Why on Earth would you Study Science?
Athens Universit Museum, Greece, 2012[1]

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1. **Exhibition Concept**

Athens University Museum is a small museum situated in a tourist area beneath Acropolis. „Why on Earth would you Study Science?", its pilot educational program for nine to eleven year old school-students, was revised in 2012. Today, the program is the main learning activity for this age and as such, it has to meet the following objectives: to communicate the early years of Athens University`s history and to introduce students to the main galleries of the historical building. Puppetry is often stigmatized as a simplistic, second rate art, usually associated with preschoolers. Therefore, the main challenge of this program is to investigate the potential and „appropriateness" of the medium to foster learning as a tool for action and fun (and not so much the other way round, which is often the case), within a university museum territory, for a specific group age (9-11). Initially the whole project was inspired by the emblematic figure of Galileo who, although - or exactly because - he changed the way we perceived the universe and our place within it, he had to confront with the authorities of his time, to risk his career and even his life. Then, we looked for other great scientists (Vesalius, Harvey, Roentgen) and for their discoveries which could also be linked with the idea of social preconceptions and entourages' skepticism as well as with a number of the museum exhibits. As the research evolved, another figure from the circle of university students broadened the subject and linked it with the Athens University`s early years: Sevasti Kallisperi, the first Greek woman who wanted to register at the University and whose application was rejected (1885)[2]. Sevasti went finally to study in Paris where the school secretary - skeptical about women`s need for education

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[1] http://www.history-_museum.uoa.gr/museum.php?l_angId=2_
[2] At the same period, women were also excluded from some other European Universities -such as German Universities for example.

- asked her „Why on Earth would you Study Science?" Additionally foundation of Athens University in 1837, a few years after the War of Independence and all the difficulties this act involved for the Greek State, could equally introduce the students to the program`s basic idea which had already begun to emerge: when you do something for the first time, above all, it means that you are brave. The next step was to develop this basic idea into a well-documented scenario within the museum setting and to connect everything together: ideas, historical figures, time periods, museum exhibits. As the scenario contained many characters from different periods and as the museum exhibits are not child- friendly for the time being, the medium of puppetry seemed promising. The decision to use this medium from the very beginning affected the structure as well as the narrative of the whole program: where in the museum is the best place to set up the stages and at which point in the scenario should we introduce the puppets? Where should we use dialogue and among which characters? Where storytelling is more appropriate than the more neutral - less theatrical - museum facilitator`s intervention? Which museum objects should we personify as characters in the form of constructions using puppet imagery? Which are the best bridges between the scenes and as the group circulates among the exhibits? Overall, how could we take effectively advantage of puppetry`s potential while preserving the flow during the museum visit?

2. Reception

The programme`s evaluation focuses not only on teachers` questionnaires or students` informal written reports, but also on practice-based observation: the role play at the end of the programme works as an integral way for evaluating the museum experience: students` active participation and improvisations give access to measure to what extent the programme affects and motivates their thinking and imagination. From a pedagogical point of view, the programme is aimed to motivate students` critical thinking within a playful environment. Observing children`s immediate response to the medium, it is clear that the puppets not only encourage critical thinking in a protected engaging environment, but they also potentially challenge the status between the museum authority and the participants. Children are not hesitant in physical contact and direct dialogue with the world of objects (as opposed to interrupting, or touching, for example, the museum educator). In a way, they feel as much at ease with the puppets as they feel with their peers. Teachers` comments about the medium are diverse. Some like the fact that children don`t have to sit down and watch videos in a museum setting. Others miss the use of technology. Even though the latter enjoy the programme, they suggested to end it with a video or a PowerPoint presentation. Teachers often pointed out that a number of students who rarely speak or participate in the class at school are surprisingly active and more eager to participate in the museum.

3. Exhibition Design

The use of puppetry determined the programme narrative: the visual images had to emerge from precise puppet movements and motivations and compose an inspiring montage. For example, following the dramaturgy, the puppet constructor made a character out of the first Registry Book. He adjusted a mouth using a hidden articulation and thus gave the book a voice. The appearance and movement of this character created a strong and clear image where Sevasti confronts with the *status quo* of her time, even before she or the book start to speak. During the programme, there is a moment where participants are standing around the museum exhibits and a small stage which carries Galileo`s workshop. There, many times students are literally touching Galileo puppet; they are spontaneously interrupting him to talk to him. In doing so, we realized what many puppeteers used to maintain: when puppetry focuses on the *intended* learning conditions (comic, intriguing, entertaining story and attractive aesthetics) the medium strengthens its learning potential. Relying on the amateurish skills of the staff members would affect the interaction and actual meaning making process of the whole project and as a consequence the participants" museum experience. This is also familiar to theatre practitioners. Also, researchers tried to take advantage of the gaps which characterize any puppet imagery and tried to clarify their role within audience interaction: the gaps could be located in the physical distance between the puppeteer and the puppet/object, between the audience and the action on stage, as well as in the abstractedness of certain constructions, such as the toy theatre we used in the introduction of the programme. These optical and semantic gaps are intended as a playful, engaging activity in its own right and aim to provide participants with firm enough scaffolds of humor, poetry and subversive images to stimulate their imagination, critical thinking or laughter.

