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Behavioral Assumptions in Jevons and Menger

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Abstract:
In their key works, W. Stanley Jevons (1835-1882) and Carl Menger (1840-1921) introduce crucial behavioral assumptions as these relate to individual and aggregate economic activity. The assumptions found in Jevons' work primarily focus on the 'Pain and Pleasure Principle', originally established by Jeremy Bentham, and how the human characteristic of inevitable variability interacts with basic needs. Subsequently, Menger's contribution is centered on the idea that the value of a good is inherently subjective and also dependent upon human variability. This inquiry, therefore, seeks to establish that Jevons' and Menger's behavioral assumptions led to their being classified as early 'behavioral' economists. Expanding outwards, the field of 'Behavioral Economics' can be described through the use of a commonly assigned utility function that is familiar in the standard economic analysis of a rational individual – while correcting for inevitable variations in human behavior. Upon careful consideration, it can be determined that Jevons and Menger share many similar ideas and approaches with modern behavioral economists.

***Journal of Economic Literature* Classification Codes:** B1, B41, D9

Key Words: Behavioral Economics, Carl Menger, Consumer Theory, Microeconomics, W. Stanley Jevons

In their key works, W. Stanley Jevons (1835-1882) and Carl Menger (1840-1921) introduce crucial behavioral assumptions as they relate to economic activity. This inquiry seeks to establish that Jevons' and Menger's behavioral assumptions classify them as behavioral economists. In *The New Palgrave Dictionary of Economics* (2008, 433-434), Steven Durlauf and Lawrence Blume teach us that *behavioral economics* can be described as using the same utility function that is familiar in the standard economic analysis of a rational individual while correcting for the inevitable variation in human behavior. Additionally, behavioral economists seek to question the axioms and assumptions posited in standard economic analysis with the eventual goal of creating a more reflective set of standards by which we base further analyses. Although both Jevons and Menger contributed to the advancement of economics long before the consideration and development of behavioral economics, the question of whether or not they were engaging in practices similar to those of modern behavioral economists begs being asked. Certainly, both scholars were interested in developing economic theories as they relate to satisfying man's first need: pursuing pleasure and avoiding pain.

Assumptions Advanced by Jevons

In his *The Theory of Political Economy* [1871], W. Stanley Jevons (1957, 28-29) begins by immediately establishing Jeremy Bentham's *Pain and Pleasure*

Principle as a basis for furthering his ideas. Essentially, an individual's primary motivation for their actions is to seek pleasure and avoid pain. This practice by Jevons naturally allows the reader to begin drawing parallels between him and modern behavioral economists. Jevons ponders human behavior rather extensively in the first few chapters, questioning how pain and pleasure interact in man, the rationale of a man who looks to the future versus a man (or "savage") who merely lives in the present moment, and what a man has a tendency to do once the necessary needs in his life are met (a concept very much reminiscent of Maslow's Hierarchy of Needs Theory, which emerged in 1943). More specifically, Jevons (1957, 29) introduces the idea that any feeling, whether it be pain or pleasure, consists of two dimensions: duration and intensity. If this can be accepted, Jevons then furthers the idea in claiming that the intensity of a feeling is in a constant state of variation, much like the incessant variation that generally characterizes the human mind. This can be represented by a downwards sloping curve, as the curve shape represents the idea that the change is constant, and the level of intensity virtually never settles on a particular value. From the beginning, the reader may begin to decipher that Jevons is establishing a constant variation or an unpredictable quality as a fundamental consideration when discussing the consequences of human thought and behavior—the byproduct, of course, being economic activity.

