of both internal and

Creativity in Action

external contradicting forces, they will produce unforeseen and outstanding results, often surpassing their highest goals and expectations. In this process it is through this oral communication, the speaking of declarations, promises and requests that creative actions are generated. A Communication for CreAction is always a two-way communication between at least two persons as there must always be somebody who is aligned with our declarations, listens to our promises and answers to our requests. A CreAction is always generated with a committed intention and will never occur automatically, as often ReActions do.

It is important to know that we can always choose to be creative and generate CreActions, and that it is done through a deliberate communication.



Creating the Future With CreActions

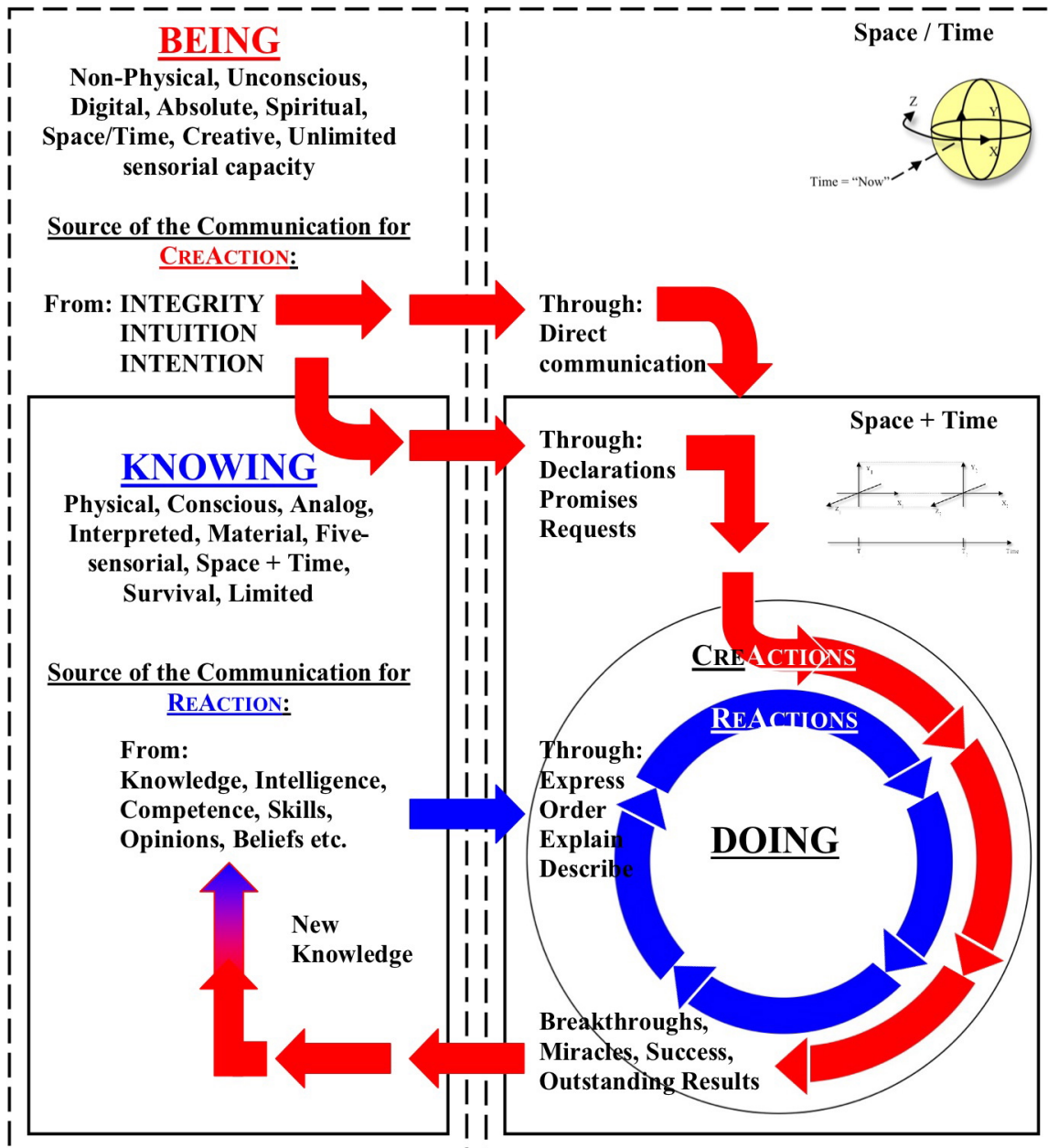
THE OPERATING SYSTEM FOR ALL HUMAN ACTIONS

From these assumptions and deliberations we have developed and designed the following model that explains a basic Operating System for all human actions. It shows how communications for actions are transferred from our domains of Knowing and Being into our actual external world in forms of ReActions and CreActions, which we also call Doing.

