

Cosmology at Buddhism temples: a public dialogue in science and religion through astronomy

Haruka Makizawa¹⁾, Hiroaki Isobe²⁾

¹⁾ Department of Electronics, Kyoto Institute of Technology

²⁾ Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University

E-mail : harumaki1993.10.18@gmail.com, isobe@kwasan.kyoto-u.ac.jp

Introduction

■ How we started

- Most of participants in science communication events are already interested in science [1]. **We wanted to reach to those who were not yet interested.**
- There were similar thoughts in a group of young monks called “Free-style monks (フリースタイルな僧侶達)” who were reconsidering the role of Buddhism in the contemporary society.
- The science-side (presenters of this poster) and Bhuddism-side started “Otera de Uchu-gaku (Cosmology at Buddhism temples) in 2010.

■ What we do

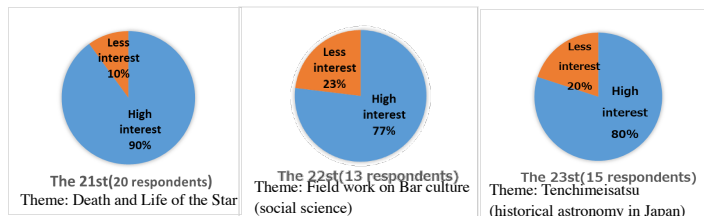
- Held regularly about once in 2~3 month in various temples in and around Kyoto city. Usually Friday evening.
- Every time consists of a lecture by a guest scientists, a lecture by a monk (usually the priest of the temple), and a sit-in-a-circle discussion with all the participants. Snacks and drinks are served.
- The themes of the scientist's lecture are mostly in astronomy and related science, but not restricted to them. There were also lectures in bio, informatics and social sciences.



Results of questionnaires to participants

How much low-interest-in-science population attracted?

- Previous study found the rate of the low-interest participants in science events is 0~10% [1].
- We found **more low-interest participants** (10%-23%) in “Otera de Uchu-gaku”.



What bring the low-interests participants to the temple?

It is exciting to witness and join the lively interaction of scientists and monks.

Combination of temple and astronomy sounds it is more open to outsiders.



Unexpected similarities between science and religions. Diverse ways of understanding the world.

- Less barrier for low-interest participants.
- Unusual combination stirs curiosity
- Rare opportunity to lively interact with both monks and scientists

Survey method

■ Measurement of participants' interest in science

In order to compare participants with other science cafés, we classified participants from the viewpoint of “interest and involvement in science and technology” using the method developed by the Victoria state government of Australia [1][3]. The question items and the criterion of high-interest and low-interest are shown below.

- Q1. How much are you interested in science and technology ?
1. Very interested 2. Quite interested 3. Neither interested nor disinterested
4. Not very interested 5. Not interested at all
- Q2. Do you actively search for information about science and technology?
1. Yes 2. No
- Q3. What you have looked for information about science and technology in the past, have you generally been able to find what looking for?
1. Yes, and it tends to be easy to understand 2. Yes, but it is often difficult to understand
3. No, I often can't find what I am looking for.

Q1	1 or 2	1 or 2	1 or 2	3 or 4 or 5	3	4 or 5
Q2	1	1	2	1	2	2
Q3	1	2 or 3	-	-	-	-
Segment	2	3	1	6	4	5
	Group with high interest 52.2%			Group with low interest 47.8%		

Following questions are also added to the questionnaire to participants.

1. Why did you participate? Or, what was your expectation?
2. Please write your impression of today's event.
3. Please describe the themes you would like to hear in the future, your request, and what you expect from cosmology at the temple.
4. Do you regularly go to science cafes, public lectures, open day of research institutes, etc?
go well · sometimes go · rarely go · never have gone

■ Questionnaire to guest scientist

We also conducted a post-questionnaire to the speaker on the scientist who made the lecture. The question items at that time are as follows and all answers are free description.

1. Please tell me the reason why you accepted the lecture request of cosmology at the temple
2. Please answer if there is any difference (such as a reaction from the audience or points you took note of when giving a lecture) from the case of giving a lecture at another lecture, science cafe or the like.
3. Please answer the impression of the lecture by the priest
4. Please tell us the impressions and dialogues that you left in the roundtable discussion
5. Please tell us your thought on theme of science and religion, or on science lecture at a temple

Results of questionnaires to scientist

■ Commonalities and differences between science and religion

- “I think it is difficult to take religion as a scientific subject, but it is enjoyable to find an agreement between religious concepts and theory of physics”
- “Both Buddhism and science are motivated to understand the world”
- We also found understanding the world itself is the goal of science, while Buddhism do so because it helps people relieve their pain.

■ Flat relationship: Everyone learns from each other.

- “While science attempts to understand the world by decomposing it into elements, Buddhism tries to accept the whole world. It helps me to think about science in a objective way”
- “I feel like being trained in ‘how to use my head’. I think in the event the participants and monks are also more interested in practicing different way of thinking rather than just knowledge.”
- Scientist is not the only authority here. The presence of monks relativizes the position of scientists and produces flatter relationship with the participants.

■ It has high impact and effective as scientific communication

- “Temples sounds unsuitable for talking about science. Many people consider ‘religious’ as nearly identical to ‘non-scientific. This apparent contradiction brings an impact to this event”
- ‘Unsuitable place’ can be an innovative place. The collaboration with Buddhism could attract not only the low-interest participants but also the scientists.

Conclusion

- ‘Cosmology at Buddhism temple’ could attract more participants with low-interest/involvement in science.
- Collaboration with Buddhism relativized the position of scientists and produced a flatter relationships. This allows more active learning not only for the general participants but also for the scientists.

References

- [1] K.Kano, E.Mizumachi, Segmentation and Targeting of Participants in Science Cafés - From the Viewpoint of the Extent of Engagement in Science and Technology. *Japanese Journal of Science Communication*, 2013, 13: 3-16.
- [2] Kyoto University Unit of Synergetic Studies for Space. Otera de Uchugaku. <https://www.uss.kyoto-u.ac.jp/otera> (accessed 2018-3-19)
- [3] PESTI Project. Infographics of Victorian segment. <http://www.nistep.go.jp/research/scisip/data-and-information-infrastructure/pesti-data>. 2016 (accessed 2018-3-19)