

Ex ante and ex post: What Does Rod Stewart Really Know Now?

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Abstract:

Do we really know whether or not we have “maximized” utility, or do we just know that we are “happy” or “sad?” We argue that we can never know objectively whether or not utility has been maximized; however, people acting on a free market are sufficiently close to the decision as to be able to hazard a better guess about their opportunity costs than policymakers.

Key Words:

Utility, subjectivism, opportunity costs

JEL categories:

B41, D11

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<sup>1</sup> Corresponding author. We thank two anonymous referees for valuable suggestions. The second author has benefited from helpful conversations with Tara M. Sinclair and Lawrence H. White.

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### I. Introduction

*I wish that I knew what I know now when I was younger.*  
--Rod Stewart

What does Rod Stewart really wish he knew when he was younger? Presumably, he is lamenting mistakes or telling us that he would have pursued a different course of action had he known certain things which he knows now but did not when he was younger. The processes by which information is revealed and interpreted have occupied economists since the publication of Hayek's (1945) seminal paper on the subject. Of central concern to economists and policymakers alike should be the process by which we evaluate outcomes and adapt our expectations accordingly. In a world of radical uncertainty, economists and policymakers should question whether or not "optimality" is practical or tractable. We argue that it may not be.

The asymmetries between information before (*ex ante* or anterior) and after (*ex post* or posterior) action are puzzling. We want to know several things. Is hindsight really 20/20, or does radical uncertainty about things that didn't occur so limit our knowledge as to only allow for far more limited analysis of economic and social outcomes than the optimization framework would suppose? What do we know, what don't we know, and what does this tell us about our ability to make definitive statements about the world?

In short, we know that people seek happiness and firms seek profits. We know that people can register psychological impulses called "pleasure" and "pain." We know that firms can compare total revenue to total cost and ascertain whether or not they have earned a profit. But can we know whether or not someone has registered more pleasure from eating an apple than he would have registered from eating a pear, orange, or banana? Can we know whether or not Nike has earned higher profits by producing sneakers rather than loafers? In economic parlance, can we know whether or not someone has maximized utility or whether or not a firm has maximized profit?

It is our contention that we cannot. In this essay, we differentiate between *absolute* and *relative* satisfaction and argue that we can only ascertain *absolute* satisfaction *ex post*. People act on their expectations about relative satisfaction—Rod Stewart drinks Diet Coke because he expects to enjoy it more than drinking Diet Pepsi—and they evaluate actions on the basis of their experience of *absolute* satisfaction and a guess about the opportunity cost of that satisfaction. Rod Stewart evaluates his decision to drink Diet Coke based on the absolute payoff from doing so and his best guess about how Diet Pepsi would have tasted instead. The next section offers a brief discussion of recent literature on the subject. Section III argues that the aforementioned *ex post* uncertainty prevents us from making definitive statements about the new information available to an agent after he acts or about whether he definitely prefers the state of the world that actually obtains to other states of the world that might have occurred. Section

IV argues that even though this is the case, our only concern regarding revealed *ex post* knowledge is whether or not the actor is satisfied. Section V examines the policy implications. Section VI concludes.

## II. The Market as a Discovery Process

Neoclassical economic theory models firms and individuals as successful optimizers.<sup>2</sup> Late 20<sup>th</sup> century contributions, particularly those to the literature on public goods and the economics of information, focus on situations in which successful optimization leads to suboptimal equilibria. “Efficiency” is usually defined (either explicitly or implicitly) as the ratio of the value of outputs to the value of potential outputs or as the ratio of the value of outputs to the value of inputs, and a person or firm is said to behave “efficiently” if one of these ratios attains a maximum subject to technological constraints. A firm might be said to be more efficient than another if it attains a higher level of total factor productivity. Recent empirical literature attempts to characterize—however imperfectly—situations in which individuals and firms are unsuccessful optimizers.<sup>3</sup>

The market reveals information. However, it is no simple task to formulate theoretical or praxeological propositions about the content of that information. In layman’s terms, Rod Stewart cannot know with absolute certainty that he is better off as a result of action, that he undertook action appropriate to the attainment of his desired ends, or that those ends indeed attained for him a maximal level of satisfaction.

