# HOW TO CREATE SOUL AND IDENTITY IN A PROJECT? RITUALS AND THEATRE IN ENGINEERING DESIGN

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Abstract

This paper is about creating identity, soul and motivation in engineering design projects. We have combined theory of rituals from social anthropology and practical knowledge from the theatre and brought it into the classroom of engineering design.

*Keywords: design education, events, ritual, theatre*

## 1. Introduction

Success in projects of innovation depends on some form of inner motivation for designers and teams. One needs to identify both with the team and the task. The project needs to have some kind of "soul": it must be "alive". How can we make this happen in design-work and education?

We approached this question in the "classroom laboratory" at the Institute for Engineering Design and Materials Technology at NTNU. This is a place where we develop and test methods and environments for engineering design. The following essay is the story of our experiences during fall 2002.

The setting is a fourth year course in engineering design where learning is action-based (Problem Based Learning). The learning-process is much like a commercial design-process, from problem to product. At the beginning of the term the student teams are given a design-challenge. This term the teams where to design, either a motorised pogo-stick, or a water-powered woodcutter. During the term they research, design and build the product, and at the end of the term they present a prototype. The work is organised according to a milestone-based method [1]. We have made the milestones into rituals that not only are tools to structure the process and a point of communication between the teams and the management, but also a happening that gathers the whole project. Here the teams present their work and ideas for teachers, investors, and each other. Charing experiences are essential for learning and we want presentation skills to be an essential part of the course [2]. Focusing on tem-building and the task of creating a soul in the project we also stress other things: for example that each team should have a good name that reflects and reviles their identity. We also want each team know their story, as they each week put up a poster telling where they are going and what they have done. The classroom is made into a project *home*, as the walls become cowered with posters from the teams. It should be very difficult to enter that room without sensing the work and visions of the teams: the soul of the project.

Into this classroom we introduced instructors from the theatre in order to bring our work with team-spirit and identity even further. Other reasons for introducing theatre, was to train presentation skills and open the creative potential in the teams. These experiences will not be presented here, where we shall concentrate on the question of team-building and identity [3].

## 2.    Opening the self

The people from the theatre worked with the students for 6 -7 hours at a time during two of the term's four milestone-days. Here is what happened:

The first day started with lots of excitement. This was clearly something new for us all. As the theatre people arrived, "the method sisters" as they called themselves, it was clear to every engineer that this was something different from what we normally saw in these rooms. The sisters where dressed in "flower-punk" like clothes and radiated an aura of colour and playfulness. Still they acted disciplined and soon made the students do things none of them would have guessed that they would find themselves doing. As an observer I was stunned by how fast the everyday self-control was tossed away in the group.

The first day started with exercises to loosen up and "get warm" as the sisters said. In the beginning there is a little boundary one needs to cross to be able to open up for each other. In the very first exercise we would work in pairs, just counting 1, 2, 3 in such a way that I say "one" to you, you say "two" to me, and I reply with "three". After a while we would replace the numbers, one by one, by improvised sounds and movements. This is where I found the line that needed to be crossed. In order to make a strange movement, and an arbitrary sound to accompany it, and present this in public you just have to let go of the everyday mask you wear.

There are sides of our selves we regard as intimate and want to keep for ourselves. There are ways of behaving we do not want others to see us do [4]. In any culture people have such sides of themselves inside a boundary we do not let others cross. It is guarded by embarrassment. In the theatre exercises we all met this boundary at some point. In meeting it, one needs to be pushed across it. This is what the method sisters did.

As soon as the line is crossed the embarrassment is gone and the expressions we make "come to life" so to speak. We have opened up. We experienced how the energy level built up as we shot 1, 2, 3, or their expressive replacements at each other. The whole group soon came to boil. The sate we reached at that moment can be understood as a state anthropologists have called "communitas" [5]. This is the state in which you find your self in the heat of a ritual. Here the ordinary structure of society is temporarily set aside and another reality is opened up so to speak. The most striking characteristic of this state regards self: the sense of self moves from the individual person to the group as a whole. This is why it is called communitas; it is a collective state. The everyday "me" with its self perception formed by locally constructed roles and hierarchical organisation is temporally dissolved on behalf of the whole ritual. As the everyday social reality also is dissolved in this state and we are open to unite with whatever reality the ritual presents. In freeing ourselves from everyday conditioning we are free to play with other roles and realities.

