Experience over description
"Dimensions – Once Upon Our Reality"
A concept for an educational art and music show

Dipl.-Des. Rocco Helmchen (visual artist), Johannes Kraas, M.A. (composer)
Email: rocco@avmediadesign.com, johannes@intakemusic.com

BIOGRAPHIES
Rocco Helmchen:
Rocco Helmchen is a freelance visual artist and fulldome filmmaker living and working in Germany. Together with composer and sound designer Johannes Kraas he produced several full-feature planetarium shows and realized dozens of other dome related film projects.

Johannes Kraas:
Johannes Kraas graduated as Master of Music from the conservatory in Münster, Germany in 2009 and is since then working as an freelance media artist, sound designer, and composer. Together with media artist Rocco Helmchen he realized various fulldome projects, such as „tempus.ruhr“, „Chaos and Order“ and „Dimensions“.

ABSTRACT
What is “reality”? Is it just the interaction of time, space, particles and forces? A hallucination created by billions of neurons in our body? Many of the big questions are since impossible to answer, yet they fire up our curiosity to know more.

The theoretician Ronald Jones's "theory of unknowability" gives experience the preference over description in order to avoid using "old" terms which fail to adequately communicate the new.

Based on this approach we tried to develop an additional educational show format that - even if it doesn’t provide all the answers - inspires love and fascination for science, discovery and the mystery of our existence.

INTRODUCTION
Planetarium programs are strictly divided into certain genres. There are astronomy shows, children shows, art-projects, music shows, radio plays, concerts and many more. Every new production has to fit into one of these boxes. We want to brake open these boxes and try to fuse different approaches and styles of shows together in the search for a new show format located in the crossover space of art and science. As we ourselves aren’t scientists but artists inspired and driven by scientific discoveries we set out to use our abilities to share this deep fascination with an audience in a planetarium. The following is intended to give a brief conceptual insight in the process of making „Dimensions – Once upon our reality“

1. WAYS TO DIMENSIONS
1.1. Experiences with Chaos and Order
Our first attempt to create an „edu-tainment“ Show was „Chaos and Order - A mathematic symphony“. We primarily tried to create a piece of entertainment, but at the same time we wanted to put a seemingly dry subject like mathematics in a colorful spotlight to make it appealing to a wider audience. The reactions to this new approach to education was highly positive. Learning from and building on these experiences we tried to further develop that format. We also looked at other more traditional planetarium shows and how they mix the three main ingredients, namely visuals, description (mostly in the form of narration) and music.

We decided to the adjust the ratio in a way that the main focus would lie on the music and the visuals to give the audience more space and time to think and feel. Instead of first having a topic for a new show we decided that we would like to further develop the format we had already established. So we asked ourselves what story, or theme would benefit from being told in this kind of show-format? The question of the nature of our reality seemed to be a great fit for a different approach to a planetarium show. The questions if parallel universes exist, if we exist in infinite variations, what really exists after all. All of this is still in big parts unknown, but nevertheless fascinating.
I.2. Agnosiology

The British artist and theoretician Ronald Jones has proposed the concept of agnosiology or the „theory of unknowability“. This gives experiences that are free from terminology the preference over descriptions using „old“ terms. These established terms would fail to adequately communicate the new and the unknown. This seemed very fitting for the subject and the story of Dimensions.

Using the immersive space of the planetarium dome we are able to translate scientific insights and problems into experiences that follow an unconventional logic. This approach is particularly well suited to convey ideas and concepts for which the audience lacks an appropriate language in their everyday life. What hopefully sticks with audiences is a feeling that there are unexplored worlds and realms in us, and all around us, that influence us in a maybe more profound way then what we already know and understand.

II. DIMENSIONS – ONCE UPON OUR REALITY

II.1. Can a „music show“ in a planetarium context be in any way educational?

We think it can, if we push the boundaries of what is regarded as "education" beyond the description and teaching of facts. Even if the latter should always be the planetariums main purpose, there can be additional approaches of creating formats that inspire love and fascination for science, discovery and the mystery of our existence. Sound in general is the first and most direct form of understanding the world. Music is received directly by the inter-brain, the emotional receptor, the instinct-based part of the brain. Music can not only help to increase the attention of the viewer, it also communicates with him on a subconscious level and makes him receive additional information. In many of the more traditional planetarium shows we looked at, we realized that the text ratio is quite high compared to music ratio.