Furthermore, Jevons begins expanding his ideas on a particular circumstance of pain and pleasure established by Bentham: the role that propinquity or remoteness plays in the force of the interaction with pain and pleasure. Specifically, Jevons (1957, 33) establishes the idea of *anticipated feeling*—the idea that the anticipation of a certain event that will bring pleasure (or pain) impacts our current pleasure with respect to that event. In fact, there are two dimensions at work in an anticipated feeling: the amount anticipated to be felt in the future and the amount of time that will pass until that future event. Here, Jevons is making a powerful statement about the state of human rationale at any given moment as a function of not only the pleasure that a person is currently feeling but any action a person can take or event they can participate in in any point in the future as long as such an action or event promises them future pleasure. This assumption has large implications for individual economic activity and consequently for the participation in the economic markets of a society. For example, Jevons (1957, 35) posits that this driving mechanism of human behavior provides the primary rationale for industry and saving as well as for the accumulation of stocks of commodity. If a man has the particular foresight to consider his future happiness, he is driven to participate in the accumulation of stocks and in savings so that he may secure his future happiness, which in turn increases his current state of happiness. This individual "can always hope for more than he has, and can feel that every moment of exertion tends to realise his aspirations." Certainly, it is not difficult to accept that this particular aspect of human behavior plays a large role in individual economic activity: in fact, several aspects of the market are based in and rely on this crucial aspect of human rationale.

Jevons begins his last collection of ideas about the variation of utility with a final crucial assumption: the laws of the aggregate depend on and are determined by the laws of the individual. While Jevons (1957, 48) mentions this idea passingly, he identifies it as being one that is foundational to the next several sections in which he discusses the variation of utility at length. This assumption, while at first glance is seemingly unthreatening, takes on an entirely new meaning when entertained through a behavioral economics lens. If we accept that there are large amounts of variation in human behavior, even within the scope of one individual's behavior, is the assumption that we can create aggregate models based on the laws of the individual the best foundation for a further set of ideas and projections? Certainly, Jevons has considered this and decided that as long as we accept the variation in individual behavior, we will accept that any models of the aggregate based off individuals will almost certainly exhibit this variation as well. In fact, Jevons (1957, 48) claims that the only way that we can effectively observe and study what is theoretically true of the individual is to verify in practice the patterns of the aggregate as it relates to economic market activity, consumption, and production exhibited by a large body of people.

Assumptions Advanced by Menger

In 1871, the same year as Jevons' *Theory* was published, Carl Menger would also publish his first key work, *Principles of Economics* [1871]. Despite the two having never exchanged ideas on the matter, their thoughts would prove to be strikingly similar in content. Menger begins the third chapter of *Principles* by discussing a theory of value with the resounding main precedent being that value is not inherent in a good—it is only a consequence of man having assigned a value to it based on its quality to satisfy a need. Additionally, Menger (1981, 119) discusses such topics as the difference between value and utility and what distinguishes a non-economic good from a "good subject to the quantitative relationship responsible for economic character." As he concludes this section of the chapter focusing on the nature of value, he introduces a few key concepts, beginning with *imaginary value*. According to Menger (1981, 120), imaginary value is the result of an individual incorrectly assigning value to a good that does not, in fact, have value in regard to economic activity or consideration. He goes as far as to posit that "men can be in error about the value of goods just as they can be in error with respect to all other objects of human knowledge." In parallel to Jevons, Menger begins with the assumption that man is inherently flawed and variable. In fact, he may even be inconsistent to the point of not being able to recognize when he is receiving satisfaction from a good.

Along the same lines, Menger continues his assertions pertaining to the variability of man in his further discussion of the inherent value of a good. As mentioned previously, Menger was forthright in his claim that a good has neither inherent use value nor exchange value. In fact, Menger (1981, 118) claims this assumption to be a flaw of arguments previously made by other contributors to the subject. As it relates to his later assumptions, Menger (1981, 120) maintains that because a good has neither use value nor exchange value, it has no value at all until it is framed in terms of how the good may satisfy a particular need of man. For example, if a group of people find themselves on an island with a sustainable source of drinking water, the water has no value to the people because no person may want for water and would therefore not be willing or required to consider what would need to be exchanged or given up to obtain water. But, if the circumstances of the island change so that either the supply of water were to decrease to a point where the share of water must be divided, or if the number of people were to increase to a similar point, the water would then obtain value for every individual—because the water is not abundant enough to sufficiently supply every person on the island, either due to a decrease in supply or an increase in demand, the water is valuable and may be considered in terms of use value or exchange value.

