INTRODUCTION

Typographic messages can be analyzed through three different dimensions: semantic denotative representation, color and texture, and shape. These dimensions, when presented to subjects as stimuli, activate a variety of thoughts, images and meanings that are in both semantic and episodic memory systems. Personal and collective representations trigger a complex sequence of reactions known as emotions. We believe that the introduction of motion as a new dimension in the stimuli will change the asymptotic level of learning that subjects can achieve when viewing typographic messages. The perception of the stimuli may also be changed, having impact on the intensity of the associative bonds, amplifying the emotions as responses.

A typographic vocabulary, through the use of time-based composition, sound and animation can broaden the emotional stimulus in users beyond static delivery systems. The application of kinetic media will enable the typographic designer to add motion, scale change, sequence, metamorphosis, and context (mood or emotion) to typographic communication. Through our results of teaching, and by way of a series of qualitative and quantitative analysis (using Plutchik’s mood rating scale), we have concluded that kinetic typography, within an appropriate context, has the possibility to evoke emotion, while enhancing visual form, meaning and communication.

The study of “type in motion” and its stimulus effect on emotions, establishes a foundation for more meaningful applications in professional practice. Ultimately, these concepts can be realized in products such as film and television titles, movie previews, commercials, information kiosks, multimedia programs, web sites, and presentations. By bringing “type in motion” studies into our design curriculum we investigate varying type size, weight, spatial relationships, form – counter form, and movement within a word (or words), producing a variety of rhythmic and expressive uses of kinetic typography, that preserve sound typographic principles. We used these projects as the visual stimulus in our preliminary research with human subjects. By objectively proving the effectiveness of motion typography to the communication of a visual message, we hope to make “type in motion” a standard part of the design curriculum. Our test is small in scope and serves to give us clearer questions and methods for future study.
METHODOLOGY

The set of stimuli used in this experiment consisted of four typographic animations, and four still images that corresponded to the typographic animations. They were extracted from student projects produced during the course “Type in Motion” instructed by R. Brian Stone at The Ohio State University.

There were 4 animations that were divided into two categories, a pair of “verbal and visual equations,” and a pair of “animated antonyms.” The four still images, were modified screenshots of a corresponding animation.

The procedure consisted of showing the stimulus to the subject and asking him or her to complete a quantitative mood rating scale. Subsequent to viewing the stimulus, they were asked to make qualitative comments on what they viewed. Prior to seeing the first animation or still, subjects were asked to complete a mood rating scale, indicating how they were feeling at that moment in time in order to establish an emotional baseline. Test participants viewed the stimulus on a computer screen. Figure 1 shows a typical still image of a typographic stimulus, contrasted by the animated message sequence shown in figures 2–6.

This quantitative measure is synthesized with qualitative observations of participants. The facial expressions and body language of participants were recorded on videotape. Our experience has shown that research participants may not always fully articulate their feelings through a quantitative scale. What they “say” is not always what they actually “feel.” We assumed that some participants might not be fully aware of the emotional condition they are in at a particular time. Additionally, the participant’s condition may be transitory enough to not affect the outcomes of the mood rating scales. The questionnaires would give us a structured reflection of the emotional state they believe they were at that time. Their facial expressions and body language would complement the questionnaires, giving us other elements and more information to analyze.
Quantitative Analysis

Analyses of the mood rating scales were used to determine if there were any measurable emotional changes based on the stimulus viewed. A mood rating scale (Plutchik, 1980) was used as the primary quantitative metric for evaluating mood changes in participants. This scale shows eight words that represent the eight clusters of mood terms corresponding to the primary emotion dimensions. These words – Happy, Fearful, Agreeable, Angry, Interested, Disgusted, Sad and Surprised – were to be classified into five different levels of activation: Not at all, Slightly, Moderately, Strongly and Very Strongly.

By completing the mood rating scale, subjects would be able to give us a structured reflection of the state they believed they were in at the time they were exposed to a given stimulus. 10 participants viewed a module that displayed still images first, and animated messages second. 10 other participants viewed the same modules but animations first and still images second.