We are convinced that music can work as an important messenger, that it can help to transfer information by creating emotions towards something that is seen on the screen. That is after all how every movie works. Music creates emotions, and everything that creates an emotional reaction from the viewer makes him participate and follow more actively. When music and visuals go well together, when they become „one“, the viewer is transported right into the show, instead of just observing it. Especially in an immersive environment like a planetarium!

II.2. Narration

After learning from the feedback we got from Chaos and Order, it seemed that it was one thing to put the audience in an immersive and fascinating world of math, where they can enjoy the beauty of formulas, fractals and numbers, but it was a whole different thing to explain math to them. Even that wasn’t what we planned to do in the first place, at least there was the wish to know more about maths from many viewers, which was a great thing, since we accomplished our mission to create interest in a rather dry school subject. Since we are no scientists ourselves we decided we’d rather not try to explain in detail Einstein’s theory of relativity, string theory and the concept behind parallel universes. That would have been destined to fail. But nevertheless we felt that we would like to at least guide the audience a little by introductions to all of the four acts of the show. We tried to open the door to complex worlds by asking questions, providing an understandable dose of information and give everyone some „food for thought“ to hang on to while diving into the unknown.

To ensure the necessary scientific accuracy we had help from Prof. Dr. Susanne Huettemeister, the director of the Zeiss-Planetarium Bochum, Germany who supported the writing process and was a great mentor when it comes to science and physics.

We also put great effort in finding the right narrator. The voice had to fulfill the requirement to evoke a mystic fascination on the one, but yet to sound factual and grounded on the other hand. In other words, it had to have the right mixture of entertainment and education, just like the show itself.

II.3. Visualizing the unknown

With the decision to use narration and explanation only in a very small dose there was a big challenge to not lose the audiences attention in seemingly arbitrary visuals. The show needed some kind of structure and a dramaturgy which would lead the audiences attention from theme to theme. This was achieved but dividing the show into 4 acts plus a prologue and an epilogue. The 4 acts include the topics space-time, the quantum world, the „inner“ and „outer“ universe and the idea of a multiverse.

The visuals are varying between science visualizations, artistic interpretation of scientific concepts and real time sequences filmed in science institutions that actually explore the nature of reality.
II.3.1. Visualization

Generative abstract visuals are particularly well suited to visualize the unknown. As they are designed to generate images which resemble the natural world around us using mathematical algorithms, they can also be used to design and render things we don’t have a visual concept for yet. Every visual world these digital processes generate could be regarded as a real place. The great art historian Kirk Varnedoe once said about abstract art: „It reflects the urge to push towards the limit, to colonize the borderland around the openings to nothingness, where the land has not yet been settled, where the new can emerge.“ It is the show’s purpose to take the audience to exact these unsettled places.

This also touches a point the show is making in the epilogue that the only language capable of describing the new insights into the nature of reality is the universal language of mathematics and that these are often explored using computer algorithms.

II.3.2. Real time 360° video

One of the narration’s purposes is to bring the audience back to the themes and keep them from becoming confused by the journey through all the abstract audiovisual worlds. The same goes for the 360° video sequences, filmed in actual science labs in which the discoveries are made that might one day answer the questions the show deals with. Accompanied by dissolving scenes from everyday life these sequences tie the audience back into the real world as the starting point for their journey.

III. CLOSING REMARKS

Instead of having separate elements of narration, an underscoring turned-down carped of music and explicit scientific visuals, we rearranged the elements in a way we thought them to be more related to each other. In a way it follows the concept of Visual Music, where music reacts directly to the visuals and vice versa. What you see clicks with what you hear, and thus creates a connection from the rational to the emotional parts of the brain, what again leads to a deeper immersion, if not even to a deeper learning experience.

All of this is just based on what we think and have experienced. Over the years we have seen lots and lots of planetarium programs. This is in no way meant to replace the existing and established classic forms of planetarium shows, but we think that this could be an efficient additional way to enrich any planetariums repertoire and to educate and entertain at the same time.

Our goal is to develop concepts and shows that are not only for special "arts under the dome" events or fulldome festivals and showcases, but could function as an element in a day to day planetarium schedule.

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