Hayek (1945), Mises (1949 [1996]), and Kirzner (1973) argued that the market process eliminates *ex ante/ex post* misalignments in expectations. In his seminal work *Competition, Knowledge, and the Market as a Discovery Process*, Hayek wrote that the market is a process in which economic actors with incomplete information revise and update their preferences and technical knowledge in response to new information. MacKenzie (2005) extends these insights to the political realm. North (2005) asks why, in the context of all that we know about the desirability of private property rights and decentralized markets, we have persistent “bad” outcomes—namely, why economic and political markets fail to weed out unproductive institutional arrangements. Fundamental to the analysis of information—whether stated explicitly or acknowledged implicitly—is individual action.

Mises (1949 [1996]) and Rothbard (1956, 1962) have demonstrated that man acts because he expects to remove “felt uneasiness” or to be “better off” as a result—this is to say that the motive for action is to effect a state of the world that the actor prefers to the state of the world that would have obtained in the absence of his action. A person expects to benefit anterior to any action. By extension, any two people considering an

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<sup>2</sup> See Kumbakhar and Lovell (2000) for a discussion and critique of this view. Herbener (1997) and Hulsmann (2000) provide recent treatments of equilibrium and Pareto optimality.

<sup>3</sup> See Coelli, Rao, and Battese (1998) for a discussion of this literature.

exchange with one another must necessarily expect to benefit before they will agree to do so.<sup>4</sup>

What is the result? Kirzner (1973) emphasized that the engine of the market is the never-ending string of successive ex post evaluations guiding entrepreneurial effort. He notes that we must recognize the *entrepreneurial element*. This means that we need to see the changing patterns of ends-means relationships as the outcome of a process of experience—experience wherein a person’s alertness to relevant new information generates a changing sequence of decisions.

In short, we know that information matters. Capitalism adjusts the structure of production to the wants of consumers—but how are those new wants generated? In the next section, we discuss how new preferences might be formed with the revelation of new information.

### III. Posterior Knowledge and Preference

Before we can make definitive statements about whether or not Rod Stewart prefers the state of the world which obtains to those which would have occurred had he pursued a different course of action, we must know whether he can evaluate his opportunity costs precisely. Specifically, he must know what would have happened had he pursued a different course of action. As this logically cannot and thus will never happen, we cannot speak definitively regarding the actor’s relative satisfaction with a given state of affairs.

It is certainly true that posterior knowledge will inform future decisions. Suppose our protagonist Rod Stewart drinks Diet Coke and discovers that he doesn’t like the taste. We can reasonably infer that he will choose something else (Diet Pepsi, perhaps) should he encounter circumstances similar to those in which he made his original choice. We can say nothing about his satisfaction (or lack thereof) relative to other states of the world that would have obtained had he pursued a different course of action.

Consider Rothbard’s (1962, 772-773) views on the matter:

We have ... seen that individuals maximize their utility *ex ante* on the free market.... But what of utilities *ex post*? People may *expect* to benefit when they make decisions, but do they *actually* benefit from their results?... How do the free market and intervention compare in traveling that vital path from *ante* to *post*?

For the free market, the answer is that the market is constructed so as to reduce error to a minimum.... For the entrepreneur, who carries the main burden of adjustment to uncertain, fluctuating consumer desires, the test is particularly swift and sure – profits or losses. Large profits are a signal that he has been on the right track, losses that he has been on a wrong one. Profits and losses spur rapid adjustments to consumer demands; at the same time, they perform the function of

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<sup>4</sup> See Rothbard (1956) for a complete analysis of the welfare consequences of exchange.

getting money out of the hand of the inefficient entrepreneurs and into the hands of the good ones...

Consumers are surely not omniscient, but they have direct tests by which to acquire and check their knowledge. They buy a certain brand of breakfast food and they do not like it; and so they do not buy it again. They buy a certain type of automobile and like its performance; they buy another one. And in both cases, they tell their friends of this newly won knowledge.

Rothbard is undoubtedly correct. The considerations he mentions establish not only that free decisions on the marketplace *can* eventuate in clear *ex post* gains, but that this is what we should expect. But what is the praxeological status of these claims?<sup>5</sup> Are they empirical generalizations, a matter for economic history? Are they theoretical propositions akin to the claim that utility *ex ante* is necessarily improved through human action?

