1. Introduction

Synaesthetics is a 3D random shape generator software which intends to investigate the possible connections of the textual and the visual and to use these connections to generate visuals which are user – specific and even personal.

The idea has stemmed from synesthesia, a neurological phenomenon in which stimulation of one of the five senses invokes perception by the way of a different sense, for example, the taste of chocolate causing the perception of prickles on the skin. The most common kind of synesthesia is grapheme – color synesthesia, in which letters and numbers are perceived as colors.

Metaphors common to most languages, such as “sharp taste” or “soft colors” indicate that all humans tend to make connections. Technology allows interactive environments in which the visual, the auditory, the tactile and the textual can exist together; allowing human perception to evolve by making use of different kinds of stimuli simultaneously. Our project uses versatility and interactivity by first making the user determine the connections and coherence between the stimuli according to his/her perception and then combine the stimuli to create the environment; rather than adding up different kinds of stimuli which are independent of each other.

2. Exposition

Synaesthetics generates 3D shapes by textual input. What differentiates Synaesthetics from ordinary random shape generator software is that the user has the ability to affect the result by his/her previous choices during the usage of the software. The user is asked to match a series of randomly created shapes with a set of given randomly created meaningless words; according to these choices, his/her tendencies in finding similarities between the visual and the textual are analyzed. Based upon this information, Synaesthetics generates new 3D shapes.

Synaesthetics is programmed on Virttools, which is an interactive 3D content development tool. The infrastructure of the program is designed to generate shapes and words from an expandable pool of primitive 3D objects and the Latin alphabet. The program runs in two phases which work consecutively and collaboratively.

The content creation phase randomly produces simple or complex 3D shapes and words that can vary in length. Each individual 3D object and letter has curvature properties defined by the developers of the software. Using this knowledge, newly created shapes and words calculate their own curvature values.

In the analysis phase, the user's matches are analyzed according to the curvature values of each word-shape couple, at the end of which a congruity percentage value is computed. When the user inputs a text, the program decides the curvature of the resulting shape and constructs a new and progressively complex shape. This resulting shape can also be exported as a Lightwave OBJ file format.

3. Conclusion

The visuals generated by using Synaesthetics are in coherence with each user's separate connections between the textual and the visual, therefore they are personalised. Unlike other random shape generation softwares here the shapes reflect the unique perception of each user and cause a self-realisation.

* email: emrahk@su.sabanciuniv.edu
** email: damlatamer@su.sabanciuniv.edu
Web: http://students.sabanciuniv.edu/~emrahk/synaesthetics/