



# Towards Meditative Experience Using Daylight

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## Abstract

Reaching a meditative experience during prayer is not easy to achieve. Infinite number of designs of mosque and church has been developed, but seemingly the result is still dissatisfied. We experimented how daylight can meet that needs and used 24 university students to evaluate the responses. The ANOVA statistic results show that the samples perceive the spatial effect from the maximum and a lesser amount of skylight above the mihrab or altar significantly differently from that of the lesser wall openings. This study proves the positive effect of daylight in achieving a meditative experience.

**Keywords:** meditative experience; daylight; religious space; prayer.

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## 1.0 Introduction

People do practical daily activities and anticipate complex future problems they face in life. In performing these activities, people consider previous experience. This experience becomes crucial for survival. Unfortunately, this process does not always happen smoothly. People would not have problem in doing a single and simple task. But when they have to perform a multi-task activity at the same time they would need harder efforts to fulfill the task, and have a chance to fail. During the interaction with the immediate environment people will select the information and perform the relevant task based on how it passes through the attentional filter as this will help them to analyze, recognize, interpret and store it in the memory (Gleitman, 1995). Thus, there is a chance that the messages get lost. Such process of attention occurs when our sensory modalities work normally and are able to select one most appealing stimulus while filtering out the rest. How fast we select it or not depending on how many features are involved in the stimulus as target or distractors. Since there are infinite situations applying various stimuli, there may be a possibility for them to face a problem in filtering out the messages.

Performing a prayer (Salah) for Muslim may illustrate how complex the task they should perform. They not only have to consider the proper way of praying, but they also need to concentrate, say the words of Surah silently and understand it, expecting that God will listen. When people from any religion perform a prayer, they mostly orient themselves to a direction in the room. Regardless the minor difference of prayer procedure of Muslim that may exist in order that God accept the prayer, they must face the Qibla when performing a prayer. In a mosque, although the qibla is clearly indicated by the location of Imam or khatib, there is a chance for the worshipers to miss their attention to him. Such careless attention may be higher if there are lots of other provoking environmental stimuli. Since, we are not recommended to talk during this time, the only possibility from which the stimuli we may perceive is from the spatial or architectural element, such as elaborated interior decorations. In such condition, instead of directing their attention to the khatib, the worshipers may have a higher chance to pay attention to the interior details, because during listening to the sermon, the process of attentional selection through their eyes is working actively.

As this preceding activity is important to pass before one performs the congregational prayer, we might need to rethink how a religious space should be designed. Paolo Portogesi, as quoted by Rasdi (1998), also stressed "the importance of prayers and meditative seclusion in the interior spaces of the mosque and gardens which secure silence, privacy and allude to images of the Muslim paradise". This idea is relevant because, people need concentration during the prayer, but not easily done if they are not well conditioned in the space. Unfortunately, there are no rules of how mosque should be well developed. Rasdi (1998) stated, "mosque is considered no different than either a church or a temple in relation to the design principles of a sacred edifice where the mosque is looked upon as a place of silent meditation and seclusion from the outer world". Therefore, considering the principle of *ijtihad*, designers can interpret freely and innovate.

Aside from the fact that daylight are abundant, at least in Asian countries, it is considered effective to create a psychological effect of space, "a visually stimulating and productive environment for building occupants" (Husin and Harith, 2012), which allows us to do various

activities either outdoor or indoor during the daytime. Therefore, if we can control over daylight, we could provide better religious space.

## 2.0 Literature review

The use of daylight in religious buildings has long been practiced, in line with the process of religion recognition, even before the artificial light was found. Monolithic religious buildings relied on sunlight to support worshiping activities and no wonder that its existence was connected with God. Supporting this notion Antonakaki, T. (2007) describes that Egyptians considered the sun to relate to their God, Ra. Christians believe that light was promoted in the beginning of creation.

The symbolic role of light has long related to “the sacred, religious, and cosmologic belief and even to gender” (Antonakaki, 2007). The way of manipulating light in sacred spaces is varied. For instance, the transitional quality of brightness set up from the dimly lit entrance to the main hall, which is most brightly lit, symbolize the less sanctified to the highest level of holiness of the space, according to Humphrey and Vitebsky (1997) as Antonakaki (2007) quoted. In the case of Islamic religious buildings, like Ottoman architecture, the daylight were collected through the openings around the dome brightening up the worshipers below and partly lit to the mihrab. Concerning this, Antonakaki (1997) points out, “Light of Allah pours down from the dome at the gathered worshipers”.