The Basic Operating System for all Human Actions

OUR INTERNAL REALITY

OUR EXTERNAL REALITY



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Anders Lennart Swahn tel. + 13047543761
lennart.staffan@creativityinaction.eu

Staffan Svahn tel. + 390302007570
www.creativityinaction.eu

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Two Brief Comments On The Operating System

Two routes from Being to Doing.

CreActions can take two routes from Being (Space/Time) into our perceived reality (Space+Time). The first is direct. Artists and musicians use this route, for instance, when they create and translate their art from Being directly onto a canvas or through an instrument. They have a special language that they use to communicate directly from Being. The second route is indirect. As we still have not invented a verbal language for a direct communication from Being the communication for CreAction must always be channeled through Knowing. This causes problems, which we must realize and counteract.

The Importance of a Support Function

When the Communication for CreAction is channeled through Knowing it is strongly influenced by the survival forces inherent there. The Communication for CreAction - formulated through declarations, promises and requests - with strong intentions to reach new, creative goals, often will be perceived by our ego as risky, uncertain and insecure. As our ego's primary function is to secure our survival and to preserve and protect everything we have achieved and obtained so far, it will view our new project as a major threat to our survival and will try to convince us that it is unwise to get involved, that it isn't going to succeed, that it will become problematic and risky for our career, etc. It will oppose everything that it sees as a threat to our physical, social, or mental survival. To counteract this we need to establish a support function that assist us in going through with our projects, in keeping our word and in acting within our integrity. The Communication for CreAction establishes the prerequisites and conditions for the support function. A good support function is necessary in all creative projects and is essential for them to be successfully completed. *Creativity shows up in cooperation between people supporting each other to reach the same goal.*

COSTS AND BENEFITS OF REACTIONS AND CREATIONS.

On next the page we present an extreme case analyses of Costs and Benefits analysis of the use of the two types of actions. The Costs and Benefits for using ReActions are shown to the left and for CreActions to the right. In the middle we show the two ultimate and extreme results of using solely one action.

The ultimate and extreme benefit and purpose of ReActions is the preservation, maintenance and "survival" of what already exists, both physically and mentally.

The ultimate and extreme benefits of CreActions are Progress, Development and Success for projects and aliveness, "flow" and well-being for individuals.