4. Visitors Approach-Activation/Participation

From the very beginning, the research, the content and the constructions progressed in parallel and were viewed as an open process. The planning was based on alternative interpretation techniques such as puppet imagery and object-based narratives. The intention was not only to provide a playful and safe environment for participants to open up and relax but also to achieve a state of flow among participants, exhibits, puppets, where puppet imagery and interaction with the action on stage would be more important than the acquisition of knowledge. When the students arrive, they sit in the lecture room and the educator informs them about the structure of their visit. If the group is large (above twenty-five students), she also explains that all students will attend the first part together and then they will split into two groups. Overall, the reports suggest that giving students the chance to watch an adult „playing around" with card board puppets, table top puppets and „talking books", reverses the educator and the student`s status. It encourages students` spontaneous, unreserved intervention. During an introductory discussion, the museum educator tests the dynamics of the group by asking students what they imagine when they think of

the words „university", „sciences" or „scientists". Then, students are asked to imagine a scientist`s day. When the discussion comes to discoveries (there is always   a student who mentions the word), the educator asks how a scientist might feel after making a discovery. Among a number of ideas, children or the educator say that scientists might sometimes experience skepticism or jealousy by their colleagues and distrust by society. At this point participants are introduced to the main idea of the programme - when   you do something for the first time, above all, it means that you are brave. Then follows a short toy-theatre performance about the inauguration of Athens University and the   difficulties people had to face during that time. Including short dialogues, this section facilitates communication of information in an engaging way. This part ends with a three   dimensional time line, adaptable to the cognitive level of the participants each time. Participants engage here into a journey in time with surprising, real but also fictional meetings   (meetings between two characters who lived in different periods, or meetings between puppet-like objects and puppet-like people). Athens University impressive anatomical atlas   and some anatomic statuettes give the group an entry point to make a reference to Vesalius`s adventures. Then the group meets Galileo – a wooden table-top puppet - at his   laboratory where he introduces himself and talks about his adventures. Then Sevasti (table-top puppet) enters into action as she visits Galileo in his laboratory. After carrying out   the pilot programme for some months, researchers decided to add the role playing at the last part. This part takes place in the museum`s workshop space where children are   divided into five groups. They are given a number of props (costumes, object replicas such as Greek ancient marbles, a telescope, human teeth, barber`s scissors, ink pens, an X   ray puppet, theatre dialogues, photographs, etc.) and they are asked to use them to improvise five scenes based on the previous interactive tour inside the galleries. At the end, each group shows everybody their improvisations in short scenes.

5.   Conclusion: "Why On Earth would you Study Science?" project with respect to COP1 and COP2

Toolkit 1 – Making Europe visible. It is a common belief that "visitors come to museums to see „cool stuff" – they don`t come to do things they could (and maybe should) do   elsewhere" (Adams & Moussouri 2002, p. 16). Often museums use their original items as a springboard to talk about extraordinary narratives such as those involved in cutting-   edge art, scientific discoveries, living legends, human suffering or wonder, valuable jewels. And visitors do get amazed by mesmerizing exhibits and larger-than-life stories: they   are reminded that the world used to be, and still is, awe-inspiring.

Toolkit 2 – The Museum as a „social arena". The museum becomes the arena where children, thanks to a less didactic-more entertaining approach, become more active   and reactive to art stimuli.

Toolkit 3 – Bridging-the-gap. The permanent museum exhibition is not particularly engaging for young visitors; therefore re-enactment, comic illustrations, role play, and   above all puppet imagery and techniques are employed to involve the young audience into a meaningful narrative.

Toolkit 4 - Synaesthetic translation and transformation of contents. Puppetry`s potential as an educational tool in museums: puppet imagery seems to have the potential to     bring on a human scale an overwhelming museum experience full of humanity`s big moments.

Toolkit 5 - Social web and interaction with new media. The project did not aim at complex networking with other institution even though educators" feedback, students` engagement and their impressions are beyond researchers" expectations.

<u>6.</u>   Further Literature, Links and Information:

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An articulated two dimensional figure: Andrea Vesalius[1]

An articulated replica of the Registry Book with Sevasti and Galileo puppets

An articulated replica of a museum's Anatomic Atlas Galileo and Vesalius

*The toy theatre stage: a scene
from Athens University inauguration day*

Sevasti at Galileo's workshop