The term communitas has much in common with the idea of "flow", a state of intense concentration, where one is totally absorbed by the task one is doing [6]. The state of communitas implies for its participants what is called an "altered state of consciousness". Communitas is a state of high energy and awareness in addition to an expanded sense of selfhood; it may be called a state of "bliss". If we approach the phenomenon through studies of the brain, this state is said to correlate with a change in relations between the ordinary dominant left-hemisphere, (associated with analytical, linear-logical thinking), and the right, (associated with holistic, timeless and "mystical" thought). In contrast to the asymmetric activity of the two hemispheres (mostly left-side dominated) in normal waking states, the ecstatic bliss is a state where both hemispheres are stimulated at a maximum and seem to work in total harmony. In this state also the rest of the nervous system seem to be

harmonically involved [7]. Still we should avoid focusing too much on the brain. The main characteristic of communitas is after all that it is a *collective* state, it is happening *between* just as much as *in* people. As such it is more of an "atmosphere" than a brain-state.

Communitas-like states and atmospheres are not only found in archaic rituals. They can also be encountered in our own society, for example at a soccer-mach, a rave party or the company's Christmas-party, or even during theatre exercises in a classroom. Think of the soccer-match: how many have not experienced to see the straightest guy transform into a fanatically screaming berserk? The match, like the ritual, provides an atmosphere where the social rules governing this person's behaviour is set aside. On a normal day at work it would not have been possible for this man to stand on his office-chair and scream: "Kill them, kill them!!!!" It would neither have been possible even if we said to him: "Ok, you are free to utter what you like in regard to this case." No, the right kind of atmosphere must be created; it must be an atmosphere that inspires and brings forth that kind of utterances. In the heat of a football-mach, together with 20 000 other fans, this atmosphere exists, and it is strong enough to let anyone be carried away. Not many think of their ordinary self presentation in the moment the ball hits the net. Many not so fanatic soccer-fans have to their surprise found themselves standing with their hands in the air, screaming, as their self had been totally absorbed in the game.

This is very similar to what happened during the warming-up exercise at our theatre rituals. An atmosphere was created that was strong enough to set the everyday self-presentation aside and opened for another way of being.

## 3.     Creating atmosphere

It is not a simple task to create the right atmosphere for opening up in this way, but this is what the theatre people managed to do. There must be an atmosphere that combines discipline with playfulness, and energy with subtlety. It is a matter of providing enough energy to overcome the norms that hold people back, at the same time as one must pay attention to the group as a whole as well as every individual. All of us have different limits and need to be challenged differently.

The ritual space/time must also be free from the everyday constrains that bind us in our roles. The everyday social structure must go and the normal expectations of performances must go.

But it is not just a matter of providing an atmosphere that opens for communitas. It is not arbitrary what we fill this atmosphere with. A common recipe in attempts at teambuilding is to let the team share some strong experience (like river-rafting or climbing) that binds them together. But what are they bonded together *as*? The point is to make sure that they are bonded together *in relation to the task* they have. It is the same with the ritual communitas. It is not much worth if it is not tuned toward the right purpose.

The content of the ritual must have to do with what we want to accomplish with it. This can for example be to open for creativity, or as in our example: the creation of spirit and identity in the team and soul in the project.

## 4.     Working with identity

When we all where "warmed up", attention gradually moved to the different projects, and we focused on our reasons for doing the projects we where doing. We started to present each other, two and two for the rest of the class. We did this in different ways. We would introduce

our partner as if he for example was a celebrity or a rock-star, not just anybody. In particular we had to present the projects as something special. After this session we started to argue for our own *choice* of project. This argument had to be convincing. We had to argue in such a way that it was obvious for the others that this was the only sensible choice to do. There should be no doubt that this was *the* project. The method sisters would stop us as soon as anyone fell back into old habits of just listing facts to each other or not putting our soul in the arguments. The sisters would say things like: "No, I don't believe you! You do not sound like you *mean* it." They would keep on doing this again and again until the students *actually meant what they said*. And everyone believed them! We kept arguing for our choices in different ways, at the end, everyone where split up in two gangs, one where the pogo-sticks the other the wood-cutters. The two gangs would shout their arguments to each other until their faces turned red.

