

Motion study of breakdancers in mastering Thomas Flare

Naomichi Yashima, Tsutomu Fujinami

Japan Advanced Institute of Science and Technology

It is difficult for anyone to acquire complex skills, which require a long time to master. We investigate the process in which people acquire skills of breakdance called “Power moves”, especially focus on “Thomas Flare”. The same skill is found in gymnastics. Recently, the street dance becomes popular in Japan, as noticed by the fact that it has become compulsory for junior high school since 2012. Furthermore, breakdance was adopted as one of the Olympic programs and it will be held in next year, 2018. From the above there is a possibility that will grow as a market. It is worth probing the true nature of such a complex skill. We divided Thomas Flare by five period, 1: acceleration, 2: leg front, 3: opposite side, 4: leg back and 5: normal side. There is rotation direction in breakdance, and we will explain in the case of clockwise. The first period acceleration, step back with your right foot and plant your right hand, next swing right leg towards the back of your leg. The second period leg front, as you sweep your right leg, lift off the floor with your left leg. The third period opposite side, as your right leg swings up and lift off your right arm. The fourth period leg back, pull your left leg under your right leg. The fifth period normal side, release your left hand and keep your left leg and swing your right leg. We apply a motion capture device to collecting data of bodily movement of the subjects. A Japanese breakdancer, who is active around the world, says that an expert who is doing Power moves roundly move around the trajectory, seen from above. While beginners make progress the skill, it is supposed or expected to improve the locus that is drawn by their movement, for example, an elliptic orbit varies that of a perfect circle. It is said that we need well-muscled in order to do Thomas Flare. However, in our experiment, there is no big difference in a test of strength between beginner and instructor but we found that there are differences which is a movement of the legs while they are doing Thomas Flare. We build a hypothesis that is less important to build muscle than to understand how to move one’s own body. We found that when acceleration, the first step of Thomas Flare, the beginner’s leg moves in a linear, but instructor’s one moves like a circle.

Keyword: Acquisition of the skills, Thomas Flare, Mastery process