

On Structure of Uncertainties

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As a conventional concept of uncertainty, we are familiar with the ‘probability’ of a phenomenon. Also we often discuss the ‘uncertainty’ of knowledge. Recently, Fuzzy Theory has brought a hidden uncertainty, ‘fuzziness’, to light. Reflections on these ideas lead to a fundamental question: What kinds of uncertainty are we aware of? Motivated by this question, this study aims to explore categories and modalities of uncertainty. For instance, we have found that (i) ‘form’ is a category of uncertainty; (ii) ‘inconsistency’ is a modality of uncertainty; (iii) the inconsistency of form is one of the major uncertainties. Through the classification of adjectives implying various uncertainties, we elucidate seven uncertainties (or nine if subcategories are counted) and identify three essential ones among them, such as the fuzziness of wording. Finally the structure of uncertainty will be shown. The obtained structure is verified by psychological experiments, while the validity of three essential uncertainties is examined by linguistic analysis.