

some said, no, and those people who agreed and who met our other criteria were included in the trial. We found benefits with both theory and practice, Again, it's been published in psychological reports. I'll be happy to send you the paper.

The better benefits were with practice but interestingly we got reduction in anxiety even with theory alone. Very difficult to imagine because we think that yoga has to be practised, right? So I always tell people wherever, in India or across the world, just put up in your yoga hall one thought so when the person is going into guided relaxation, one thought from the Upanishads, or from any text which you like, one good thought so they go away with a good message.

What about the restorative effects of meditation. We've done several studies, one of them is summarized in 2015 in Biomed Research International, a meta analysis and review. I actually wanted to put this in. A study done by a particularly special guru, who passed away, who left his mortal body last year in 2015 and who believed in silence meditation as restorative. It was a very nice study. As you see, hibernation is restorative and, indeed, whatever variables we measure, showed that meditation was restorative. But meditation need not be the picture on the left. Ideally, one should reach a mental state when you can mediate even in a crowded bus. That is the essence that is goal of yoga. This is how we start. This is how we hope to end. While in the midst of daily life we should be detached but compassionate and full of love. Detachment doesn't mean we don't care anymore about other people. And through the practice of yoga we should be able to be blissfully happy. This is the part at which I'll end. Thank you very much

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### **From Yoga To Yoga Science – To A Core Curriculum Of Yoga**

By Reinhard Bögle , Yoga Forum Munchen, Germany

Reinhard Bögle studied education and specialised on adult education. He is head of yoga teachers' education at the Yoga Forum München, Germany; scientific adviser for System energetics; has taught yoga for sports teachers at the Technical University München. He is Adjunct Professor at the Center for Behavioural Medicine, Pune, India, and member of the board of IASTAM.

Who are we? We are the Yoga Forum Munich which was founded 1990, 25 years ago. The honorary president is Robert Fenzl, the former academic director of the sports teacher education department, Technical University of Munich. There is a scientific advisory board, with Dr. Narendra Bhatt (Ayurveda), Dr. S.N. Bhavsar (Sanskrit, Physics, Yoga, Ayurveda), Dr. Heinz Strauss (founder of System-Energetics a systemic psychology and psychotherapy), Dr. Roland Lüthi (Health Science, Communication), Dr. Leena Phadke (Physiology), Dr. Sanjay Phadke (Neuroscience), et al. I am the director of this institute, which is primarily dedicated to educating yoga teachers.

Why is this pre-workshop important for this first international conference (ICAAM)? Over the last years IASTAM-India hosted several conferences and I had the opportunity to take part in some of them, but this is the first international one. So this year, at least, we thought, this is now the time when the whole world is making a move in the direction of yoga. Because of this fact we are interested in organising this pre-conference on yoga with an interest in health and in yoga.

The WHO has a program for promoting more yoga for the years 2014 to 2023. UNESCO has a program, a very interesting program, Learning to Know, Learning to Do, Learning to Live Together, and, what is very important for yoga, and here is where yoga comes in, Learning to Be. And these are their four pillars of what they think people have to learn in future and this is where yoga comes in, yoga fits very well here.

### Yoga interests the world and people worldwide

- WHO first health definition 1946 – health is bio-psychosocial
- WHO second health definition 1986 – health is created where people live, at their workplace, at school, in the family – from here health promotion started
- WHO Traditional Medicine Strategy 2014-23: For more yoga for the world
- UNESCO for the 21st century: Learning – The Treasure Within: *learning to know, learning to do, learning to live together, learning to be.*
- UN declares June 21 International Day of Yoga – expectations are holistic benefits, resilience, relief from stress, development and peace (said UN Secretary-General Ban Ki-moon on Dec 11 2014)
- Millions of people worldwide practice yoga



We know about the gift of India to the world, which your Indian President, Narendra Modi, declared with the Day of Yoga, and, of course millions and millions of people worldwide are practising yoga. So yoga for us is no more “Indian”. This is part of history. Now yoga is everywhere and this makes quite a big difference from the standpoint of education. That means it is no longer only part of the Indian education system, whether

official or unofficial, or whatever. It has become part of the worldwide education system. What we need is, and, I am very happy that you are here and others are here, we need to open the dialog. Because in education these things can only be developed in a dialog. Earlier there was one person who made one syllabus and that was it. But then it has changed to this worldwide activity, it is changing to science and then we need a dialog. Dialogs can be opened on a lot of levels, between institutions, such as we see here, between Asia and India, between Europe and India, between single people, and so on. Dialogs can happen and these are important dialogs on a lot of levels.