We did a lot more during the theatre-days, but these examples should be sufficient to provide a clue of what it is all about. Before we proceed there is now one question we must ask: what is it that we look for with teambuilding and identity? We want to give the project a "soul" we say, making it into something that really matters for those who take part in it. It is something to identify with and be proud of. The key-word here is identity. The team needs to be *my* team; I must look at myself as part of *this* team. This project needs to be *our* project, and *we* are the ones that make *this* thing.

## 5. Passions

The territory of identity is not like other things we learn in school; it cannot be thought from books: it is not rational. Think of how absurd it sounds when a football supporter tries to explain in rational terms why his team is the only team worth living for. It is the same with a design-project. You just cannot understand or argue in a rational way why you identify with this or that project. Identity belongs in the territory of what has been labelled irrational. This is what has made it so difficult to approach for a science which mostly deals in rationality. This is a reason the theatre is such an effective tool in this respect. It incorporates what is not rational and deals with whole persons, including our irrational and emotional sides.

It belongs in the field of passions and emotions. This is also the domain of the theatre. During the theatre exercises it was for example not so important what we said as *how* we said it. The emotional side of language lies very much in the *way* we speak and it was the energy level and sincerity by which we had to stand up for our ideas that seemed to make it work. The students actually need to become emotionally involved and in this way *mean* what they say. This seems to be necessary in order to actually build a living team spirit. Without the opening exercises it would have been impossible to raise this kind of sincerity. If we had not already "opened up our selves" we would probably not have managed to let ourselves be involved enough to let what happened "enter our selves".

## 6. The self of individuals, teams and project

The self is not an object, it is ourselves. It cannot be taken out of our body, or examined like we can do with an object. It is more like a feeling, or rather an approach to the world. We relate to the world on behalf of something. This is our self.

If we examine the nature of our self carefully, we will find that contrary to what many believe, it is not limited to individual persons. Whether we are conscious of it or not, at our emotional level we incorporate in our self what we identify with. As such we may

incorporate, as our self, not only our physical body, but also other things we identify with. This may be ideas, our team, our project; actually anything, as long as we identify with it [8].

The self emerges in relation to its surroundings. As such it is constituted not only by what is inside it, so to speak, but just as much what is outside. Any thing is defined by some kind of boarder, whether visible or invisible [9]. It is the boarders that make it emerge as a thing and stand out from the rest of the world. The boarder itself is not a part of the thing. It only emerges in the difference between the thing and what is not the thing; the boarder is always in between. The boarder around a self is also dependent on what is around it to emerge. This means that the self actually is dependent on something different from itself in order to be identified. In practice this means that it is our opposition that in a way defines who we are. When I am attacked from outside, I defend myself. I am the self. If my family is attacked from outside, I will defend all of us. The self includes us all. If my ides are attacked from outside, I will defend them as my self. It is the same cognitive pattern that appears when I revile the most primal emotions during a football-game. My self is with the team. If they loose, I loose, if they win, I win. At that moment, my self as a person does not matter, only the team.

The stronger the opposition form outside the unit is, the stronger is the unity within. When facing an external opponent, we stand together as one. If we have no external opponent, we fall back into our personal selves. The external opponent binds the self together and creates unity within.

In teams of engineering-design the same mechanisms are at play. This is a reason why arguing passionately for ones project is so effective in creating identity. When the team is challenged to do this, it transfers the self from the separate individuals to the team as a whole and their project. It is therefore important for the team-spirit to keep on defending what they do externally, not only in theatre exercises, but also for example by regularly having to present and defend their work for other teams, teachers and the investor.

An important point is that the students not only had to defend their product, but their *choice* of project. This touches the basic motivations and visions behind their projects and as such what brings the team together in the most fundamental sense.

