

Gary Becker and the Quest for the Theory of Everything

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Musicals often treat their audiences to songs in which a character declares the quest they are about to undertake, from *Les Miserables*' Javert singing "Stars", declaring his relentless pursuit of Jean Valjean to *The Man of La Mancha*'s title character pledging his determination to dream "The Impossible Dream". Real life protagonists rarely offer their audiences such explicit declarations of life-shaping quests. One rare exception to this principle, however, comes from Nobel prize-winning University of Chicago economist Gary Becker, arguably the most influential economist of the twentieth century on disciplines outside economics. Not only has Becker pursued a strongly coherent research agenda from the late 1970's onward, but the 1977 essay *De Gustibus Non Est Disputandum* (co-authored by George Stigler and Gary Becker) crystallizes and focuses Becker's subsequent research agenda.

A well-defined quest is a rarity on its own, but the scope of the quest increases the scale of the drama; a quest to kill a fly in the kitchen has far less appeal than a quest for the Holy Grail. Becker's quest is remarkable not only for his steady pursuit, but also for the scope of his goal. If economics explains decisions given supply and demand, and if *De Gustibus* claims that economics should ultimately be able to completely explain demand, then this completed economics should produce a general theory that can explain (and predict!) the totality of human behavior given the resources and technology available. *De Gustibus* sets forth Becker's intent to pursue this Holy Grail of social science: a Theory of Everything.

George Stigler and Gary Becker's 1977 essay *De Gustibus Non Est Disputandum* began with a Latin pun; this paper could have begun in the same fashion. In the spirit of Becker and Stigler, this paper could have been titled "*De Gustibus Non Est Refutandum*."¹

This alternative title phrase could mean that "*De Gustibus* has not been refuted" (i.e., by Becker), or that "*De Gustibus* cannot be refuted." The first would indicate that the

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¹It bears noting, however, that the structure of the two puns is not the same. The *De Gustibus* pun is based on two interpretations on the same idiomatic construction (use of the passive verb to denote habituality, with the two motives for the habituality of non-dispute being either general agreement or the futility of argument). The pun in the title of this paper is based on the different meanings resulting from an idiomatic interpretation (passive verb to denote habituality) and a literal one (passive verb to denote that the subject of the sentence is the object of the verb).

position established in *De Gustibus* is consistent with Becker's subsequent work; the second would suggest that the position held in *De Gustibus* is not subject to logical refutation, either empirical or otherwise.

The second position, by admission of the authors, is true (Stigler and Becker 1995, p. 185). "It [*De Gustibus*] is a thesis that does not permit of direct proof because it is an assertion about the world, not a proposition in logic." Furthermore, the authors suggest that the demonstration of counterexamples to their thesis does not show its falsity, but the fact that it is not **yet** proved. Thus, the second interpretation of this paper's title is true by the admission of the authors. It is the first interpretation, however, that this paper shall treat.

While some argue that later in his career, Becker strays from the position in *De Gustibus* (England and Budig, 1998, p. 97), I argue that *De Gustibus* is a sort of Chicago Manifesto that actually sets the agenda for the remainder of Becker's research and publication. Becker's earlier work might incorporate some aspects of the *De Gustibus* position, but I argue that following the publication of *De Gustibus*, Becker's research program changes in such a way as to explicitly address the "assertion about the world" *De Gustibus* leaves unsettled. Becker's subsequent work tends to converge toward the research agenda laid out in this paper.

Stigler and Becker's thesis centers on the following: the truism "there's no arguing about tastes" derives its power not because tastes are inexplicable, and thus not worth argument, but rather because tastes are basically the same for all people.

The inexplicable tastes position presumes a limited role for economic study as in Herman Daly's famous ends-means spectrum (Daly, 1996, p. 20). Here, economics takes tastes (and in Daly's model, technology) an inexplicable given, and focuses on how to maximize utility (given by tastes) subject to production possibilities constraints (given by technology). As Stigler and Becker describe it in *De Gustibus*,

"On the traditional view, an explanation of economic phenomenon that reaches a difference in tastes between people or times is the terminus of the argument: the problem is abandoned *at this point* to whoever studies and explains tastes (psychologists? anthropologists? phrenologists? sociobiologists?)." (Stigler and Becker 1995, p. 185)

The position of *De Gustibus*, however, claims that "prices or income" will be the source of differences or changes in behavior. The authors were not unaware of the scope of their claim. They unapologetically asserted "we are proposing the hypothesis that widespread and/or persistent human behavior can be explained by a generalized calculus of utility-maximizing behavior, without introducing the qualification 'tastes remaining the same.' "

Becker as economist doing basic research

From the perspective of an economist, the bulk of Gary Becker's work is classified as normal science. Using a model based on Thomas Kuhn's *The Structure of Scientific Revolutions* (1969), normal science can be considered research that verifies and extends an existing