Beside its basic function, light also can create spatial effect. It is determined by its attributes, the spatial characteristic and importantly by people's perception. People perceive space differently; therefore people keep exploring better lighting design to facilitate a prayer. In fact, beyond the introduction of daylight to create association with God, the space should help facilitate people to feel the presence of God by creating religious experience, expecting that this may retain their belief in God, according to Hughes et al. (1933) (Ludovici, A.M., 1934). However, Zangwill (2004) seems to be doubt about how people could be justified to believe in God just because they had religious experience. This author suggests, we may look at this opportunity through various aspect of perceptual experiences including “moral, aesthetic, mathematical, counterfactual, micro-physical and theological content”. Zangwill also emphasizes that in order to have spiritual experiences and relational evidences to God, one should have a theological content or believe in God. He also said in order that people can claim to have got religious experiences, they should also be able to feel it. Such condition might lead to a difficult question if the cause of experience might be God, then how could God carry out this? In fact, although people of any religion can believe in the existence of God, there are no ways we can see, hear, touch, smell or taste God, except if we have “sixth religious sense or secret internal sensory capacity” said Kenny (1992) as Zangwill (2004) quotes.

Our religious experience in sacred building can involve emotions as also supported by Zangwill (2004). He believes that people's love or fear to God relates to their belief of God, otherwise their experience might not relate to religion at all. Supporting this, Thagard, P. (2005) said, “religion is emotional”, and every religion has a different emphasis in how positive emotions like, love and comfort and negative emotions like, fear and shame, are

balanced. To complement this, McCauley and Lawson (2002) as Thagard quotes, said performing a religious ritual cheers us up. In this respect, people experience emotion different from what they normally have. In religious situations, Emons R.A (2005) categorizes it as sacred emotion, however, people may feel it in nonreligious environment. He further said such emotions "are those that are more likely to be elicited through spiritual or religious activities or practices (e.g. worship, prayer, mediation) than by nonreligious activities". Thus in order that worshipers could get positive emotion during a prayer, we might need to improve the environment, whose quality and character have relevant effect to achieve the goal of prayer.

Prayers (salah/ salat) as one of the main activities for Muslims are performed to communicate with and remember God, and these can be done in any place as long as it is free from physical impurity. "This reflects one of the favours Allah has bestowed upon us, making this religion easy and practical" said Bahammam (2012). During this practice, a person has a chance to praise, ask forgiveness and give thanks to Allah by remembering or recalling words to express those intentions. Essentially, any other worshipers may perform a similar activity to this; regardless the differences of praying procedure that exist. This is to make sure that such regular activity could lead to a contemplative fashion. Contemplative experience defines "a state which can be experienced either consciously or subconsciously" (Shah, 2009). In religious case, it relates to a meditation or prayer. This does not mean to relate to meditative prayer, or just concentrate while saying divine words or messages by heart. In fact, in Christianity, contemplative prayer relates to centering prayer, "an Eastern Religion mind emptying meditation technique" (Caddock, 1997). It can also tell as "contemplative spirituality" where people need to have alternative consciousness in experiencing the presence of the world, other people, self and God. We can infer that contemplation means to bring one's mind to a psychological situation to meet a spiritual goal through religious activities like, prayer.

People create religious settings to accommodate worshiping activities and use light including daylight to meet its function and best satisfy symbolic aspiration of religious. In this study, we try to investigate the role of daylight in creating sacred space, which people can perceive. In exploring this, a research question is proposed. How can daylight be controlled to create a space, which has meditative effect?

### 3.0 Methodology

We used an experiment using digital pictures of an interior applying four different form of day lighting as the stimuli. It was developed using 3D Max computer graphic software. We proposed a simple room of size 5x9 m2 with a ceiling height: 6m and 3m at the front and rear side, and width of the opening: 40cm, to represent a place of prayer as Muslim called musalla as the simulated interior space. Rasdi (1998) classifies this as "a type of mosque that is used only for prayer". The reason of using such room for this study is to consider that such a space is basic for anyone to perform a prayer and look neutral for the experimental subjects so that they would respond to the stimuli more objectively. Besides, since a very simple quality of the room is more recommended for a prayer according to Rochym (1983), and we focus the

role of daylight only on an interior space set up digitally at 10763.9 Lm/m<sup>2</sup> so that other variables of the space are not considered.

