

## Motion Language for Interactive Media

### Developing an Experiment to Uncover Common Meanings of Motion

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#### Abstract

New media affords designers the opportunity to design interaction experience beyond static representation. Motion is a key element in interactive environments, but there is very little guidance available concerning when and how to use motion in interactive media. Currently, most designers use motion intuitively in terms of "coolness" or imitate what has been done without considering what those motions really mean to users or their appropriateness to functions. These approaches cause users to become confused, inefficient, and have greater difficulty interacting. Appropriately used, motion reduces the requirement for perceptual and mental information recording and reorganizing. It can reduce decision-making time, and also increase memory efficiency.

By looking at motion systematically in terms of how users understand it, the knowledge of how to use motion properly and effectively in interactive media can be revealed. Knowledge of motion as used in interactive media will be generated from analyzing and synthesizing empirical studies in two areas: affordances of motion in navigation and the effects (meaning) of each type of motion as determined by users.

This knowledge can assist designers in understanding a language of motion leading to its more effective use.

#### Keywords

Motion Affordance, Motion Cognition, Motion Graphic, Interaction Design, Multimedia, Human-Computer Interaction (HCI), Graphic User Interface (GUI)

## The Design of Pen Gesture to Command Miniaturized Information Devices

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#### Abstract

The developing trend of information products today is personalization and size reducing. Due to the requirement of size minimization, most of these products are reduced to a LCD display as the principal part. We not only read message from the display, but also execute pen operations on the display to command the device. In most pen operations, we use the fine tip of a special pen to touch the tiny keypads or icons on the display. However, a more natural approach of pen operation, called pen gesture, has been developed recently. It allows users to directly write or draw commands (writing icons) on the display. So far, there are few researches on the ergonomic aspect of pen gesture. Thus, we tried to explore how the pen gesture can be properly designed to command a miniature information device, such as a PDA, in this study. We conducted a series of surveys of questionnaire and interview as well as a protocol analysis to find out the critical and frequently used commands in operating a PDA as well as the cognitive model of the users on these commands. By applying the cognitive model as well as appropriate design principles, such as gestalt principles, several alternative prototypes of pen gesture for each command have been developed and systematically evaluated on their ease of learning, memorizing, using, and distinguishing with each other. Through the analysis on the collected data of evaluation, we have concluded not only a set of appropriate design of pen gestures for the critical commands, but also design principles of pen operation, gestures.

#### Keywords

miniaturized information devices, gesture command, pen computing, mental model