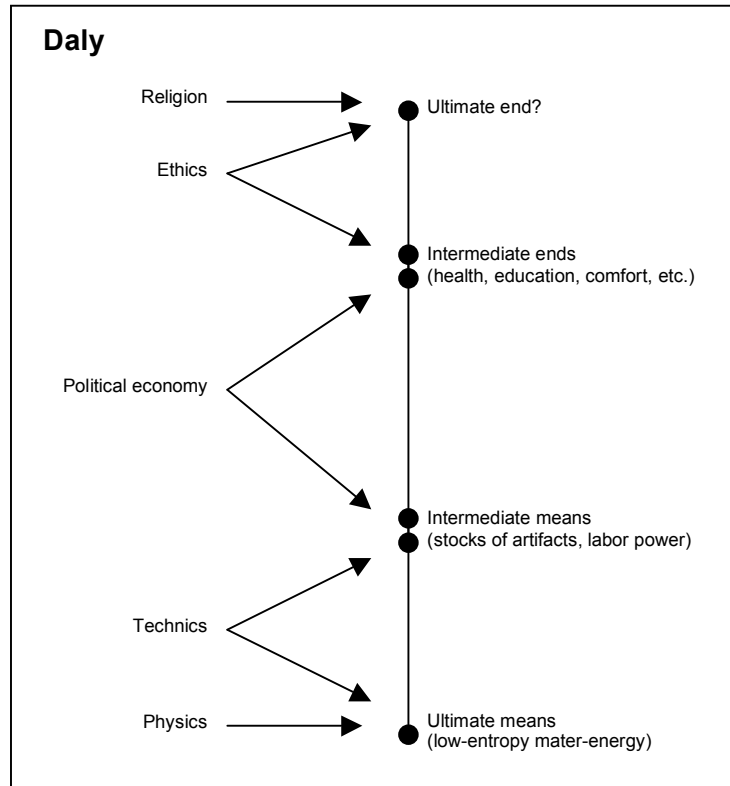


Figure 1: Daly's ends-means spectrum (redrawn from Daly 1996)

paradigm. (Heilbroner 1973; Knutter 1987). Scientific revolution is the establishment of an alternative paradigm in place of one that fails to explain data. Normal science demonstrates that a paradigm applies to more and more situations. Normal science consists primarily of formulating how a paradigm would be expressed in a particular context (hypothesizing), followed by some form of empirical testing of this hypothesis.

The structure of most of Becker's books follows this model precisely. He begins from the paradigmatic starting points of analysis offered by the theory of rational individual utility maximization. He then proceeds to form equations that extend this model to a phenomenon previously unexplained by the model. The last section then consists of econometric testing of the hypotheses expressed in these equations, showing how his extension of the basic model is not disproved by the tests he performs.

For the most part, Becker's work is an anomaly in just how much attention it has gathered for normal science research. Many social scientists consider normal science to be particularly unrewarding (Rogowski 1999, p. 165), and prefer instead to develop new theories. In a very real sense, Becker develops little new theory. Instead, he extends existing theory to new phenomena. Becker's theory of the household, or theory of addiction, or theory of suicide, or theory of discrimination is not a new theory; it is Chicago-style economic theory applied to a new subject.

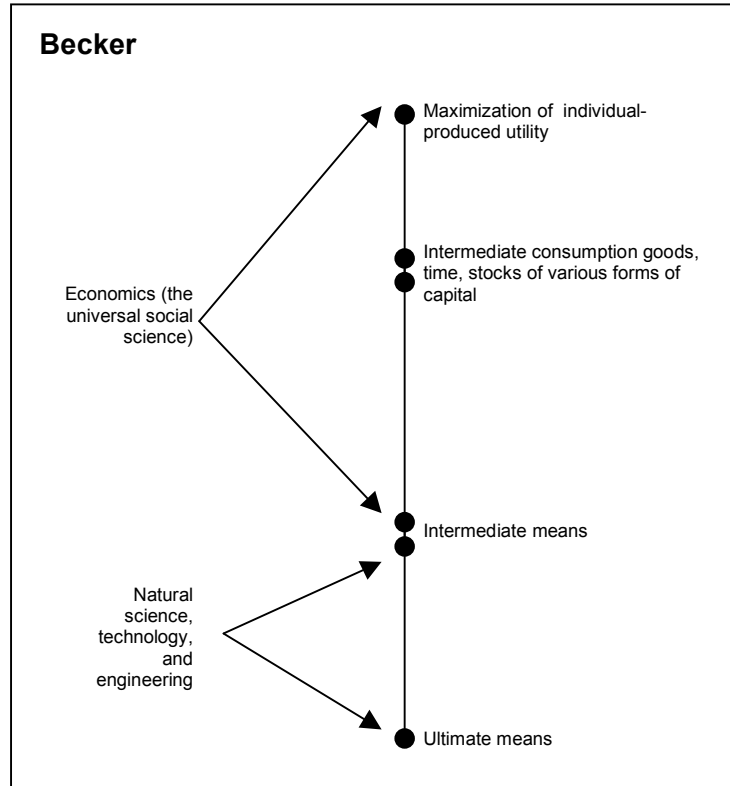


Figure 2: The ends-means spectrum reflected by Becker's work

Becker's theory of time and consumption does establish new theory, in that it proposes an alternate model to the then-accepted economic model of consumption (Becker proposes consumption be treated as a form of production). In this regard, Becker breaks the ground for new theory.

