## A Study of Product Form in Plastic Aesthetics—Digital Camera as Example

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## **ABSTRACT**

Form follows function is one of classic rule in history of design, while form and function are always considered as the design factor of one form with two aspects as well as a direction for the design thinking of causation. Form in essence is recognized by general people as figurative that is known together as product 's visible contour, but its implication is abstract aesthetics; however, function is explained as each effective when using products, all of which work to clarify the two 's relationship. As a consequence, form can not be decided on the design factor which is constructed on concept, but on the ideas what designers what to express while the ideas are added with factors of form beauty through the design to make products bring out their own expression. Consequently, the focal point what this study intends to explore lies in the thinking mode of design led by the inspiring developmental relationship by taking Product Form as example through form aesthetics. In design, there are a number evaluating methods aiming at form or product aesthetics, but most of them intend to evaluate and compare the outer appearance of specific products. Different types of products with differential meaning and complication, however, cannot put in the same category. If taking aesthetics of form as a basis subjectively, simple exploration conducted by analysis of Product Form shall benefit designers ' reference. Form is classified as functional form and decorative for, while the former means the one created from norms such as technical limitation, characteristics of materials and operating interface that meet requirements with the form itself endowed the functions; the latter signifies the meaning of spiritual aspects such as form, aesthetics to present products, symbol and sensibility developed from the norms such as psychological requirements, social cognition and cultural pulse and requirements. In response to the outer appearance of the products, this study takes on the analysis of the aesthetics of form by taking Product Form as example with the functional form and decorative form as the reference value in the study, so as to evaluate and analyze the relationship between form aesthetics and Product Form. The purpose of product design lies in satisfying human being 's living requirements, while the aesthetic function of psychological requirements is indispensable in addition to the practical function of physical requirements. Particularly, we are currently living in a hi-tech and highly sensible environment as well as facing an era of standardization and mechanization, human 's strong demands on sensate living have enabled consumers to put great emphasis on the aesthetics of products. Products with highly aesthetic form will turn into the mainstream of consumption as well as the developmental trend in the future market. This study seeks to explore into issues concerning form of products from views of aesthetic psychological function by standing on a stance of product design. In addition to discuss related literatures as the basic reference for theories and search for verification through the questionnaire, the focal point lies in understanding the configurative factors of products 'aesthetic form. The comprehensive induction through statistics and analysis finds that products with aesthetic Product Form are characterized with its conciseness, complete structure, harmonious colors, exquisiteness and novelty. It shows that there exists low and high level and specific factors.

Keywords: Plastic; Aesthetics; Product Form

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## **REFERENCES**

中文註解【1】 張文智《電冰箱需求分析研究》Tatung Journal,1983年p15-25 【2】 王錦堂、梅平強《幾何型建築》 ,1991年p10-13 【3】李醒塵《十九世紀西方美學名著選(德國卷)》復旦大學出版社1990年版,P417【4】鄭麗玉《認知心理學-理論與應用》五南圖書 ,1994年【 5 】John B Best原著,黃秀瑄、林瑞欽編譯《認知心理學》師大書苑,1991年【 6 】陳俊余《從生活型態觀點探討行動電話 感性特質之研究》碩士論文,1999年7月【7】蔡子瑋《產品意象語言研究》碩士論文,1994年【8】高日菖、游萬來、葉博雄《收音 機意象及其表徵設計的研究》論文研討會論文集,1996年【9】何明泉、陳潔瑩《設計師與使用者對產品意象關係之研究》設計學會學 術委員會編著,1997年p63-68 【10】依日光譯《新設計工學概論》復興出版社,1991年p36-39 【11】楊國樞、文崇一、吳聰賢、李亦 園編《社會及行為科學研究法下冊》東華書局,1995年p721【12】 林徨斌《以消費者觀點探討資訊產品的感性特質 - 以個人電腦為例 》碩士論文,1997年6月 【13】 陳肇杰《產品造形語彙之研究》碩士論文,1993年p66-76 【14】 施韋名《眼鏡造形與感覺意象對應關 係之研究》碩士論文,1996年 外文註解 【a】 F.D.K.Ching《Architecture Form Space & Order Litton》New York,1979年p45 【b】 鮑姆 加敦《理論美學》梅諾爾出版社,1983年漢堡(德文版),P2【c】 Norman. D.《The Psychology of Every Things》Basic Books,1988年【d 】 Mitsuo Nagamachi《Kansei Engineering and Comfort》International Journal of Industrial Ergonomics 19, 1997年p79-80【e】British Food Journal《Customizing the Design Process》British Food Journal.Vol.97 No.3, 1995年p26-27 【f】Mitsuo Nagamachi《Kansei Engineering: A new ergonomic consumer-oriented technology for product development》International Journal of Industrial Ergonomics 15, 1995年p3-11【g】 Matsubara Yukihiro《Hybrid Kansei Engineering System and design support》International Journal of Industrial Ergonomics 19, 1997年p81-92 [h] Yamamoto, K. 《Kansei Engineering The Art of Automotive Development at Mazda》 Special Lecture at The University of Michigan , 1986年 參考資料 一. 佟景韓《造形藝術美學》洪葉文化事業有限公司, 1995年2月 二. 李醒塵《西方美學史教程》淑欣出版社, 2000 年1月二版 三. 宋伊可《消費者對產品外觀價值感認知差異之研究 - 以行動電話為例》碩士論文, 2002年6月 四. 趙志昌《從感性觀點探 討資訊產品意象的特質 - 以數位相機設計為例》碩士論文, 1998年1月 五. 洪嘉聯《產品再設計創新之研究 - 以數位相機為例》碩士論 文, 2001年6月六. 邱秋德《產品造形審美機能之研究》碩士論文, 1998年6月七. 李培守《影響產品造形發展因素之研究》碩士論文 , 1998年7月 八. 張振銘《設計者與消費者產品意向認知差異性之研究》碩士論文, 2001年1月 九. 梁朝順《產品設計中形素之研究》碩 士論文,1998年7月 十. Mike Baxter《Product Design》Chapman & HALL,1995年p176-177 十一. 長町三生 ,1997,『感性工學和方法 論』『感性工學的構造』,感性工學委員會,日本,P.93-99。 十二. 山田瑛,1998『感性工學』,EAJ Information No.72, The Engineering Academy of Japan,日本東京, p.1-6。十三.長町三生,1997,五版,『感性工學』,海文堂,日本東京,p.76。十四. Economist, August 4,1990, DIGITISED SIGH, The Economist, p68 十五. Korobkin, B. J.,1976, "Image for Design: Communicating Social Sciencearch to Architects Cambridge " Mass: Architecture Research Office, Havard Graduate School of Deaign 十六. Griffin, A. and Hauser, J. R., 1993, "The Voice of Consumer" Marketing Science, Vol.12, No.1, Winter