We must still not forget the inside of the self. This is the life of the team itself and the project. It consists of our visions, ideas, and values. It is the experience of all we have been through together: challenges and solutions, moments of frustration, moments of joy and moments of hard work. It is moments, from the boring everyday to the ecstatic ritual. The soul of a team lies in their memory of these moments: their story. This story is a "mythical" narrative full of meaning. Milestones and rituals stand out and count the pace in it. As the teams put up a poster of their work every week it helps telling this story. This is the soul of the project.

## 7.     The classroom laboratory

How do we create knowledge in this field? In the "classroom laboratory" at NTNU we work in a cross-disciplinary research-team with members from disciplines ranging from mechanical engineering and design to human sciences like linguistics, psychology and anthropology. This essay is written from the perspective of social anthropology. The method we have relied on is the classical method of field-work in social anthropology: participating observation. This is a purely qualitative approach, where the researcher uses him or herself as the tool of investigation. The focus is on understanding, not explaining. As such this method is a practical application of hermeneutics, the science of understanding. An essential point with this method is that we not only observe, but actually take part in the activity in the classroom.

It is by taking part that the observer actually will know what is going on [10]. In combination with participation we rely on depth-interviews of students and teachers. These goes hand in hand with the observation and are based on what is observed.

There is a good reason for using such a method in this field: If we approach rituals in terms of for example "brain-states", it is possible to research them in the traditional scientific manner where the researcher is firmly separated form the object of study (in order to provide "objectivity"). But if we want to look at the "atmosphere" in the classroom, we need another approach. The atmosphere cannot be examined as some kind of object separated from the observer. It is not a phenomenon that can be measured. It fills the whole situation where it appears. It exists in the relations between people, in the mental and physical state of each individual and in the room as a whole. As such it cannot be grasped, it can only be felt. The observer has to be there to feel it. (In most cases you do not sense the atmosphere in a room through a transcription or a video-recording.) Also the interviews must be arranged in such a way that they reach the atmosphere, and make the subjects reflect on it.

Despite the reliance of the subjective experience of the observer, this is not a subjective method in the sense that the information is unreliable. The observer has to develop the ability to participate in such a way that it is possible to trust ones observations and understanding. This is what the hermeneutics of fieldwork is about.

## 8.    Results

What results can we show after this term's experiments with rituals and theatre in the classroom? First of all we should note that the results are not final. We work according to the principle of "rapid prototyping", where the results from one term make the beginning of next terms improvements. This is also a reason that the objectivity is not such an important point. If there is a problem in our understanding, we will discover it the next term when applying our insights. In any case, there is still much to improve in the classroom and still much for us to learn.

We have learned that theatre is an extremely effective tool for boosting motivation in a project. Still, it is a tool that should be used with care and only at specific stages in the design-process, as it really breaks up the everyday pace of engineering design. Also the other things we have done to create identity (such as milestone-rituals and presentations, the focus on names for teams, and posters on the walls) have been effective. All together, our work with soul and identity seem to have paid off, as most of the students have put in much more work in this project than in other, similar projects. The amount of extra work the students put in a project tells a lot about how successful the course is. The students themselves tell us that this is a project "that matters" for them.

**References**

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 [2]     For more on milestone-rituals, see Fyhn, H. et.al., "Being Present In Product Design: Myth and Ritual for Learning and Flow" In "Proceedings Nordesign 2002. Visions and Values in Engineering Design. Tapir Trykk Trondheim", 2002.

[3]	For an account of all our experiences this term, see our report "Physual Designing 2002, Dispersed Collaboration in Engineering Design". Tair Trykk, Trondheim, 2003. The report is also to be found on web: http://www.immtek.ntnu.no/forsk/aksjonslaering/index.html

[4]	See for example Goffman, Erving, "The Presentation of Self in Everyday Life". The Penguin Press, 1971.

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[7]	Regarding the brain-states of rituals, see Lex, B., "The neurobiology of Ritual Trance" in d'Aquili, E. et.al. (eds.), "The Spectrum of Ritual", Columbia University Press, 1979. pp 117ff and Willis, Roy [4], pp.116-118.

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[10]	For more of methodology in the classroom laboratory, see Hildre, H. P. et.al., "Klasserommet som forskningslaboratorium". NTNU/Norges Forskningsråd, 2001. (ISBN 82-91917-12-4). Also at the web: http://www.immtek.ntnu.no/forsk/aksjonslaering/index.html