The nature of the emotional responses varied from the four different stimuli presented, but the differences between animated versus still emotional responses were constant within the same stimulus. Summarizing all the stimuli into one graphic confirmed to be ineffective, as different stimuli trigger different emotions, and one tended to suppress the other. For investigation purposes we analyzed each stimulus individually, and selected to report the stimulus “Ping-Pong” as an example. It shows a representative display of the differences observed on the emotional responses of animation versus still image.

![Figure 7](image-url)

*Figure 7* Shows average emotional response from participants for stimulus “Ping-Pong”

Although participants responded differently when we switched the order of the animated stimuli to the still stimuli, there does not appear to be any measurable difference in how participants reported their emotions. Negative emotions tended to flat line, indicating very little change. Furthermore, the results from the analysis show that the emotion activation is more powerful when the typographic message is in motion than when it is shown in a static state.
Qualitative Analysis

To complement the quantitative data, while viewing the participants via videotape, we applied Schlosberg’s (1954) work on the activation theory of emotion. In it he developed the idea that at least three independent dimensions are needed to describe what we know about facial expressions relative to emotion. One of these dimensions is pleasantness-unpleasantness. The second is attention-rejection, and the third is intensity or level of activation. Every facial expression of emotion could be described in terms of these three axes.

“Paul T. Young (1961) began by pointing out that we judge the presence of emotion in another person on the basis of various kinds of evidence. The kinds we use are (1) knowledge of the situation, (2) knowledge of how a person typically reacts to various situations, (3) physical signs of disturbance, and (4) types of behavior used by a person to adjust or adapt to the situation. Based on these kinds of observations we make interpretations or inferences about the presence of emotion in another person” (Plutchik, 1980).

These qualitative evaluations emerged as a valuable portion of this research. A limitation of the structure of the quantitative portion is that the emotional state is sampled at a point between the stimuli. Through our qualitative observations, we saw that it may be more important to measure in some fashion the subject’s emotional state while viewing the stimuli. This may involve the use of measuring physiological responses. While viewing the stimuli, bearing these hypotheses in mind, we observed a variety of changes in facial expressions when participants were exposed to the stimulus. Again, these typically favored the positive emotions. Figure 8–10 shows participant #5 viewing the animated sequence shown in figures 2–6. Figure 11–13 shows the participant viewing the corresponding still image (figure 1). The changes in facial expressions while viewing the animated stimulus are clearly visible, while the still image evoked very little change in expression.
CONCLUSION

We believe that “type in motion” or kinetic typography that is specifically designed with the intent of enhancing meaning, can evoke emotional responses. Figure 7 shows that the emotion activation is more powerful when the typographic message is in motion than when it is shown in a stationary manner. This quantitative result, synthesized with our empirical data was typical in the majority of participants tested. Further studies are needed if the medium is to move beyond arbitrary applications of “flying type.” Our preliminary results appear to support the idea that motion typography has the ability to influence reactions within the viewer. These reactions, whether they are excitement, delight, humor, agitation, or tension, make typographic communication a richer, more memorable experience, even if these reactions are momentary.

Further Study

Our preparatory research has indicated that “type in motion” studies and its effect on emotions, may yield more meaningful kinetic applications. Although emotions have different elements (namely, feelings, behaviors, and physiological changes), they are still unitary phenomena. We intend to carry this research further to develop theoretical insights relative to the inherent features of “type in motion.” To accomplish this task, the research will include the messages’ emotional effect, by incorporating the following:

• Improve the control of stimuli variables
• Develop new methods of testing and measuring emotions
• Investigate aspects of feelings and behavior through different methodologies
• Investigate the physiological changes in participants
• Test with a larger sample and a randomization of the stimulus

REFERENCES

Young, P.T., 1961, Motivation and Emotion. (New York, NY: Wiley)

Credits

“Ping-Pong” animation by Bok Young Kim, The Ohio State University