Becker's best known work, however, falls squarely into the category of normal science: extending an existing theoretical model (individual utility maximization constrained by budget level and current capital stocks) to cover additional experiences. It is new theory from the perspective of the subject matter (i.e. Chicago economic theory had not previously been applied to suicide), but not from the perspective of the theory.

If the theory of evolution was shown to explain the nesting habits of house finch, it might be called a new theory of the house finch nesting, but it would not truly be a new theory; it would be an application of an existing theory. Similarly, Becker's theory of the household is not a new theory as much as it is the Chicago Theory of Constrained Utility Maximization applied to the household. The theories might seem new to the extent that a student of the phenomenon had not encountered them previously (e.g. someone studying suicide may not have previously encountered utility maximization, and thus, to that person, Becker's theory might seem novel), but that does not make them departures from an already established theory.

The question of perspective in understanding Becker's work is important. Becker is a member of both the Sociology and Economics departments at the University of Chicago. While Becker is generally regarded as an economist, this classification is not obvious. In earlier Becker works, notably *The Economic Approach to Human Behavior*, Becker claims that economics should be defined methodologically, and not by its object of study (Becker 1995, p. 5).

Becker's terminology of "economic analysis" refers to the Chicago-style reasoning from neoclassical first principles of utility-maximizing individuals (Becker 1995, p. 4). Because this paper is about the economic analysis of Gary Becker, it will use the term economic analysis to mean that which Gary Becker uses the term to mean. The use of this term is not to suggest that this author believes that this is the sum total of valid economic methodology, nor is it even intended to suggest that this constitutes preferable economic methodology.

Without defining economics as a methodology, as Becker does, and not as a subject matter capable of being studied via many methodologies (i.e. experimental economics, participant observation, etc.), most of Becker's work falls only obliquely into the category of "economics" as defined by subject matter. Thus, for the sake of brevity, within this paper, the phrase "economic analysis," unless otherwise qualified, shall be constructed so as to assume (apparently along with the Nobel committee) that what Becker does is, for some definition, economic analysis.

In his Nobel address, Becker himself says that what he calls economic analysis could also be called "rational choice theory" (Becker 1995[2], p. 650). He claims that it is distinct from other forms of analysis in that it assumes people are rational (Becker claims that he "credit[s] people with enough rationality" (Becker 1995[2], p. 650), as though rationality were a good thing), and does not presuppose selfishness, altruism, or any other motivation. In an interesting semantic twist, the one named form of analysis with which Becker contrasts his own economic or rational choice analysis is Marxian analysis (Becker 1995[2], p. 633), claiming that his analysis is "economic," while Marxian analysis is something else. On the other hand, he refers to others with a different analytical method as economists even though their analysis, like the Marxians, requires people to behave selfishly.

Becker's revolution

Given that so much of Becker's work is normal research, *De Gustibus* is different (or more properly, the first section of *De Gustibus* is different). The first section of *De Gustibus* is one of the few departures of Becker from the agenda of normal research. In *De Gustibus*, Becker proposes a modification to the paradigm rather than an extension thereof.

Continuing to treat the *De Gustibus* thesis as being of two parts, the first part simply asserts that normal research can continue to extend *the* Theory of Utility Maximization to explain all varieties of human behavior. The second part of the *De Gustibus* thesis, however, is a modification to this theory, saying that it should work without resorting to assuming different tastes. It is for this reason that *De Gustibus* becomes one of the rare departures of Gary Becker from his agenda of advancing normal research on the generalized Chicago theory

of utility maximization as explanatory of human behavior, and sets him on the course of doing normal science to support his strengthened theory of utility maximization, a stronger theory in the sense that it is harder to prove, but if eventually proved, makes a stronger claim.

Becker is often held up as the poster-child for economic imperialism (Rogowski 1999, p. 158). This economic “imperialism” is the direct result of the *De Gustibus* position. In throwing out the ends-means spectrum and asserting that economics, done properly, should be able to explain all human behavior upwards of technology on the ends-means spectrum (see Figure 2 on page 4), Stigler and Becker essentially assert that what they call economics is, in effect, *the* social science, the science by which human behavior can be understood. *De Gustibus* concludes that Economists should not wait for its “sister behavioral sciences” (Stigler and Becker 1995, p. 204) to explain perplexing human behavior. Nothing else in *De Gustibus*, however, suggests that Stigler and Becker consider the fields on which they assert that they must intrude to be truly “sister disciplines,” and certainly not sister **sciences**. Rather, the position in *De Gustibus* is that Chicago economics has the potential to be the basis of a universal social science.

Similarly, Becker has expressed that previous economists have been too limited in the subject matter of their study because of constraints of morality. Becker argues against “the influences of moral attitudes on a scientific analysis,” (Becker 1974, p. 3). Becker regularly refers to such limitations of economic analysis as “neglect,” suggesting his belief that economic analysis properly belongs and indeed ought to be pursued without regard to territory claimed by ethics and morality.

Following these broad claims, however, Stigler and Becker recognize that there are indeed many phenomena that currently evade explanation from first principles of utility maximization with given budgets and capital endowments.