The apex, then, of Menger's views on use value and exchange value rest on humans and their interactions with goods. The reader may make no mistake regarding his idea that there is nothing objective in determining a good's value—he very clearly states in several instances in the third chapter that a good has no inherent value, and the only circumstance that can bestow value on a good is one in which the good serves to satisfy the need of an individual or can bring the individual a sense of well-being. In addition, as was mentioned previously, Menger accepts and acknowledges the innate variability in human consciousness, making it clear that this assumption carries throughout the remainder of his models and other claims. It can therefore be inferred from these two assumptions that the value of a good is entirely subjective—existing at the whim of the everchanging needs of the individual—an idea that Menger consistently hints at as he establishes other claims. Indeed, this creates a disconnect in terms of consistently measuring the value of a good, a disconnect which Menger is acutely aware of in previous works contributing to the subject. Menger (1981, 121) therefore concludes the first section of his third chapter of *Principles* accordingly: "Objectification of the value of goods, which is entirely *subjective* in nature, has nevertheless contributed very greatly to confusion about the basic principles of our science."

Jevons and Menger as Behavioral Economists

At its core, behavioral economics attempts to consider standard economic models while correcting for the inevitable variability in human behavior. Therefore, behavioral economists may attempt to challenge certain axioms and assumptions concerning behavior by specifically targeting these assumptions in carefully designed research experiments. For this reason, it can be difficult to compare the work of Jevons and Menger to that of more recent behavioral economists. Both scholars published their respective works in a time immediately before the mathematization of economics became a widely accepted practice. During this time, it was not necessarily expected of a scholar that he or she should provide hard, scientific evidence of their claims before publishing them. Economics was still riding the line between being a philosophical study and emerging as a field of hard science that required definitive research results before making an assumption upon which following claims would be based. Therefore, even though many of the assertions made by modern behavioral economists rely on using experimental evidence to refute the claims of standard economic analysis, it is unreasonable to expect that Jevons and Menger be held to the same standard in regard to the question of whether or not they may be considered behavioral economists. Additionally, it is for this reason that four more broad characteristics of behavioral economists will be considered and compared to the practices of Jevons and Menger.

The first characteristic being considered is that of behavioral economists to, according to Durlauf and Blume (2008, 435), “[explore] alternative formulations of economic consequences to identify preference-relevant considerations that are ignored in standard economic analysis.” Consider Menger’s second assumption explored here that use value and exchange value do not inherently exist—the value only arises out of an individual’s need for that good. Menger’s stake to this claim relies on the fact that previous thinkers had based their theories of value on an inherent value of a good that he asserts does not exist due to the fact that value only exists in the consciousness of men. It may be argued, then, that Menger challenged previously established economic models of value with a “preference-relevant consideration”: while previous economic models did not necessarily base their claims on the preferences of individuals, Menger made a very concerted effort to do so. Additionally, we may consider Menger’s related third claim: that the value of a good is therefore entirely subjective as it is determined by the varying needs of individuals. Menger was unique in making such a bold claim following the ideas of his predecessors. By his reasoning, the preferences of individuals and the value of a good are interdependent, an idea that places much more emphasis on individual preferences as they relate to the value of a good than did previous ideas.

Secondly, behavioral economists aim to create a larger focus on the way that gains and losses are differentially treated. In particular, Durlauf and Blume (2008, 436) detail the efforts of economists Daniel Kahneman and Amos Tversky to create economic situations using the frame of the actual situation that the individual is likely to face, most particularly considering gains and losses in relation to the "status quo." In this instance, we consider Jevons' first and most crucial assumption: that humans are operating according to the fundamental Pain and Pleasure Principle. Certainly, we know that Jevons placed tremendous importance on pleasure and pain (i.e. gains and losses), as it was explicitly stated as the basis on which the remainder of his ideas would rest. Additionally, the conditions on which he is operating, originally defined by Jeremy Bentham and one of which is considered above, are comparable to creating a frame for the situations that individually are most realistically likely to face. The conditions (i.e. propinquity and remoteness, in addition to others) are an essential component of the original Pain and Pleasure Principle and are concerned with the pragmatic ways in which an individual is likely to experience the different situations of pursuing pleasure and avoiding pain.