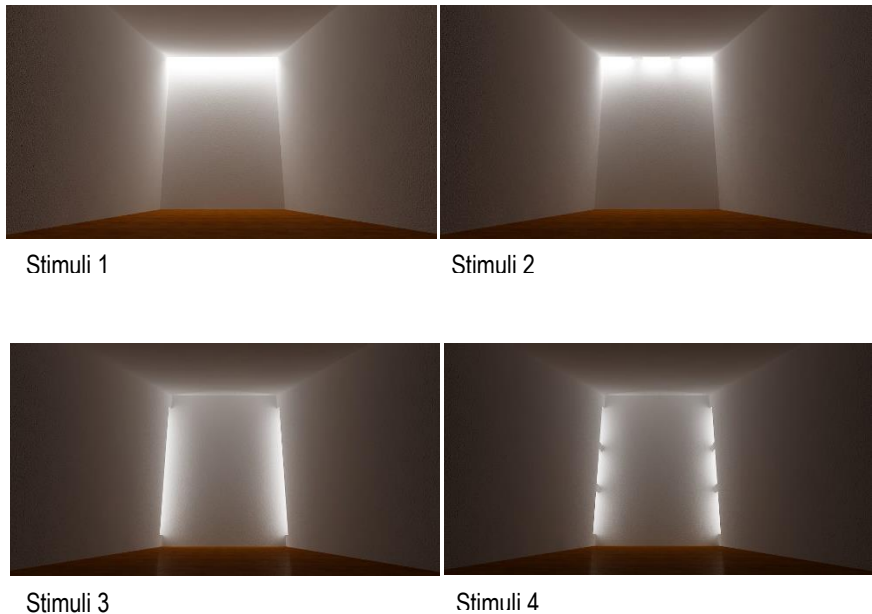


Figure 1: The stimuli 1, daylight enter from the maximum opening along the front corner of the ceiling; the stimuli 2, daylight enter from three openings along the front corner of the ceiling; the stimuli3, daylight enter from the maximum opening along the front corner of the walls; the stimuli4, daylight enter from three openings of the front corner of the walls.

Based on this model of space, four different forms of opening on the corner of ceiling and wall, from where the daylight at n came in, were created. Two kinds of opening were made along the front corner of the ceiling, and the other two made along the front corner of the walls so that four different effects of day lighting on the space were created. Twenty-four university students were involved in this within subject design experiment. They were asked to respond to each of four digital pictures (See Figure 1) presented repeatedly by filling in the checklist. It contains twenty items of paired adjective words representing the indicators of sub-variables, which create meditative experience may be perceived when looking at an interior space such as, simple/ complex; formal/ informal; unique/ ordinary; elegant/ not elegant; peaceful/ disturbed; familiar/ foreign and so on. We used ANOVA statistical analysis to compare the perceptual responses of the samples toward the stimuli to see whether there is any significant difference of response that each group has given to the four stimuli.

#### 4.0 Results and Discussion

The ANOVA test shows that the samples' perception of the stimuli 1 is significantly different from that of the stimuli 4 (Sig.: .003). As well, the samples perceive that stimuli significantly differently from the stimuli 2 (Sig.: .001). Thus, only towards the stimuli 1 and 2 the respondent's perception is significantly different from that of the stimuli 4, whereas the rest of comparisons does not show any difference. The respondent's perception towards stimuli 1 was not significantly different from that of the stimuli 2 and 3 (Sig.: .982 and .242 respectively), and the subjects' perception of stimuli 2 was not significantly different from that of stimuli 3 (Sig.: .116).

These results show that the samples' perception toward the spatial effect is significantly different only if, the comparison is done between that resulted from the opening along the ceiling corner or partly opened on it, and that resulted from the serial openings on the wall corner. In other words, this fact, may give us a clue that the spatial quality made from the daylight entering through the gaps along the ceiling corner creates a different sensory effect from that made from the daylight entering through the partial gaps along the wall corner. We can say that the spatial quality resulted from two alternative gaps on the ceiling corner seems not to be effective to expect different impact to the perceiver, and comparison of this with the space quality resulted from the maximum gap along the wall corner is also not effective in giving a significant sensory effect to the samples. This fact may infer that the spatial effect resulting from the repetitive gaps along the wall corner as represented by the stimuli 4, may be the most effective way to create a sensory effect to support needs for meditative experience. Such spatial effect reminds us to the lighting effects seen on the Catholic Church at Ronchamp, France, called Notre Dame du Haut designed by Le Corbusier and finished in 1954. Another inference can also be considered as well that the samples may have experienced the sensory effect of light resulting from the gaps along the ceiling corner (the stimuli 1 and 2) as this creates a significant different perception compared to one shown in the stimuli 4. In many Ottoman mosques, the use of daylight is concentrated around the dome to light up the worshipers. People believe that the light of Allah comes down from the dome. It is also true to refer to the statement of Humphrey and Vitebsky (1997), "spiritual-light, stars, lamps and rays are entwined together with verses from the Koran and located at doors, window and prayer alcoves" as quoted by Antonakaki, T. (2007).

#### 5.0 Conclusion

Dominated use of daylight in religious space especially that penetrates through narrow gaps around the interior space to which people need to direct their attention is potential to create meditative experience. To elicit such perception it depends on how the daylight distribute through the interior space. The different form of opening both on the corner of ceiling and the wall create the effect of space, and this can result in a significant different perception to support contemplation. This situation occurs at least in the space where there is no other attractive design element applied. This way, people may only pay attention on the luminous part of the space that is where the mihrab or altar is located, or where the sermon is given in the case of Mosque or Church.

This research shows how a specific manipulation of daylight by creating particular openings can create meditative experience; therefore this finding may serve as a reference for design process or future environment-behavior research. However, this study has limitation on the simulation of day lighting, as this only refers to a certain point in time, the middle of the day. As time changes, in line with the setting sun, the daylight penetration would also change and we still do not know how would it come out. We may expect to see an animated space as a result of the dynamic effect of light, which could be positive or negative in relation to the need for contemplative effect through it. Therefore, in the future we may consider a different level of daylight penetration and luminance to find out its effect on the interior space and the respondents' perception.

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