“What we assert is not that we are clever enough to make illuminating applications of utility-maximizing theory to all important phenomenon not even our entire generation of economists is clever enough do that. Rather, we to assert, that this traditional approach of the economist offers guidance in tackling these problems and that no other approach of remotely comparable power and generality is available.” (Stigler and Becker 1995, p. 185)

Figures 1 and 2 in this paper illustrate the differences in approach between some traditional models of the role of economics and the model proposed in *De Gustibus*. Herman Daly, while not a traditional economist in many regards, clearly illustrates the limited role of economics that Stigler and Becker claim was traditional at the time of their essay. In Daly’s model, economics acts as a bridge between given technologies on one end (intermediate means) and given desires for intermediate ends (tastes, in the Chicago model). The role of economics is limited precisely to determining efficient ways to move from the scarce intermediate means to the specified priorities for intermediate ends.

In asserting the power of economics to explain tastes and the fundamental sameness of human desires before conditioned by current capital stocks, resource flows, and prices, Stigler

and Becker extend the claim of economics' rightful place from the middle of the spectrum all the way up to the top thereof. It is precisely the twin claims of *De Gustibus* that extend the claim of economics on Daly's ends-means spectrum.

While other economic theories have claimed that economics determines various forms of technology (Marx, 1954; Marglin, 1974), *De Gustibus* makes no claims on the lower portions of the spectrum. It is content to claim for its purview the entire upper portion of the ends-means spectrum as its purview (see Figures 1 and 2).

The remainder of *De Gustibus* consists of a Becker and Stigler *tour de force* demonstrating their present "cleverness" to illustrate that a wide range of behavior conventionally considered beyond the pale of economics can, in fact, be explained from first neoclassical principles. The middle sections of *De Gustibus* will be treated with the corpus of Becker's post *De Gustibus* work, as the middle sections of the essay and the rest of his career all serve the purpose of illustrating the *De Gustibus* thesis.

The quest itself

The challenge of *De Gustibus* is essentially this: explain any conceivable human behavior through the paradigm of individuals maximizing utility constrained by income and present capital stocks without requiring that different individuals have different tastes. This requires that any theory must explain different behavior without saying that two different people have different tastes, or that a person's tastes are different at different times.

Stigler and Becker model these fundamentally stable tastes as a utility function that does not change over time (Stigler and Becker 1995, p. 187). By extension, the *De Gustibus* condition is met across individuals only by a utility function that does not change from individual to individual. Different utility functions among people indicate differing tastes, just as changing utility functions over time indicate changing tastes. If tastes are fundamentally the same, as *De Gustibus* asserts, the mathematical equivalent of this is asserting that there is **one** utility function for all people at all times. Everybody has the same tastes (Stigler and Becker 1995, p. 185).

The *De Gustibus* research agenda is two-fold. On one level, it asserts that economic analysis, as defined by the Chicago school, offers insights in social science beyond the study of traditionally economic phenomenon. This aspect of *De Gustibus* cannot be considered new to Becker. Rather, it reflects the work in which he had been engaged since his doctoral thesis on discrimination. In this regard, *De Gustibus* cannot be defined as a turning point in Becker's career. The extension of the subject matter under consideration using economic analysis did not begin for Becker with *De Gustibus*. Becker's earliest work on discrimination and addiction predate *De Gustibus*. In his introduction to *The Economics of Discrimination*, Becker claims that with regard to discrimination,

"other social scientists, by their early entrance into this field may have established it as their property; the economist here, as elsewhere, has respected the property rights of others." (Becker 1957, p. 2)

Property rights of other disciplines notwithstanding, Becker “attempted to remedy this neglect” of an economic theory of discrimination. Becker, from his earliest research, aimed to expand the subject matter of economic analysis.

The second part of the *De Gustibus* research agenda, however, did mark a transition for Becker. The *De Gustibus* assertion of the one utility function constituted a sort of asymptote toward which Becker gravitated through his subsequent research.

The one-utility-function model is not present in some of Becker’s early work. Becker’s earliest work is a far cry from the standard later set in *De Gustibus*. Becker’s book *The Economics of Discrimination*, based on his doctoral thesis at Chicago, meets the first part of the *De Gustibus* premise, but violates the second because it starts from the assumption of differing tastes among individuals.

Becker defines the predilection for discrimination (or prejudice, in Becker’s terms) explicitly in terms of differing tastes, and actual discrimination as incurring pecuniary costs to act on these tastes (Becker 1957, p. 6). Prejudice, then, refers to the case where an individual’s utility function is such that the individual derives disutility from associating with certain groups of people. Prejudice becomes measurable as discrimination when that individual pays money or foregoes income in order to associate and not associate with the people of his or her choice.

This model is, in some ways, a breakthrough for Chicago economists. It brings discrimination, a phenomenon heretofore outside the realm of economic analysis, under examination by economists. It provides an externally measurable way to reveal preferences for discrimination (through Becker’s favorite concept, shadow prices). It explains much in terms of measuring the extent and effect of discrimination.

It also thoroughly fails the *De Gustibus* test, because it rests entirely on differing utility functions. In other words, it extends economics into the study of the effects of discrimination, but **not** into the causes thereof. Some people are presumed to have prejudices to different degrees than others. As Becker himself says, “The magnitude of a taste for discrimination differs from person to person” (Becker 1957, p. 8) and while he goes on to show how some of the causes of discrimination may result from the differences between expected and actual variables, he concludes with the caveat that he later expressly forbids: “Finally, tastes may differ simply because of differences in personality.” (Becker 1957, p. 9).