In order to come to grips with these challenges, we argue that there are two ways to think about *ex post* welfare gains. First, *absolute* gains occur when the economic actor unequivocally states that he has improved his position in the world. This occurs when the entrepreneur earns profits or when the consumer registers a sense of pleasure and not regret. There is no doubt that people can conclude that they have made *ex post* gains. But claims of this sort are empirical, not praxeological.

Second, *relative gains* occur when Nike earns greater profits selling sneakers than they would earn from selling loafers, sandals, flip-flops, et cetera. Similarly, relative gains occur when Rod Stewart registers more pleasure from drinking Diet Coke than from drinking Diet Pepsi, RC, Fanta, Mountain Dew, et cetera. For the entrepreneur, accounting profits tell us whether or not *ex post* gains have been made. But they do not establish unambiguously that the firm has in any way “maximized” profits. In order to determine unequivocally that gains have been made, it is also necessary to stipulate that the decisions made by the firm were *more* profitable than any other that could have been made, and this cannot be established. Likewise for the consumer. A feeling of satisfaction, and repeat purchases, do reveal that *ex post* gains have been made in the weak sense. But it is impossible to demonstrate this in the strong sense, namely, that the benefits of a given purchase were, after the fact, greater than all possible other commercial interactions.

While it is clear that Rod can know nothing about his satisfaction relative to other hypothetical states of the world, it is clear that the consumer can know whether or not he experienced psychic profit, i.e., absolute satisfaction. Similarly, the businessman can ascertain if profits or losses were registered on his balance sheet. To summarize, there are two types of gain. *Absolute gain* occurs when an entrepreneur enjoys profits or when an actor enjoys psychological satisfaction. These gains can be observed, either on a balance sheet or by query. *Relative gain* occurs when an entrepreneur enjoys profits or

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<sup>5</sup> Mises (1949 [1996]) defines “praxeology” as “the general theory of human action.” The “praxeological status” of a proposition refers to its characteristics as a proposition within this general theory.

when an actor enjoys psychological satisfaction in excess of what the entrepreneur or actor would have enjoyed by pursuing a different course of action. As we cannot know anything about the states of the world that do not occur, we cannot make definitive statements about relative gains.

#### IV. Implications for Economics: Optimization<sup>6</sup>

The true state of an actor's knowledge *ex post* has dramatic implications for the usefulness of the neoclassical optimization paradigm. James Buchanan (1989, p. 14), who himself was trained at the University of Chicago and whose analysis of club goods (1968) is an exemplar of straightforward neoclassical economic analysis, is surprising in his assessment of what economists should be doing. He suggests that economists

exorcise the maximizing paradigm from its dominant place in our tool kit; that we quit defining our discipline, our science, in terms of the scarcity constraint; that we change the very definition, indeed even the very name of our science; that we stop worrying so much about the allocation of resources and the efficiency thereof; and, in place of this whole set of ideas, that we commence concentrating on the origins, properties, and institutions of *exchange*, broadly considered.<sup>7</sup>

It is to the “allocation of resources and the efficiency thereof” that we turn our current attention. The first fundamental theorem of welfare economics states that given a set of assumptions—perfect information, infinite numbers of consumers and producers, homogeneous goods, and so on—a decentralized market economy will produce an efficient allocation where efficiency is defined in the Paretian sense—it will be impossible to improve one agent's welfare without harming another's. A “market failure,” then, is defined as a failure of the first welfare theorem: market failure occurs when the decentralized market fails to generate an outcome that is Pareto optimal.<sup>8</sup>

This analytical framework has paved the way for the development of unique strands of literature that deal with the failures of certain assumptions. Various state interventions are prescribed in accordance with the welfare consequences of particular “market failures” whereby the assumptions of perfect information, complete markets, and multiple sellers fail to hold. The preceding analysis of Rod Stewart's *ex post* knowledge calls into question our ability to assess economic outcomes and evaluate welfare consequences in a general sense; moreover, it forces us to ask whether or not the optimization paradigm admits normative conclusions. The method of normative economics is to use the perfectly competitive outcome as a normative benchmark and to prescribe various interventions or make pronouncements about the quality of an outcome on the basis of the outcome's deviation from the outcome required to satisfy the first welfare theorem. This requires that *someone*—the economist analyzing the situation,

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<sup>6</sup> See Boettke (1997) for a complete historical discussion of the virtues and vices of general equilibrium theory.