Do these dialogs work? Not always well. Some groups think that dialogs are unimportant and they don't participate. At some stages dialogs stagnate and nothing moves forward. Sometimes more important things in dialogs are going on in the back room and only a few people sit together unofficially. From this background I want to give some suggestions for the future.

Dialog is not a one-way street. Earlier you could say, yoga came from India, went abroad, teachers were coming and we heard about the history this morning. But now it is worldwide and there are a lot of changes going on because of this.

Yesterday, for example, I saw plastic yoga mats in the Lonavla Yoga institute. Are there plastic yoga mats mentioned in any Sanskrit text? Nowhere. This is a modern addition. I know of mats from the Himalayas. They used skins of trees to sit on them. The skins are insulating material, but there is no tradition of plastic. So the whole international market is now after yoga and some professors in our university talk about the economics of yoga-about the influence of money-making in yoga.

Then, there is the dialog between the teacher and the student and the student reacts to the teacher and the teacher has to explain yoga in the dialog. I will come to that. This is a very important dialog in yoga.

What we think in education, is that we first identify Yoga as a discipline. This means that knowledge is brought into such a form that it can be thought and practised. There is internal terminology and there is terminology from external sources, which plays a less important role.

Then there is application of yoga and we need theory /concepts for that. With this process reflection starts on several levels like applications and theories, and we need a theory of reflection and a process of reflection. We think these points foster critical thinking and getting new ideas, proving things and so on. So if you say yoga is a discipline of knowledge brought into a form so it is teachable, then these questions arise.

And we see terminology. We heard a lot of terminology yesterday and today. Part of the terminology is external to yoga, not yoga terminology. Part is internal to yoga, so yoga terminology. So the next step is when we think about applications: What is yoga good for? Who is yoga good for? We have to apply

We need also a theory of reflection, not in the sense that we reflect and then we discuss, but science itself makes its own reflection. This is important and not an easy subject, for the next years when yoga becomes a science, this yoga science has a self-description what it is and self-reflection has to be included. This is also happening in physics and other disciplines. Science has to ask itself just what kind of science it is. Then there is the observer who looks at the discipline and defines it but, of course, there is always some bias, from one point of view. This is a complicated process.

Then we have reflection on the level of the learner. Yoga cannot be learned without reflection. Reflection on the level of the teacher, on the content of teaching, and, as I said, on the science itself. Here are some of the basic yoga terms. I don't want to go into detail here.

We had this already in the morning and they are clearly noted on the following charts.

| Ayurveda – Basic terms                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yoga - Basic terms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Samkhya – Basic terms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• 3 dosas – vata, pitta, kapha – the three functional system</li> <li>• 7 dhatus, 5 mahabhutas</li> <li>• 107 marmas</li> <li>• 13 vegas – calls of nature</li> <li>• The 4 yogas – samayoga, hinayoga, atiyoga, mithayoga</li> <li>• manas (and hita/ahita sukha/duhkha) 10 Indriyas</li> <li>• prakriti – prakriti sthapana</li> <li>• The six stages of health and disease</li> <li>• The logic of health and disease</li> </ul> | <ul style="list-style-type: none"> <li>• Cit – the verb which describes the basic activity of thinking, feeling, perceiving, acting in a integrated stage</li> <li>• Action – in the sense of the activity of vayu, the main responsible functional system for movement and action (together with pitta and kapha, intensity and endurance).</li> <li>• Asana as a term which summarizes all the eight parts of yoga</li> <li>• Abhyasa and vairaghya the ongoing process of improvement and not to be caught up (involved, hineinsteigern not allow to take hold, identify)</li> <li>• Other terms from Patanjali yogasutras</li> <li>• Basic terms from Ayurveda, Samkhya, Anatomie, Psychology, and others</li> </ul> | <ul style="list-style-type: none"> <li>• 25 tattvas: purusa, prakriti, buddhi, ahamkara, manas, indriyas, etc.</li> <li>• The double basic-relationship of purusa and prakriti (inner and outer word, inner and outer oecology)</li> <li>• The action-perception scheme: The activity of the inner instrument in relation to the inner and to the outer world</li> <li>• Sattva-rajasa-tamas, the threefold inner strand/guideline</li> <li>• The proper understanding and the misunderstanding purusa prakriti</li> <li>• The threefold suffering and the desire to know (jnana) how to counteract</li> </ul> |