Becker certainly did not rely on differing utility functions to explain behavior in all his pre-*De Gustibus* work. His groundbreaking “A Theory of the Allocation of Time” (Becker 1998), published in 1965, did not rely on utility functions changing over time or over individuals. On the other hand, in this model, he never compares individuals or times (remarkable for a theory of time!). In other words, the model itself is static, and the comparisons are for a given individual at a given time if various variables were changed. Because the entire paper is an exercise in comparative statics, it does not examine assumptions about changing utility functions across time or individuals.

The fact that differing utility functions are not evoked here, however, does not make this a meaningless case. Instead, this illustrates that explicitly explaining differing behavior across individuals and time was not as high a priority on Becker’s agenda as in subsequent (post *De*

Gustibus) analysis. While comparative statics is often evoked to explain behavior differences with the *ceterus parabus* condition, Becker's earlier work does not make any special claims about the conditions under which this may or may not be done, in contrast with the focus of his later work.

Thus, Becker did not subscribe to the *De Gustibus* model from the beginning of his career. It was a position into which he grew. Given his career-long objective to increase the scope of the appropriate subject matter for economics, the assertion that economics should be able to explain all human behavior without having to resort to changes in tastes fundamentally altered the claims of economic analysis from being very narrow within an ends-means spectrum to covering everything on the ends side of technology. The question remains, however, whether Becker has held to the *De Gustibus* position throughout his career. Some analysts seem to claim that he has diverged from the position that economists do not need to rely on the argument that tastes could change across individuals or time in order to explain human behavior. Thus, the clear counterexample needed would be to demonstrate a post-*De Gustibus* position taken by Becker that relies on changing exogenous tastes either across time or across individuals to explain differing behavior. While I do not claim that none exists, I do claim that I have found no such counterexample, and that the critics I address also have not found a counterexample.

England and Budig raise the argument that Becker appears to depart from the *De Gustibus* position on the grounds that the title of *De Gustibus* can be translated "There's no accounting for taste," and Becker titled his 1996 collection of essays *Accounting for Tastes*. The titles are contradictory, ergo, the position has changed (England and Budig 1998, p. 97).

This argument is true superficially, but false in any more meaningful sense. In the first case, Stigler and Becker do not translate the phrase "*De Gustibus Non Est Disputandum*" to mean "there's no accounting for tastes", but rather, "there's no arguing about tastes," with the follow-up conclusion that there exists no arguing about tastes because there is no need to argue about tastes; rather, tastes can be explained by economic analysis from a utility function that changes neither over time nor over individuals. While England and Budig do admit their translation is a rough one (England and Budig 1998, p. 97), it is not merely rough, but completely contrary to the spirit of *De Gustibus*. It follows, then, that if one message of *De Gustibus* is "don't argue over tastes; we can explain them," then a follow-up collection of essays doing just that is not a repudiation of the position. To argue the contrary misses the intended meaning *De Gustibus*.

A second reason to reject this superficial argument out of hand is the fact the *De Gustibus* is **included** as one of the chapters of *Accounting for Tastes*. Becker himself admits that he has subsequently found some of the analysis from the middle of *De Gustibus* to be overly simplistic (Becker 1996, p. vii), and has revised the method with which he approaches addiction, and thus in this sense does repudiate some of the middle matter of *De Gustibus*, he is explicit in affirming the basic thesis of *De Gustibus* even as he updates the methods by which he defends it (Becker 1996, p. 6). Becker does back away from some of the implementation in *De Gustibus*, but he remains dedicated to the central proposition.

England and Budig then go on to raise a more serious critique of Becker's claim to unchanging tastes over time (while recognizing that he does leave intact the *De Gustibus* axiom that different tastes among individuals are not an acceptable basis for explaining differing human behavior). In this second critique, England and Budig assert that Becker does not really leave tastes constant over time, because he believes that preferences do indeed change over time in response to addiction, social circumstances, etc. Thus, they claim, Becker abandons his position from *De Gustibus* in favor of a changing-tastes position.

This critique is stronger but still fails to capture the essence of Becker's analysis. On one level, their position is clearly true. People's behavior reflects that they do prefer different goods, occupations, relationships, and forms of entertainment under differing circumstances. To the extent that any preference a person expresses can be considered tastes, their criticism is valid.

Unfortunately, it fails to reflect some basic premises of economics. Tastes are generally used by economists to refer to preferences expressed by people that fall outside economic models. "Tastes" is a code word for the endogenous. Thus, while the casual observer might say that a person had different tastes with a large income than the same person had a small one because when the person's income rose, the person might have rented fewer videos and attended the theater more often than before. Modern neoclassical economists, however, would generally agree that this is an example of how an income effect results in substitution of a luxury good for an inferior good (Varian 1992, p. 117).

Similarly, one could argue that a person's tastes changed because they used to buy one brand of toothpaste and now they buy another. If these "shifting tastes" were based on the fact that their former brand of choice tripled in price and the consumer was now buying a less expensive substitute good, most economists would call this the market at work, and not changing tastes. In both of these examples, the distinction is that the so-called tastes are explained by economic models.