<sup>7</sup> Quoted in McQuade (2000).

<sup>8</sup> There are discussions & definitions in Varian (1991), Mas-Colell, Whinston, and Greene (1995), Jehle (1991), and Luenberger (1995).

we'll say—knows all the utility functions, production functions, and endowments necessary to articulate an equilibrium solution. We have just seen, however, that the presence of uncertainty regarding posterior outcomes precludes Rod Stewart from accurately assessing the opportunity costs of foregone actions and the desirability of states of the world that do not come into being.

By the principle of subjective value, we must conclude that if Rod Stewart cannot assess these states of the world, an outside observer is in no position to do so without assuming that he behaves “as if” they are maximizing an objective function with complete information. This is a useful metaphor; however, this framework and its information requirements tell us little about how non-omniscient individuals, through the process of repeated interaction, discover and incorporate new information, or about “the institutions of *exchange*, broadly considered.” According to Nobel laureate Vernon Smith,

(T)he idea that agents need complete information is derived from introspective error: as theorists we need complete information to calculate the CE (competitive equilibrium). But this is not a theory of how information or its absence causes agent behavior to yield or not a CE. It is simply an unmotivated statement declaring, without evidence, that every agent is a constructivist in exactly the same sense as we are as theorists. And the claim that it is ‘as if’ agents had complete information, helps not a wit to understand the wellsprings of behavior (p. 475).”

The problem isn't merely that we don't know Rod's utility function or even that Rod doesn't know his own utility function. It may be a useful expositional tool to describe action—we can say that the substance of action is choosing a bundle of inputs at a given point in time to maximize an objective function or, as Mises and Rothbard write, to attain the highest possible “level of satisfaction”—however, the utility maximization framework tells us little about how information is revealed and how people update their expectations and preferences in light of new information about absolute satisfaction. In light of what we know about posterior knowledge, it is now apparent that questions like “do people really engage in maximizing behavior?” and “was situation X an optimal arrangement?” may not be useful economic statements.<sup>9</sup>

So what of the “institutions of *exchange*, broadly considered?” Economic theory has established that exchange will increase “social welfare” in that it brings about a state of the world that parties to the exchange prefer to the state of the world that obtained previously. The growing literature in the New Institutional Economics addresses precisely these issues by considering the institutional framework in which impersonal exchange is most likely to take place.<sup>10</sup> Brock (2002, p. 2) writes that “(t)he essential idea of the NIE is that the success of a market system is dependent upon the institutions that facilitate efficient private transactions,” and the NIE prescribes a research program

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<sup>9</sup> See Kennedy (1950) for an early discussion of indifference curve analysis and the consistency/transitivity assumptions.

<sup>10</sup> See, for example, North and Nye (2002), Furubotn & Richter (1998), North (1990, 2005), and McQuade (2000).

centered around the insight that institutions providing incentives for production rather than incentives for predation are fundamental to economic success. Quoting Brock (2002, p. 3) again,

Poor institutions create incentives for the parties to engage in redistributive activities, expending substantial resources in privately beneficial activity that transfers income from one party to another with no net increase in society's resources. ... Desirable institutions promote a long term path of productive activity rather than redistributive activity.

Succinctly, “good institutions” are those that encourage production and exchange; “bad institutions” are those that encourage expropriation and redistribution. The prescription of the NIE is to examine the institutional framework of a given city, county, state, or country and determine whether or not those institutions are “good” or “bad.”<sup>11</sup>

## V. Policy Implications: Knowledge and the Problem of Calculation

The policy implications are simple. If the actor himself cannot know if he has “maximized” his happiness relative to all possible states of the world which do not obtain, it is certainly clear that an outside coercive body cannot have this information. That is not all. To impede voluntary exchange is to move the relevant decisions *even farther* from a state of affairs in which opportunity costs are sufficiently assessed. Rothbard (1956 [1997]) argued that coercive intervention could not increase social utility<sup>12</sup> because one party demonstrably loses in utility *ex ante*. This conclusion is strengthened by the fact that a coercive intervener is in an even poorer position to assess the opportunity costs than the actors in question.