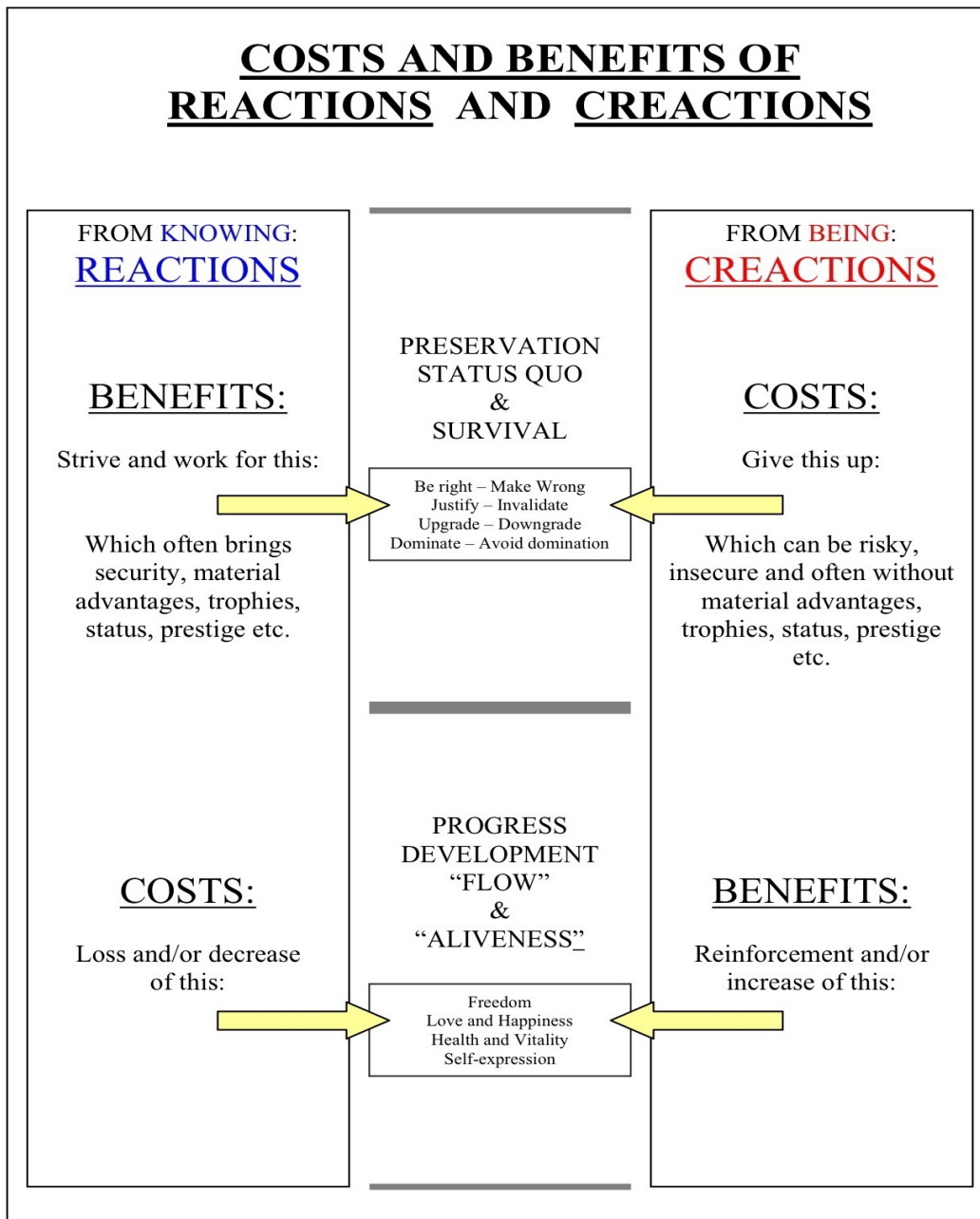
The benefit of utilizing the preserving ReActions is that they bring us security and material advantages at the cost of a decrease in feelings of well-being, aliveness and joy. The cost of CreActions is increased risk, insecurity, lack of material rewards etc. that is a threat to survival, and a loss of material possessions. The cost of CreActions is the same as the benefits of ReActions. We can, therefore, conclude that the Cost of Reaction is the same as the benefits of CreAction.

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lennart.staffan@creativityinaction.eu

Staffan Svahn tel. + 390302007570
www.creativityinaction.eu

Extreme case presentation of costs and benefits²



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SUMMARY COMMENTS

All our actions are normally an indistinctive mixture of ReActions and CreActions. We can distinguish between them only by analyzing the communications that generated them and the quality of the result they produce.

CreActions are normally a very small part of our actions and almost all our daily actions are ReActions. By intentionally increasing the CreActions in relation to the ReAction we can improve our progress and development and increase our aliveness, flow and well-being. This is always a choice that is open to us.

Why is it then so important to increase the amount of CreActions in our lives? Well, in addition to the obvious advantages mentioned above, it is of utmost importance to find sustainable solutions to the problems of our time, and this is only possible through CreActions. One prominent statement by Albert Einstein about problem solving is worth remembering:

“The world we have made as a result of the level of thinking we have done thus far, creates problems we cannot solve at the same level at which we created them”

Translated into our vocabulary this can be expressed as follows:

Problems can be solved and situations improved by changing the communication for ReAction that caused them to a communication for CreAction.

and

*When things go wrong and when results are unsatisfactory:
Change the communication for ReAction to a communication for CreActions*

Finally, the models presented here and summarized in the basic Operating System for all human actions are universal and can be accepted and used globally, as they transcend all cultural, ethnical, philosophical and religious differences that may exist among people.