Now when we have developed yoga into a science, we also need a core curriculum, which is our opinion, from an educational perspective. We heard this in the morning how an Indian organization tried to develop a basic curriculum for yoga so that there are standards and clear guidelines for teaching. This also has to be clarified, not only for teaching but for the science itself.

The basic idea is that yoga is a life science. I think there is no question about it. Yoga is a life science which deals with social, mental, biological, ecological and conscious systems, to use modern language. Then there is the main differentiation which is made by people as well as by the life science, with two sides, the differentiation between life and death. I am grateful that some of the earlier speakers reported on the tendency of pupils in Indian schools to commit suicide when they have poor marks (and some times even when the marks are not poor but below expectations). This shows that between life and death, there is a basic decision which everybody takes knowingly or unknowingly.

Then there is this important distinction of dual states in the Yogasutras between yogic knowledge and non-yogic knowledge (avidya). And the challenge to shift from non-knowledge to knowledge. A methodology is added.

And here comes one very important influence - which we have been witnessing in medicine, law, in psychotherapy, and in all these types of sciences, that is, the doctor, the judge, or in our case, the teacher. Here comes the role of the professional. Because the main decisions are taken by the professional whether the doctor says, you are healthy or not healthy, whether the lawyer says, this is right, this is not right, or the judge, and so on. In yoga the teacher says, this is correct, this is not correct. The basic decisions as to what is taught and what is learned - not only the teaching content itself is important but the decision and guidance of the teacher.

These are very important details to keep in mind. And one of the questions from the morning was, how the Indian tradition of the teacher fits. It fits very well. It is a very important position in the whole teaching process. It is a circular process from beginning to end. The teacher has to judge, and to support the person/learner whether he is correct with yogic knowledge or without yogic knowledge

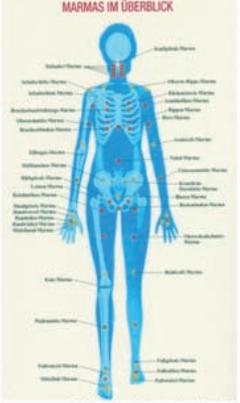
And there have to be educational criteria for that. If we pause for a moment we realize that on the one hand yoga in the described way has to become a science. That is very clear for me. On the other hand it is very unclear what yoga is if we come down to the details and it has to be clarified.

The yoga sutras gives us more than one important hint how to clarify that. In the Yogasutras the Yamas and Niyamas are explained as the start of the learning process of yoga. They are “supports”, “forbearances”, “do’s and dont’s”, guidelines they are of stimulative nature. In general, they present the idea that a human being has to regulate a lot of things. One example is ahimsa “non-violence, non-hostility” a guideline for personal regulations. Often it is called ethical decisions. Sutra II.31. says these regulations always have to consider jati (starting situation, birth), desa (space, place), kala (time) and samaya (special circumstances). All four angles together are important always for the regulations required within the yogic way of life..

The next point is that yoga deals with pain. Yoga uses the traditional system of 107 marmas, documented in the following slide.

