Symmetry in Tibetan Culture

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Introduction

Tibet is known for its exotic culture, imposing architecture and elegant art, many of which symmetry is present in. Architectures such as the Potala Palace and the religious construction Stupas are built in vertical symmetry, which conveys a sense of authority and solemnity. Also, religious items that people use, such as the prayer wheels, usually have symbols inscribed on their surfaces in a symmetric way. 2D symmetry on cylinders can be embodied by graphs on the prayer wheels. Another art form, mandala, a special Indian painting art, is also full of vivid symmetric imageries. Tibetan culture is a fabulous intermediate through which we can deepen our understanding on symmetry and design.

Stupa and Potala Palace

Stupa is a traditional Tibetan religious construction. It is thought to be an object for worship. People entertain the idea that stupa can counter the evil forces in the region. It is thus encouraged for rich people to spend money to build stupas, which can accumulate good merits for their next life. Also, stupa burial is a special Tibetan burial. When a lama or a very highly respected monk passes away, people would treat his body with rare spices and minerals, and then build a stupa to bury the body into it. While some stupas in Tibet are symbolic, others have the remains of lamas in them. People would circumambulate the stupas and pray for protections from the deceased lama. There is C5v on the upper white part of the stupa in Figure 1, and translational symmetry in the array of stupas in Figure 2.

The Potala Palace is the historical residence of Dalai Lamas. It also possesses a symmetric pattern about the central vertical mirror line, as shown in Figure 3.
Prayer Wheel

A prayer wheel is an important Tibetan Buddhist religious item. Inside the prayer wheels are mantras written on a piece of paper. When Tibetans spin the wheel, the mantras are rotated, which is seen as equal to the holders’ recitation of the mantras. There are many symmetries in the basic structural layout of the prayer wheels. The symbols on the prayer wheels vary, so in the analysis of symmetries we ignore the detailed patterns and color of the prayer wheels. In Figure 4, there is a vertical and horizontal symmetry in the second wheel, glide symmetry in the third (ignoring the content of the circle), and horizontal symmetry in the two wheels to the right.

Figure 4

Prayer wheels can also take up gigantic forms. There is roughly a C40v symmetry on the upper part of the prayer wheel in Figure 5, and a C96v in the third row of the wheel in Figure 6. There are also modern prayer wheels that are driven by electricity, as shown in Figure 7, where a C6v is obvious for the wheel, if we ignore the color of the beads on it.

Figure 5  Figure 6  Figure 7

Mandala

The mandala represents “sacred space”, and is thought to be a diagram of the universe. One interpretation states that the central square of a mandala symbolizes the king’s city, the circle surrounding it represents mountains, and the area between the circle and the outer square stands for ocean. Figure 8 and Figure 9 have a D4 symmetry disregarding the image in the
centre. The symmetry brings the mandalas an air of authority and grandness. There are many geometric symbols in mandalas as well.

Discussion

Symmetry is an important element in Tibetan art and cultures. The prevalent Cnv symmetries with its $n$ ranging from 5, like in the case of huge stupa, to 96, to the large stupa, are particularly noticeable. Such symmetries bring more aesthetics to the artworks, giving them an orderly and imposing look. On the other hand, stupas, prayer wheels, mandalas and the Potala Palace are all representatives of Tibetan culture and religion. These artworks, with elements of symmetry, convey to the world a positive message about Tibetan culture, and let more people understand the beauty of Tibetan art, architecture and religion.