

JARGON ALERT

Utility

BY LOUIS SEARS

Diamonds are attractive gems but water is essential to life. How can it be, then, that under most circumstances people are willing to pay far more for diamonds than water? Economists have struggled with this seeming paradox since Adam Smith famously proposed it in 1776, and in the process have changed how we understand and assess utility.

Utility, broadly, represents how useful or satisfying a good, service, or action is to an individual. Since economists believe that people want to live as happy and fulfilling lives as possible, understanding the utility that different outcomes create for individuals can help in understanding and predicting how they will behave. This tells businesses which goods they should produce, lets politicians know which policies they should enact, and allows people to understand the motives of those around them.

Much of the early theory of utility has its roots in the 18th and 19th century utilitarian philosophy of Jeremy Bentham and John Stuart Mill. Both authors believed that society's aim should be to promote the greatest happiness for all involved — “the greatest good to the greatest number,” in Bentham's phrase. Bentham believed that this happiness was dependent on, and could be measured through, the intensity of pleasure or pain that a good or action produced for an individual, as well as several other factors. In fact, Bentham believed that by using these measurements as well as 32 traits of each person, society could measure and compare the happiness of all individuals. While still believing that maximizing mankind's utility was the most moral approach for governance, Mill argued that it was best to allow individuals to make their own choices, as long as this didn't interfere with the happiness of others.

While economists still look for ways of improving the utility of society, their conception of the nature of utility and how it should be measured has changed significantly since the time of Mill and Bentham. In most contexts, economists today generally reject the concept of trying to measure numerically the utility that someone derives from an outcome (that is, its “cardinal utility”) and to compare different people's utility from different outcomes. Instead, they look at the order in which an individual desires various outcomes, that is, the person's “ordinal utility.” To understand this ordering, they observe the choices individuals make between alternatives, and assign a higher utility value to the

outcome which is eventually chosen. By keeping track of these revealed preferences, economists are able to compare the utility of all kinds of goods and actions to the individual.

Because it is impossible to compare the utility levels of different people, modern utility theory does not allow the economist to combine individual utilities into one number for all of society. In other words, if building a bridge makes some residents happy by improving their commute to and from work, but angers an equal number of others who do not own cars but must pay for the project, most economists would say that it is impossible to judge whether the happiness of the first group outweighs the dissatisfaction of the second group. Rather, in the tradition of Italian economist Vilfredo Pareto, economists can only state whether or not the decision improves the lot of some without hurting anyone else, or causes a Pareto improvement.

Economists do recognize that the utility a good brings an individual can vary according to his or her current situation. The idea that a good can bring different amounts of happiness depending on the current state of the individual leads economists to look at the effect of an additional unit of a good on the individual — that is, the good's marginal utility. The willingness of an individual to pay for a good does not depend directly on how costly it was to produce the item, or the usefulness of the item on the whole, but instead rests on the satisfaction that each additional unit of the good provides. Since individuals generally satisfy their most

important needs with the first few units of the good they acquire, additional units are likely to have progressively less value to the acquirer. Economists call this the principle of diminishing marginal utility: The first unit of a desired good holds more utility than the second one, and so on.

This brings us back to the matter of diamonds and water. While the overall utility of water to an individual is much higher than that of diamonds, the marginal utilities of the two are a different story. At any given moment, most people do not have a strong desire for more water (unless the person happens to be crossing a desert, or, say, has just finished a workout); for them, the *marginal* utility of additional water is modest. On the other hand, most people are far from feeling saturated with diamonds, and would derive considerable utility from owning another one. But not everybody: As economics teaches, utility — like beauty — is in the eye of the beholder.

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