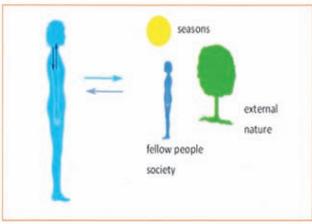
Dharana / focusing on important regions / deśas and get the infos from there is the main factor of influence on

social, psychological and somatic decisions for life



© Bogle F., Freiburg yoga, München 2006

**Ayus** is the coherence of life in body, senses, and mind of a person who is able to act.  
**Svastha** is the term for health in Ayurveda. Literally: inherent stabilisation.  
Regulated, stabilised relations within and with the outer world



Every person lives in her/his inner and outer context:  
**The double basic relations**

These points can be taken as the main points of confluence of yoga in the social dimension, psychological dimension and somatic dimensions. Then we have another concept in Ayurveda, about Ayus and Health this is that there is an inter-relationship between the person and his surroundings. Within the person himself/herself there are different systems at work, for example, lungs, brains and between the person and their surroundings there are different processes like the seasons, daily routines during the day and the night, and, of course, other people, society. This has already been nicely explained I don't have to go into detail on that.

Now when we reflect on all this it leads to the core curriculum of yoga. In education we do research as to how our curriculum should be constructed, how it should be developed. You usually don't hear any thing about that. That's sort of the “back room” of education. Things are published but nobody reads them, maybe just my small group. In my study I put a lot of effort into how a curriculum is constructed with a goal to develop a curriculum for yoga.

You will not find what you would normally find in a curriculum, a list of topics of a syllabus, instead you will find a structure where you can develop questions which can be answered later. So I have tried to put the whole structure of the science of yoga into a diagram. We have several fields in which we

have to work.

The diagram is simple: in the first column you find “experience” on a physical, psychological and subject-oriented level. This is the normal experience of a person. In the second column you will find the traditions and the influences there from society. The combination of learning topics is organized by society in a specific culture and historical period and we can analyze this.

**Basic structure for yoga core curriculum (Bögle 1995, 2016)**

|                                            | Experience | Tradition / Society | Scientific Basis |
|--------------------------------------------|------------|---------------------|------------------|
| Bodily Processing                          | 1.1.       | 1.2.                | 1.3.             |
| Psychological/ mental-emotional Processing | 2.1.       | 2.2.                | 2.3.             |
| Subject / Individuum                       | 3.1.       | 3.2.                | 3.3.             |

And in the third column you will find the scientific basis and this is important for us in future. That yoga itself becomes a science. We see that a lot of people from other sciences study yoga, language, history, sociology and so on. This is important and helpful but it doesn't mean that yoga is a science in itself. Yoga as a science in itself, of course, interacts with the other sciences. So traditionally there was no last column which we understand as modern science. The institute in Lonavla was the first institute in India which started to look at yoga from the

perspective of modern medical scientific methods. Nowadays we are able to fill this last column with values.

We see we they must include anatomy, physiology, biomechanics, neurology with all the loops in the nervous system, etc., including yogic anatomy, physiology and movement mechanics, stable yogic patterns with parameters as well as psychology and points from yoga itself.

In the next block are the psychological processes and here we look at the whole development of a human being from childhood through adulthood and from simple to complex learning processes, for example. There is also yogic psychology and important points of yogic learning. Yogic embodied mindsets with parameters can be described (yogic samskaras).

And in the final block we see here are the considerations of how personal and social identity can be developed and balanced. When we reflect on ourselves we find ourselves in a particular “mindset” which must be recognized as something individual to us and perhaps modified. There is yogic practical philosophy and epistemology, together with the basic dimension of life and death and the development of life.

**Basic structure for yoga core curriculum - Asana**

|                          | Experience                         | Tradition / Society                               | Scientific Basis                                            |
|--------------------------|------------------------------------|---------------------------------------------------|-------------------------------------------------------------|
| Bodily Processing        | A person practices asanas          | Living in a society with specific use of the body | Neuroscience, yoga, biomechanics, functional kinetics, etc. |
| Psychological Processing | Personal interpretation experience | Social understanding of the experience            | Neuropsychology, yogic conceptual research                  |
| Subject / Individuum     | Personal identity                  | Social identity                                   | Yogic philosophy, reflexions about the person               |

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If we look with this in mind to the practice of an asana we find the following points. Whenever a person practices an asana he/she does something with his/her own body. Then in the next stage there is an experience which the person interprets for him/herself. This experience becomes an integral part of the person's identity, his/her self-awareness.

