

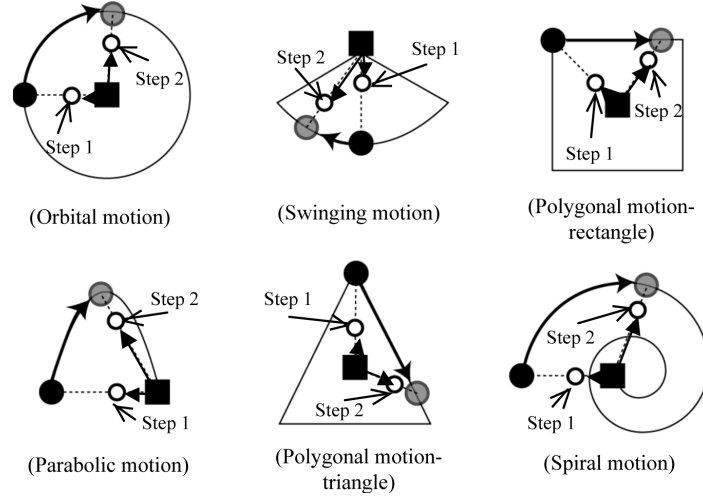


Fig. 1. The demonstrations of wheelbase-based motion (●: subjective system, ■: objective system, ○: wheelbase-based motion).

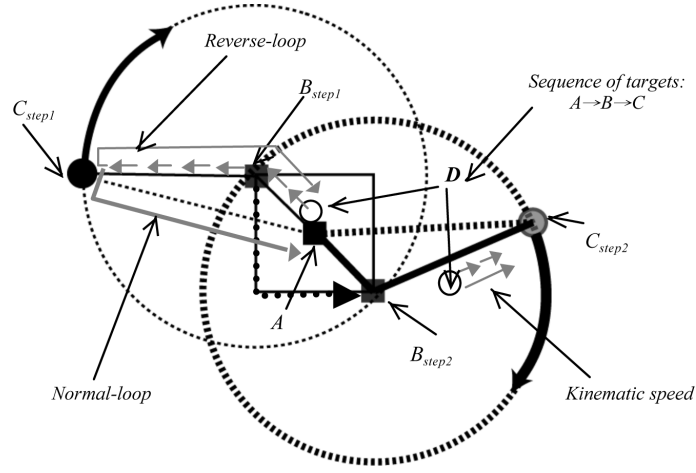


Fig. 2. Manipulate parameters of wheelbase-based motion.

ing a systematic model to control its motion parameters, analyzing how the parameters affect its process of motion, and discovering the geometric aesthetic form generated by computing the parameters. In this case, this study designs and develops the Relative Motion Creator as the study tool to test this wheelbase-based motion so that it may compile the model of wheelbase-based motion, complete its motion structure, and operate its motion parameters.

2. Concept of Wheelbase-Based Motion

Wheelbase-based Motion suggests that the trajectory appears in a straight and direct pattern of motion, moving back and forth in a two-dimensional space from the beginning to the termination. If the beginning and the termination is static, the trajectory of Wheelbase will appear simply in a straight line and the two points of beginning and termination in the space will be the vertexes of this line. As the computing progresses, the trajectory will move in a fixed span on the wheelbase. No matter what motion structure or speed the beginning or termination has, the trajectory of wheelbase shall be moving close to the termination with the development of computing.

This study defines the beginning as the absolute static

center in this two-dimensional space of motion meaning the ‘objective system’ of motion structure, while the termination is regarded as its ‘subjective system.’ If there is a certain motion of the subjective system going against the objective one, when the objective system is in a static manner, the subjective system will dominate the moving of Wheelbase-based Motion, including its direction and speed. In this case, the motion speed has little effect on the original speed of wheelbase. As it is seen in Fig. 1, the objective system is the static center in this 2D space. When the subjective system is moving against the objective system, for instance, in Orbital motion, Swinging motion, Rectangle motion, Parabolic motion, Triangle motion, and Spiral motion respectively, wheelbase-based motion will be affected as well. This study adopts ‘step 1’ and ‘step 2’ in the figure to demonstrate how the trajectory is moving from the beginning (namely, the objective system) towards the termination (that is, the subjective system) and defines it as the fundamental structure of wheelbase-based motion.

Therefore, if the motion structure of subjective system is modified, the trajectory of wheelbase will be different likewise. Meanwhile, if the objective system shares the characteristic of subjective system (that is, the former is not