

Emotion Utility and Perception Utility

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Bentham's utility is described by pleasure, happiness, satisfaction, and so on, referring to a kind of emotional attribute, can be called "emotion utility"; combining the psychophysical analysis with the econometric modeling discussion, He, 2012 reveals that utility is the subjective quantity of commodity or evaluation, referring to a kind of perceptual attribute, can be called "perception utility". The utility research should deal with the two utility concepts but not solely Bentham's type.

A corollary derived from econometric models and He, 2012 is that importance of the quantitative perception exceeds the emotional evaluation in one's economic choices. Benthamists perhaps misunderstood an economic choice as an enjoyment choice. In an economic choice, such as purchase choice, exchange choice, and risk choice, the first determinant is "whether it is worth to pay", a comparison between subjective quantities, but not "whether I am pleasant" that is usually seen in an enjoyment choice, such as eating an apple or a bread, watching a football game or a movie, and accepting an unfair proposal or rejecting it, in which one seeks a physiological or psychological gain. The distinction between perception utility and emotion utility comes from and is in turn used to interpret the difference between economic choice and enjoyment choice. The utility analysis should base on the discrimination between economic choice and enjoyment choice.

In the electrical-power massage experiment reported in He, 2012, the instruction addressed to subjects contained the following contents (see page 2 in Supplemental Files for He, 2012 on the journal's web site <http://hdl.handle.net/1902.1/17166>):

Usually there are two types of evaluating massages. One is basing on the degree of your comfortableness, namely, if you feel more comfortableness in a massage, you will evaluate a higher price, and if you feel little comfortableness, you will evaluate a very low price, without referring to the massage duration in time. This is not the evaluating type the experiment wants. Another evaluating type is basing on the massage duration in time. This is the evaluating type the experiment wants. You should price a presented massage by concentrating on the massage duration but not your comfortableness in the experiment. Just like in an electrical-power massage cure, the price is determined only by the massage duration but not one's comfortableness. We want to know how you intuitively evaluate price only basing on the massage consumption quantity.

Such an instruction obviously let subjects judge by the perception utility, and thus, subjects delivered their utility estimates identified with the forms of sensation scale in psychophysics in the electrical-power massage experiment (He, 2012). Nevertheless if subjects had been instructed to evaluate the massage by their comfortableness, i.e., by their emotion utility, subjects would have reported their utility estimates without any regularity, which was indeed the observed results. In other words, perception and emotion utilities are two different types of judgments, and the former follows psychophysical rules but the latter not. We have experimentally verified the perception utility

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maximization in Linear Expenditure System (Stone, 1954). Does emotion utility maximization exist? Certainly, it is important to discriminate emotion and perception utilities.

Benthamists and econometricians had respectively worked in the two different domains long ago. The perception utility has broadly used in economic empirical and experimental studies to determine utility functions or value functions in various models, such as the econometric models (e.g. Stone, 1954; Liuch, 1973) and risk-choice models (e.g., Tversky and Kahneman, 1992; Gonzalez and Wu, 1999). Whether “emotion” itself means “irrational”, and is there the utility maximization model for the enjoyment choice? We should perhaps take into account such a possibility that the emotion utility exists but no maximization can be made for it.

In Galanter (e.g. 1962)’s study, he asked subjects to report a money amount matching to a double happiness that a gift of \$10, \$100, or \$1,000 would bring them, and derived a power function, a typical psychophysical law, from his experimental data. That is a perception utility measure converted from emotion utility by the instruction such as “a double happiness that a gift of \$10, \$100, or \$1,000 would bring you”. Emotion utility and perception utility seem not completely irrelevant. However, how do we see the difference between “a double happiness” and a simple “comfortableness”? “A double happiness” seems not a natural judgment appearing in choice behaviors but a simple “comfortableness” seems more natural. They have so distinct effects in utility estimates. We perhaps know little about the properties of emotion utility.

He, 2012 only discussed the Klein-Rubin utility maximization model in depth, are the utility functions contained in other econometric utility maximization models also construct-able and measurable in a perception utility framework?

Current ultimatum games used mixed utility judgments, in which unfair feelings (related with enjoyment choice) mix with some monetary return (related with economic choice). Could we conceive an ultimatum game mainly involving the emotion utility judgment or perception utility judgment singly so that we can depart the emotion effect and perception effect in bargaining behaviors? Furthermore, how do the emotion utility and perception utility affect the difference of responders’ rejection behaviors between the moderate and very high stake sizes (e.g. Andersen et al., 2011)? The neuroeconomic study has revealed that emotional factors affect responders’ behaviors differently in the ultimatum game. Takagishi et al. (2009) tested responders’ salivary alpha-amylase in an ultimatum game and discovered that those who rejected unfair offers appeared an emotional arousal associated with adrenergic activations, whereas, those who accepts unfair offers did not.

And so on.

We may just begin, and we will need more knowledge to clarify the attributes and functions of the emotion utility and perception utility.

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