The notion of "endogenous taste theory" is to some extent an oxymoron. Tastes, for Becker, represent mysterious and inexplicable forces of human motivation that fall outside economic models. To reduce Stigler and Becker's argument to a statement that revealed preferences never change is an absurdity; what they argue is that one need not appeal to inexplicable exogenous tastes to explain changes in preferences, but rather, changes in revealed preferences can be explained endogenously by utility maximization subject to constraints within economic models. England and Budig themselves refer to tastes as being that which is exogenous to the economic model (England and Budig 1998, p. 96). The preferences that Becker allows to change, both over time and across individuals, are those **explained by the model**, with no logical recourse to inexplicable shifts of exogenous tastes. Perhaps the *De Gustibus* thesis would be clearer if instead of claiming that tastes were the same for all people, they claimed that any changes in tastes could be made endogenous to the economic model with sufficient cleverness, but that would not have the same rhetorical ring to it.

To illustrate Becker's adherence to the *De Gustibus* model, a survey of his later work (and work within *De Gustibus*) can illustrate how he goes about endogenizing "tastes" to the economic model. This paper will thus proceed to examine *Treatise on the Family*, then return

to *De Gustibus* to examine the middle sections, and subsequently continue to sample from Becker's treatment of addiction and crime and punishment. Finally, this paper will conclude with some remarks about the implications of *De Gustibus*, the relationship between Becker and individualism, and economic imperialism.

A Treatise on the Family exemplifies how Becker's research moves toward the *De Gustibus* model. *Treatise* considers a subject considered to be profoundly outside the realm of economics using economic modeling starting from the Chicago assumptions of individuals maximizing utility.

Treatise is in some ways a departure from the *De Gustibus* model, in that it posits different utility functions for different individuals. In exploring selfishness and altruism within the family, and supposing that some members of the family might have utility functions that differ substantively from those of the head of the household, the argument could be made for a basic incompatibility between *Treatise* and *De Gustibus* on the grounds that the Rotten Kid Theorem invokes verboten multiple utility functions. I would argue, however, that this is a mischaracterization.

Treatise is in the spirit of *De Gustibus* despite the fact that the *De Gustibus* premise is that human behavior can be explained without resorting to the argument that different people have different utility functions. The different utility functions in *Treatise*, however, are not introduced to explain divergent human behavior, as *De Gustibus* prohibits. Rather, *Treatise* gives a rationale for **convergent** human behavior despite potentially different utility functions among dependents. In other words, *Treatise* claims that individuals will behave **as if** they had the same utility functions **even if their utility functions diverge in qualitative ways** so long as the heads of their households have convergent utility functions. Rather than being a relaxation of the standards of *De Gustibus*, *Treatise* provides a partial justification for the one-utility-function assumption as applied to minors and dependants. Becker here covers his ground such that even if people are not born with the standard one-utility-function and it takes time for them to mature into it, they will behave as if they had it provided the head of their household possesses the "standard" utility function. Thus, this apparent divergence from the *De Gustibus* thesis turns out to be an attempt to reinforce the standard. Human behavior can be explained through rational choice theory without recourse to inexplicably different tastes among individuals or over time.

Addictive behavior is often cited as a counterexample both to constant tastes and to rational choice. Even models that assume rationality often account for addictive behavior and other behaviors where past consumption changes the utility derived from current consumption by relying on shifts in the utility function. Stigler and Becker cite early neoclassicist Alfred Marshall's example of good music creating stronger tastes for more good music as an example of a utility-shifting model (Marshall 1923, p. 94; Stigler and Becker 1995, p. 187).

In *De Gustibus*, however, our heroes again create a model by which the underlying utility function does not change over time. This model, needless to say, also preserves rational choice for addicts. Addiction, in this model, can be either beneficial, as in the case of Marshall's good music, or harmful, as in the case of heroin.

In this model, music would not be used to directly produce utility, but rather, music

appreciation would be used in the utility function. Music appreciation would be a function of both time devoted to music and human capital that contributed to music appreciation. For beneficial addictions, the partial derivative of this human capital stock with respect to past music appreciation would be positive (past music consumption would increase utility from present music consumption) (Stigler and Becker 1995, p. 189).

By contrast, for harmful addictions, the partial derivative of human capital that aids in production of utility from consumption of the addictive good with respect to past consumption is negative. In this model, given rational choice, either addicts are misinformed about future consequences, or they are, in fact, better off consuming the addictive goods than they would be otherwise. This issue is given little treatment in *De Gustibus* (Stigler and Becker 1995, p. 191).

Becker subsequently revisits the issue of addiction. In “A Theory of Rational Addiction” (Becker 1996 p. 67), Becker grapples with the issue of under what circumstances a rational person would become addicted to an addictive good. Even here, Becker still holds the claim that those who choose to become addicted to a good would have even lower discounted future utility if they were prevented from becoming addicted. Rationality is one assumption that is never relaxed throughout Becker.