Our next column tradition and society shows that a person doesn't live in isolation, but rather in a particular society which includes a particular gestures and bodily movements. Then we see that society places a psychological interpretation on this pattern of social body language. And this leads the individual and the group to a shared social identity.

Then we have to think, as I said earlier, just how a personal and social identity can be developed in a co-evolution and balanced. This balance is important for the future development of a person and for longevity.

Looking back at when I started yoga in Germany there's a joke. The word "yoga" sounds like the German word for "curd" which is "yoghurt". So they would joke about it and say, yes I know yoga is something like yoghurt (curd). But now this has changed a lot and yoga is everywhere in Germany. There is now too much talking about yoga. Somebody with a sports background shows up in a yoga group and suddenly he is a yoga teacher! These are changes in culture and society.

If we look from a marma point of view, our students, in the beginning have no idea about marmas and no idea about how it is to get a sensual feeling through touch on the marma. So we teach them to try to feel the experience of the marma and integrate it into his/her own life. We see cultural differences. Some societies know about marmas, some don't. Then there is the question of the foundation of person within the society with the knowledge of the marma. Then we have, of course, bodily descriptions of marmas, and psychological descriptions and we have the basic ideas of life and death and stress in this third field.

### Basic structure for yoga core curriculum - Marma

|                          | Experience                                                  | Tradition / Society                                    | Scientific Basis                                              |
|--------------------------|-------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------|
| Bodily Processing        | Through marmas experience your own body                     | Marmas often unknown, known in Ayurveda and Yoga       | Bodily description and studies of marmas movement analysis    |
| Psychological Processing | Have one's own psychological experience                     | Importance/non-importance of marmas in culture/society | Studies on mental/emotional processes on marmas (7pranas)     |
| Subject / Individuum     | You interpret your own integrated experience (life – death) | Foundations of the life of a person in society         | Life / death of the individuum (stress, critical life events) |

So maybe you understand a bit how this can be used to place topics under the relevant categories which then allows for easier discussion. In recent discussions over the past days I have observed that these fields have been combined and so the discussions have not always been fruitful. This is one of the first advantages of a structural pattern. It helps to bring statement and questions in the proper fields. Another advantage is that it helps to develop questions about the science itself and about the others scientific disciplines and to generate discussions on specific topics. One of the most important advantages of a structural approach is that you can see the topic from many different perspectives and the schema allows us to change and combine perspectives. Another advantage is, learning targets can be defined and curriculum elements can be created.

**Advantages of a core curriculum for Yoga in the form of a basic structure**

- Helps to transform the structure of the science into teaching
- Questions can be asked about one's own discipline and about other disciplines
- Learning targets can be developed and curriculum elements created
- Allows change of perspectives

**Yoga and the surrounding disciplines**



We have of, course, the disciplines around yoga. For me, I start with education. Others may start with their own discipline. We have the spheres around yoga. Of course we have to learn a lot from Sanskrit, not so easy to understand, and it is the basic language of yoga, as we also heard in the morning. We now will question the sciences around yoga. We will ask the experts, for example, what are the words, and the meanings and the proper translations, how are they derived. Indian physics are different from modern physics. How do you understand “space”. This has many implications for yoga because we think originally people had the Indian concept of space in their minds - oh, we are very clear, we have the right concepts in our minds, but not so for everyone.

I know from my colleagues in the intercultural exchange there are always problems of misunderstanding. Different cultures use different words for different things and every culture thinks it, alone, is right. I once had such a problem in India about espresso and cappuccino. I thought, I am from Munich, and Italy is very close to us. We say that Munich is the most northern city in Italy. We are more Italian; we love Italy; we have the largest number of Italian restaurants compared to other types of restaurants, so I am sure I know what an espresso is. But the Indian person said it is with milk and cream and this is espresso. And I thought, this is unbelievable! This is not espresso. Then I came to Pune and then the people around me ordered espresso and what came? Coffee with milk and cream. Then I saw, everybody was completely right, but we could not understand each other. The language becomes the problem.

