

The Development Process of Modern Household Objects

Coffee making devices for homes in the United States, 1900 - 1980

Omoya Shinsuke

The University of Shiga Prefecture

Abstract

The ways of coffee making in American homes have changed very much in the past one hundred years. Coffee making devices in the U.S. have been modernized, as have many other everyday artifacts. After the Second World War, in particular, they have influenced many nations' habits of coffee preparation and consumption. In this paper, we trace the development process of American coffee making devices and try to account for their design changes through their background.

The electric percolator is an American invention of the early 1900s. Since then, many technical developments followed. It became the most popular method of coffee-making in American homes. The second popular type around the 1940s was a vacuum-drip device made of glass. Simple paper-filtering method spread after the 1950s. Automatic filter-drip machines almost overwhelmed the market after the 1970s.

These changes of methods/devices can be explained through some background factors: i.e., market competition and technical innovation, change of American 'taste' for coffee, and European influence on coffee making. Influenced by these factors, appearance and imagery of those devices also changed through some stages of the development.

Keywords

design history, coffee-making devices, the United States

A basic study on the button design of electric home appliances for older persons

Song, Bok-Hee

Industrial Design Engineering, KUT

Jung, Kwang-Tae

Industrial Design Engineering, KUT

Yun, Han-Kyung

School of Information Technology, KUT

Abstract

Button is one of the most important components in the user interface of electric home appliances. In many cases, older persons undergo difficulties for the control of button in electric home appliances because of button size, type, etc. It was identified in basic questionnaire survey and usability testing that was conducted for microwave oven before. So, it is necessary to study for older persons' performance and preference according to button size, type, etc.

In this study, two experiments and questionnaire survey were conducted for older persons. The first experiment was to investigate older persons' performance variations for button control task and the second experiment was to investigate older persons' preference for button types and questionnaire survey was to investigate some characteristics on button design. Twenty-three older persons participated in the first experiment. Forty older persons participated in the preference evaluation of the second experiment and one hundred older persons in the questionnaire survey. We made experimental models to effectively perform this study.

As the results, movement time was affected by the moving distance, but was not affected by the button size to which one is moving. Also, movement time was affected by the interaction of the moving distance and the button size. For the preference evaluation, older persons firstly preferred the concave-type button and secondly preferred convex-type button. And, older persons disliked tact-type and membrane-type button. Some characteristics on button design were identified from questionnaire survey.

Also, Fitts' law, which has successfully described the one- or two-dimensional control task, was validated for the button control task. The result showed that Fitts' law well describes older persons' button control task, too. In conclusion, the results of this study can be applied in the design of electric home appliances for older persons to improve its usability.

Keywords

button design, movement time, preference, older persons