Life events, however, also contribute to initial stocks of addiction capital. Thus, various stressful events might give different individuals with the same utility function differing stocks of addiction capital. Accordingly, two individuals who had never previously smoked cigarettes could have unequal levels of addiction capital, leading one to have a higher marginal utility of smoking than the other, and causing the one to become addicted to cigarettes and the other to never smoke. The addiction capital model was thus extended so that addiction capital does not depend **only** on prior consumption of the addictive good.

In another extension that makes the act of becoming addicted more rational, Becker proposes a model in which the rate at which future utility is discounted is not fixed, but is a function of various economic phenomenon. An unanticipated upward shock to the discount rate would strengthen all habits, possibly causing some to cross the threshold to addiction level.

In empirical testing involving cigarette smoking behavior, Becker, Grossman, and Murphy compare this rational choice framework for addiction with a myopic model in which consumers do not look at discounted expected future utility in making decisions about consumption of addictive goods (Becker, Grossman, and Murphy 1990, p. 13). While empirical testing did not yield conclusive results consistent with the completely rational optimization model, it did allow the authors to conclusively reject the myopic model (Becker, Grossman, and Murphy 1990, p. 21).

Becker notes that the use of addiction capital is more than a semantic device to preserve an unchanging utility function. Citing other models of shifting utility functions, Becker claims that many changing utility function models call for the person in one utility function state to actively plot against themselves in the other state. For example, the non-addicted self might join Alcoholics Anonymous to try to keep the self with the altered utility function from regaining control. In contrast, Becker claims, the addiction capital model provides a

consistent utility maximization plan across time (Becker 1995, p. 67-68).

Taking up another case from *De Gustibus*, advertising has also long been held to be intended to change tastes. From John Kenneth Galbraith (1958, pp. 155-156; Stigler and Becker 1995, p. 195) to Dixit and Norman (Becker 1996, p. 206), economists have argued that advertising can be divided into informative and persuasive advertising. Persuasive advertising has been treated by many economists as yielding shifts in consumers' tastes.

In *De Gustibus*, Stigler and Becker begin to set up an alternative model, although they fail to develop the model in any meaningful way, making this the least satisfactory section of the essay. In this model, all advertising (including so-called persuasive advertising) is treated as information about a product (Stigler and Becker 1999, p. 195). They then go on to say that the knowledge a consumer gains from an advertisement can be either "real" knowledge or "fancied" knowledge. In this model, consumers need information about a good in addition to the good itself in order to produce utility. Stigler and Becker then go on to suppose that when A is advertising and z is consumption of a product,

$$\frac{\partial z}{\partial A} > 0 \quad (1)$$

(i.e. advertising gets consumers to buy more of the good advertised. All advertising is thus treated as providing more information about the product.

The remainder of Stigler and Becker's analysis of advertising is devoted to arriving at how firms determine the optimal level of advertising. No further discussion of the nature of utility function appears in *De Gustibus*, until they conclude the section by saying that this theory could be extended.

The so-called "fancied information" and consumer's expectations regarding it, particularly after encountering advertised goods that fail to deliver the utility promised in the advertisements seems to be critically underdeveloped. It is telling that this section of *De Gustibus* does not include any equations that involve the consumer's utility function. The section does seem to indicate that a possible framework exists that could treat advertising as something other than a taste shifter, which does go a long way toward advancing the *De Gustibus* thesis, as advertising could well be a sticking point on the issue of changing tastes, but the essay seemed interested in little beyond illustrating that advertising could be treated differently.

In 1993, however, Becker revisited this theme and developed a more extensive theory of advertising. Advertisements are still not treated as shifting tastes, true to the *De Gustibus* premise, but are given more suitable treatment.

In this model, Becker classifies advertisements as a complementary good to the product they advertise. Complementary goods increase the utility a consumer receives from consuming the complement, such that

$$\frac{\partial \frac{\partial U}{\partial x}}{\partial A} > 0 \quad (2)$$

(if this cross derivative were not positive, firms would not engage in the advertisement).

In this model, exposure to advertising may either lower or raise utility (i.e. $\frac{\partial U}{\partial A}$ is of indeterminate sign). If $\frac{\partial U}{\partial A}$ is positive, consumers would be willing to pay to receive the advertisement (as in the case of sports sections of newspapers, which advertise for sporting events), while if it is negative, the consumer would have to be compensated somehow for consuming the advertising (thus, the existence of television shows between the advertisements). Because $\frac{\partial \frac{\partial U}{\partial x}}{\partial A}$ determines the effectiveness of the advertisement, and $\frac{\partial U}{\partial A}$ determines its effect on utility, advertising may increase consumption of a good even though it lowers consumers' utility, leaving room for negative effects of the "fancied knowledge" of the *De Gustibus* model while at the same time showing positive utility from genuinely informative advertising.

Through this model, Becker is able to make up for one of the chief deficiencies of the illustrations within *De Gustibus*, while at the same time, continuing to develop its thesis. Through a sophisticated complementary goods model, advertisements can be treated as changing tastes no more than cookies change tastes for milk or cream cheese changes tastes for bagels. Complementarity has a solid foundation within consumer theory (Becker 1996, p. 206). Becker extends the concept to advertising to include it in the *De Gustibus* framework.