The third characteristic being considered is that of behavioral economists to create strategic concepts and equilibria that integrate the idea of a decision-maker consisting of many inconsistent selves. The idea, according to Durlauf and Blume

(2008, 436-437), originates with an experiment conducted by Strotz in 1955 and is followed by a proposal by Peleg and Yaari in 1973 to create such concepts and equilibria. Again, we consider the latter part of Jevons' first assumption that the intensity of a feeling is in a constant state of variation and may be described using a downwards sloping curve. The curve model, rather than a model using distinct levels that occur at regular intervals, represents the fact that a feeling may never actually settle on a particular level for any significant amount of time. Because this model is used to describe the behavior of a single person whose intensity of feeling is in a constant state of change, it may be said that Jevons is painting the picture of the "many inconsistent selves" that exist within each individual, with each self only existing for a small fraction of time. Additionally, we consider Jevons' related third assumption that if one accepts the variation in human behavior, enough so as to accept the downward sloping curve as a representation of it, one may also consider that a model of the aggregate will exhibit this same level of variation as the model of the aggregate is based off the model of the individual. In this same vein, Jevons is considering how one might take the assumptions that apply to the individual and applying them to the assumptions of the aggregate in order to create a reflective and accurate set of concepts and equilibria in a similar fashion to the suggestion of Peleg and Yaari 100 years later.

The fourth and final characteristic of behavioral economists that we may consider is, as stated by Durlauf and Blume (2008, 437), that if “payoffs are ‘intrinsically’ dependent on beliefs and beliefs are determined in equilibrium, then types cannot be defined independently of the particular equilibrium outcome,” where “type” is a termed used in this particular context to describe a mechanism which is meant to aid analysis of outcomes given a player’s information as it relates to a problem. This idea was originally set forth by Harsanyi in 1967, who introduced the notion of types, and was later observed by Geanakoplos, Pearce, and Stacchetti in 1989. The essential idea to be gleaned from this observation can be summarized in an even more succinct way: equilibrium influences our beliefs and our beliefs determine our payoffs. Incidentally, both Jevons and Menger posit assumptions relating to the individual’s beliefs and how those beliefs influence outcomes or payoffs. First, Jevons’ ideas on anticipated feeling are an obvious commentary on the way that an individual’s beliefs influence their outcomes. Primarily, Jevons outlines the importance of this concept in regard to the success of savings and accumulation of stocks. In this situation, the benefits that an individual receives as a result of savings and accumulation of stocks is a direct result of their belief that they will receive said benefits. Secondly, Menger’s idea on imaginary value again deals largely with an individual’s beliefs, although in this context it is in a negative way. While he does not discuss many practical applications of this idea, he is explicit in concluding that individuals are not perfect and can therefore attribute value where no value exists. Similar to Harsanyi, Geanakoplos, Pearce, and Stacchetti, both Jevons and Menger rely on the fact that beliefs, in one way or another, influence payoffs and outcomes.

Conclusion

This inquiry has sought to establish that the behavioral assumptions introduced by W. Stanley Jevons and Carl Menger classify them as behavioral economists. In their key works, Jevons and Menger introduce and expound upon crucial behavioral assumptions as they relate to individual and aggregate economic activity. Although their respective works were published and considered long before the emergence of behavioral economics, there are distinct similarities between the assumptions that defined Jevons' and Menger's crucial works and many of the ideas presented by modern behavioral economists that have so far had a substantial impact on this new take on classical economic analysis. After careful consideration of the ideas and practices in both realms discussed here, it may be reasonably concluded that Jevons and Menger can be considered to have been two of the earliest behavioral economists. Both scholars operated under assumptions that considered preference-related activity which previous models did not, had a large focus on gains and losses as they relate to the status quo, utilized the idea of the individual consisting of many selves, and defined certain consumer activity based solely in the individual's beliefs. Certainly, we can see how human behavior and rationale has continued to fascinate economists over hundreds of years of development in the discipline.

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