EDUCATION PROGRAMS OF THE FUTURE

As result of the distinctions that modern science makes between our two internal domains - Being and Knowing - Human resources development and all education programs will in the future be made up of two fundamental parts:

1. Further development of the domain of Knowing for *learning to know* and for the traditional part of *learning to do*.

a) The traditional **pedagogical component**: Adding more, better and/or different knowledge, experience, skills and competence to the already existing ones. This component is what all education and training institutions today concentrate on. As the domain of Knowing of our brain

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Anders Lennart Swahn tel. + 13047543761
lennart.staffan@creativityinaction.eu

Staffan Svahn tel. + 390302007570
www.creativityinaction.eu

processes information in the same way as a computer, students can and will in the future use purposely designed learning programs and computers – knowledge machines - for knowledge learning, for much higher learning efficiency and much lower cost of education at all levels. This component can, in that way, also be designed to suit the individual learning need and mode of each student.

b) **A new psychological component:** The development of the domain of Knowing during the early pre-school years is of critical importance. Some children may have stored knowledge and experiences, which are a result of misinterpretations or misapprehensions of what they have experienced, which, if not corrected, would adversely affect their further learning and life. There may also be some mix-ups and/or variations of handling letter symbols (dyslexia) or other variation from the normal in interpreting and understanding of the surrounding world, which affects their ability to learn and develop in a normal way.

Such variations from the normal should be identified and possibly corrected as early as possible. The psychological (re)learning component should be offered needy students as soon as possible in the education process and it will significantly increase and improve their ability to learn. Today this, learning component is offered mainly as adult education programs, (e.g. Landmark Education programs), which have shown extraordinary good results. These types of programs should, therefore, be incorporated at a very early stage of basic education in the common public school system. These learning programs will positively affect all the four pillars of education.

2. Introducing non-knowledge-based learning of creativity and “Learning to be” from the domain of Being..

The Creativity and “Learning to be” training component: This new creativity component consists of defining and explaining the external true Space/Time reality in which we live and work and the internal domain of Being from which we can generate creative actions, CreActions. This component will support the sustainable development and progress of societies, organizations and enterprises, and “flow”, aliveness and wellbeing for individuals.

It is of highest and crucial importance that this component be included as a basic subject in all common public education and training programs from upper high school to university level so that every student has an opportunity to learn the basic Operating System for all human actions and how creative actions can be generated from our inner Space/Time reality; our domain of Being.

This will give students both an excellent tool and a new outlook on life and work, which will profoundly enhance and strengthen their professional, personal and interpersonal skills.

PROPOSAL FOR A CREATIVITY COURSE PROGRAM

The introduction of a Creativity learning program in a typical education syllabus could start immediately with test and pilot projects in one or more Universities on a national level. A basic course in creativity should be offered to all students during the first term of study. The first module of such a course would consist of a series of lectures presenting and explaining the gradual development of the Time/Space worldview, leading up to the presentation of Operating System for

all human actions. In conjunction with these lectures, lessons, exercises and workshops of both theoretical and practical nature will take place. For the general layout we refer to the basic textbook “CREATIVITY – A Science-based Outlook on Life and Work” and to our website www.creativityinaction.eu, where also suggestions for course layouts can be found.

Creativity learning should also be open to students in the second and following years in form of refresher courses as well as lectures in special topics related to the development of a new Creativity Science. This will also significantly enhance the Entrepreneurship training.

The experiences gained from these pilot projects shall then be presented to the national board for education syllabus and, when approved, a new Creativity section of the syllabus will accordingly be developed and introduced in all University education on a national level.

CONCLUSIONS

The science-based, practical and theoretical background for introducing the use of the larger part of our brain - the domain of Being – for all non-knowledge-based learning in all education programs provides for a **great and universal breakthrough in education everywhere**

We are now entering a new era of education where Creativity and “Learning to be” will be offered as a basic subject to all students. This leading-edge initiative is a breakthrough in education and it gives the students a possibility to understand and use a new way of (cre)acting to promote sustainable development, true progress and success for their projects and personal flow, aliveness and well-being. It gives them new outlook on their life and future work.

This will be a new beginning and a fundamental breakthrough for all human resources development.

Anders Lennart Swahn and Staffan Svahn

REFERENCES

[1] CREATIVITY – A Science-based Outlook on Life and Work – Anders Lennart Swahn and Staffan Svahn – AuthorHouse – September 2008.

[2] Video presentation and other relevant information on training courses are found on the website www.creativityinaction.eu.

BIOGRAPHICAL INFORMATION

Anders Lennart Swahn (M.Sc. in Civil Engineering, CTH, Göteborg, Sweden, 1958) has a distinguished global career as engineer, technical education expert (UNESCO, ILO, World Bank), industrialist and creativity teacher and researcher.

Staffan Svahn, (M.Sc. in Industrial Engineering and Management, LiTH, Linköping, Sweden, 1985) has an international career within the retail and wine industry and as a human resource consultant, creativity teacher and researcher.