Habits and traditions constitute yet another claimed exception from the economic program of utility maximization. In *De Gustibus*, Stigler and Becker claim that these, too, can better be explained within the context of rational utility maximization. Stigler and Becker cite John Stuart Mill to illustrate the claim that individuals acting on habit fail to maximize self interest.

Again, Stigler and Becker claim that human behavior is consistent with the premise of utility maximization. They introduce two mechanisms that explain, within the economic context, why habitual behavior would persist despite changing current prices.

The first mechanism assumes information gathering costs. In this model, individuals may determine that it is more economical to search for current prices less frequently, because the gain from always using the most up-to-date prices is offset by the cost of obtaining these prices. Some optimum search strategy will minimize costs (Stigler and Becker 1995, p. 193).

This mechanism can generalize into the second mechanism. Here, the information seen above can be considered a form of knowledge capital that degrades over time, although with a non-infinite depreciation rate. Habitual behavior can be explained by the use of this stock of knowledge capital. Further, other traditional behaviors can also be explained through the concept of capital. Various forms of human capital are invested in the persistence of certain behavior (e.g. certain professions). When market conditions change, a certain way of life may persist because the costs of disinvesting in the human and social capital associated with the old way of life and the costs of investing in the human and social capital necessary for the new way of life outweigh the benefits of making the switch. This model especially accounts for why the old, with fewer years to benefit from making changes might be more likely to adhere to traditional lifestyles than the young, who can reap the benefits and spread the costs over more years (Stigler and Becker 1995, p. 194).

The authors note that this capital accumulation model where behavior is altered among like-minded individuals (i.e. individuals with the same utility function) because of differing

stocks of various forms of capital) is the same argument employed in their previous reasoning about addiction. (Stigler and Becker 1995, p. 194). The same mechanism accounts for apparent changes in the utility function: capital stocks condition behavior.

As is becoming the theme song here, Becker later in his career returned to this theme as well to continue the *De Gustibus* research agenda. In *Accounting for Tastes*, Becker groups the concepts of habits, traditions, and addictions into a single heading. In all these cases, past consumption builds up capital that affects behavior. Addiction is the special case where the effects of past consumption are so strong as to be destabilizing.

Tastes undisputed

De Gustibus marked a turning point of sorts for Gary Becker's career. Textual evidence shows that Becker did not necessarily follow the one-utility-function restriction prior to *De Gustibus*, and following *De Gustibus*, he used models that reflected steady utility functions through time. When Becker used multiple utility functions across individuals in his post-*De Gustibus* writings, the tendency was to show the effective convergence behavior despite utility functions rather than to explain differences in behavior in terms of differing utility functions.

The *De Gustibus* thesis does not really posit that individual tastes do not exist, or that all people are the same. What it does posit is that if differences in taste do exist, whether across time or across individuals, they do not matter. Economic analysis can generate empirically verifiable theories explaining human behavior that do not depend on individuality that has its genesis outside the economic model. As much as it might appear to be a statement about humankind, *De Gustibus* was really a statement about the power of economics. With tastes exogenous to the economic model, economic analysis is confined to the narrow band of the means-ends spectrum depicted by Daly. When tastes themselves become endogenous, however, economists no longer need to call their statements about tastes "assumptions," but can treat them as a part of their analysis. The realm of the economist, per Becker's ambition, thus grows larger.

If a complete and deterministic model of human behavior really did exist, however, any sense of individualism really would become trivial. If individuals behave rationally (i.e. according to a given set of logical rules) within the economic realm, and the economic realm includes all behavior, then economics runs into the same problem religion has at various points: what room does this leave for individual free will?

In many ways, this is the paradox of the *De Gustibus* model. On one level it is strongly individualistic. Utility is maximized on the level of the individual. "Individuals maximize welfare *as they conceive it*," (Becker 1995[2], p. 634, emphasis in original), and are not constrained to a particular definition of their welfare, at least in Becker's rhetoric.

At the same time, tastes are "stable across time and similar among people" (Stigler and Becker 1995, p. 185). While each person maximizes welfare as they conceive it, the underlying premise behind Becker's work is that all people conceive welfare in fundamentally the same way, and where it appears that they do not, there are economic reasons for the

apparent difference in tastes.

If the underlying utility function is fundamentally the same, the only distinguishing characteristic among individuals are their stocks and flows of various forms of capital (broadly conceived). Indeed, in Becker's model, human behavior is explainable by prices and capital stocks and flows. In this model, there is an individual, but all that individual is is an instantiation of a rational maximization of the one utility with particular capital stocks, because even the flows are determined by the stocks per the human capital model. The universal rationality eliminates any notion of "free will," and the unchanging tastes eliminate individual difference.

Utility is maximized on the level of the individual, but beyond that, the only thing that makes an individual distinct from any other is its level of stocks of various forms of capital. If two individuals had the same stocks of capital in a fully-developed, "sufficiently clever" Becker's model, their desires, tastes, actions, and behavior would be indistinguishable.

This "sufficiently clever" model has been the end of Becker's research endeavors for the past thirty-seven years. Becker's steps, while incremental, represent an attempt to allow utility-maximization theory to accommodate seemingly-changing preferences and cross-individual differences so that a general case of utility maximization could eventually explain all cases of decision-making preferences.

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