Therefore, we need the chance to have many different perspectives and observers and not just rely on language. We have also other problems. Some yoga teachers say to create space in the joint as an instruction. I have heard this very often. But from biomechanics we know there is never space in the joint, impossible. Professor B. Moriggl from functional anatomy says, if there is space in the joint, then it is in a ruined state. Of course I understand what the yoga teachers mean when they say to create space in the joint. They mean that the compressed muscles around the joint should be looser. And the weight has to go from one bone directly to the other and that makes the muscles looser. So when we see yoga instructions we have to think about this communication problem. This is only one example. So if we want yoga to be recognized as a science we must try to solve such problems, recognized them and determine which is true and decide how to talk about these matters in future.

We have to develop theses and prove them not only from a yogic point of view but from the viewpoint of all the other individual sciences around yoga. And sometimes we have to fight to put the yoga parameters into the literature and the research. We may have to develop measurement instruments based on yogic experiences and not just use those based on the other sciences.

A core curriculum needs conceptual studies and empirical research (supported by experience) which lead to yogic science. This takes place through development of hypotheses, theories and prove of them. A curriculum nowadays is not just a body of knowledge. It is a dynamic process of the actual learning about the unknown through teacher—learner interaction in an ongoing process. This is a dynamic process, as people change, society changes, the world changes as new ideas are brought forth,

an on-going process of change and development.

Then the third point: qualifications. How a person is qualified to do something is the main point of a curriculum. At the end of going through the curriculum people are qualified. The small parts, called curriculum elements, are important to learn things to enable the person to handle all the different situations they will face in Yoga and in 24 hours in a successful way.

**Question:** Do you have an idea how to solve the problem of the guru.

**Answer:** Let's go back to this slide. The point is in the tradition. As we heard in the morning, there is a guru, the teacher. What we expect in yoga, and this can be different in other disciplines, we expect the teachers can do the things which they are teaching. Now in sports, the sports teachers, in one year they were in average 55 years old, and they could not do what they were teaching. So the kids were laughing at them, saying, you are teaching us to do something which you yourself cannot do! In yogic tradition the teacher knows through personal experience and practice what he is doing. Second point is the teacher has his own proper, personal interpretation of the things which are going on in him and he can talk about it. He's not a silent teacher who decided to shut his mouth for years, otherwise he is not a real teacher. The teacher has to talk about, not maybe the personal experience, but he has to understand his own personal experience and with this he creates a personal identity as a teacher. This is the traditional idea of being a good yoga teacher in India.

Then we heard in the morning about India, these surroundings, this country, this climate, this people, the understanding of yoga in the society. Normally in India a good yoga teacher enjoys respect in society. Yoga is one of the six darshanas, so it gets high respect, not, however, up to now in Western society. This also gives the teacher a different social identity. I had to work hard to get social respect as a yoga teacher in Germany, for example, from universities and so forth.

One reason maybe that these people already have a proper understanding of Ayurveda of yoga theory, what we call conceptual research. This is not only measurement with instruments, we also think in education that there is research of concept itself.

The next step is that people, teachers should be open. Then they have developed open-mindedness. Then they understand they have students who come from different countries with different mindsets. Desikasar once made a lecture in Switzerland and he only talked on what did people from outside India ask him: What is the best airline, best restaurant etc.: Nothing on yoga, but they asked the yoga teacher.

Now this comes to a more difficult point, the psychological development. In psychology in the West there was a turning point where one thought about how the psyche really works. And there were two or three people really early on who thought yoga was akin to psychotherapy. Unfortunately, this theory was not developed further. And this is one point I try to work on, to make psychotherapists understand what yoga is. I expect, that the psychotherapist also has developed an open mind in his professional learning.

We had the great good fortune to have scientific professional Carl-Friedrich von Weizsäcker, a physicist who started important associations in science: Western science and Eastern wisdom, and he tried to collect things so he influenced people a lot in Germany. He was really respected as an important physical scientist. So we need some important yoga gurus in India to say this is the way of the future. Krishnamacharya made a lot of important statements which changed the thinking in India a lot - that yoga is for everybody without caste, male, female, so we now need important yoga people in India to say we should have Western-orientated psychology also in yoga and see how this fits together und helps each other. This is the missing point in yoga, the psychological process is more understood general but not so much in details. This is a vital work to do in future.