Computer Software for Measuring Creative Search

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The creative process can be thought of as the search through a space of possible solutions for one that best satisfies the problem criteria. To better understand this search process, two face valid creative tasks have been created, both of which track the intermediate configurations that creators explore. These data—called search trajectories—may yield valuable insights into the creative process. This demonstration allows visitors to try both tasks and to see the sorts of data that are produced.

The first task is a computerized version of Amabile's (1982) popular collage task, wherein participants make themed collages using colored shapes (see Figure 1). The software allows the shapes to be moved, rotated, flipped, and stacked using an intuitive mouse-based interface. The creator's moves can be characterized according to the extent that the set of shape movements actually performed exceeds the minimal set of movements needed to produce the final collage.
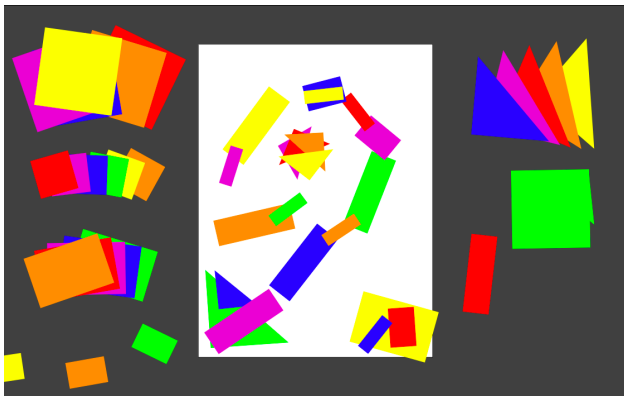

Figure 1: Intermediate screen of the collage task. The white area represents a piece of paper and the gray area is a work area. Initially all of the shapes are stacked in the work area, similar to the triangles in the upper-right corner.

The second task, called the orbital composition task (Jennings 2010; Jennings, Simonton, and Palmer 2011), involves arranging a camera and light that lie in fixed circular orbits around a set of objects. The configuration space has only three dimensions—camera angle, camera zoom, and light angle—but the scene is constructed in a way that permits many interesting and varied images (see Figure 2). While less face valid than the collage task, the orbital task's simplicity permits more consistent analyses and makes it possible to collect ratings from a standardized subset of the space, thereby providing a sense of the search landscape topology that can help overcome some of the ambiguities inherent in analyzing search trajectories alone (see Jennings 2012).
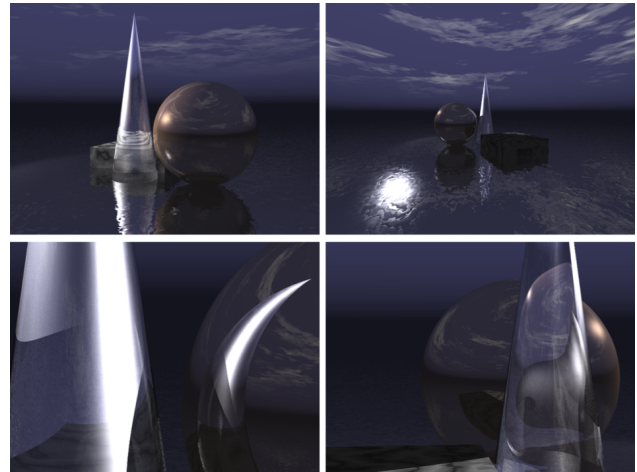

Figure 2: Final images from the orbital composition task as selected by four different research participants.

References

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