Coercive intervention interferes with the market's “discovery process.” Rosenberg (2000, p. 15) points out that socialist economies are “unworkable” because “they could never learn how to exploit technological innovations.” Their inability to exploit technological innovations—more precisely, their inability to innovate—is implied by Mises' (1920) thesis that rational economic calculation is impossible without market prices for factors of production (which can only exist if factors are privately owned). A non-market economy cannot even rely on *absolute* measures to guide future decision making because such information does not exist. It is possible to construct proxies for purely technical efficiency—a central planning board can measure changes in the number of tractors per worker, for example—but the absence of market prices precludes any discussion of economic efficiency.

Though *ex post* knowledge of absolute gains does not provide the actor with

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<sup>11</sup> This stands in contrast to conventional analysis, which approaches an economic problem by asking “how do markets fail in this particular set of circumstances?” The NIE pushes the question back a step by asking whether or not markets are allowed to work in the first place.

<sup>12</sup> Caplan (1999, 833-4, fn 20.) criticized this view of Rothbard's failing to go even further, and maintain that government intervention necessarily *reduces* welfare. Block (unpublished) defended Rothbard's view on the ground that Caplan's claim would commit the fallacy of interpersonally comparing utilities.

omniscience regarding all his options, it does provide a firm basis for a rational exploration of alternatives. Rod Stewart can experiment with Diet Pepsi, safe in the knowledge that he can return to Diet Coke if his *ex post* assessment of Diet Pepsi is negative. Similarly, an entrepreneur can develop a new product or production process and with *ex post* profit/loss calculation determine if he ought to invest more money in the new project or cut his losses and abandon it. In this step by step way, the free market discovery process is dynamic yet grounded in individual satisfaction.

Intervention severs the connection between expenditure and evaluation that exists on the unhampered market. Consider, for example, the case of the United States Postal Service and its competitors. A firm like UPS, Federal Express, or others that compete with USPS can directly evaluate its investment decisions through a) the direct impact on the bottom line and b) the indirect effect on the stock price, which represents the interplay of individual expectations regarding the firm's future profitability. In this sense, the market holds these firms accountable for their use of resources.<sup>13</sup>

This stands in direct contrast to the operations of the USPS and other state-owned enterprises. Such entities do not have profit-and-loss statements that allow them to evaluate their activities in a rational<sup>14</sup> way. The introduction of coercion—in this case, the extraction of resources from taxpayers—prevents consumer preference from manifesting itself in the form of profit/loss or stock prices. This lack of substantive *ex post* evaluation results in what we have become used to seeing in state owned enterprises: a vacillation between new projects that don't meet consumer needs and stagnation from lack of innovation.

## VI. Conclusions

We have argued that economic actors cannot know as a matter of praxeology whether or not they chose the course of action that made them happiest; i.e., that attained the highest possible position on their value scales. However, they can certainly know that something made them happy, which is information that a coercive body cannot have at all. This is, of course, most important because it shapes the way people will react to different information sets.

To summarize: you can never know *ex post* whether or not you have gained by a human action, relative to other options. We can't know how other options would have turned out. There is thus an uncertainty *ex post* that does not apply *ex ante*.

Is the human actor glad he made the exchange? This can be broken down into two subsequent questions.: 1. Is he glad he made the exchange as opposed to not making

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<sup>13</sup> There is a growing literature on corporate governance that attempts to assess exactly how well market mechanisms—the takeover market, shareholder action, et cetera—work. See Bebchuk et al (2002) for a discussion of the “managerial power approach” to firm governance and Tirole (1997) for a summary of more conventional theories. Miller (1992) offers a tractable summary of the problems of internal hierarchy. Finally, Rothbard (1962) integrates the discussion of firm size into the economic calculation debate.

<sup>14</sup> We use the definition of “rational” found in Mises (1920 [1990]).

the exchange? 2. Is he glad he made the exchange as opposed to other exchanges? The first, the “weak” question, can be answered. The second, the “strong” one, cannot.

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