ECONOMIC THEORY AND THE LOW QUALITY OF AMERICAN BEER

Introduction:

John Kenneth Galbraith, long time Harvard Professor and 1976 recipient of the Veblen-Commons Award, makes reference to what he terms a “conventional wisdom.”

A precise definition for this term is difficult to muster, and, consequently, the term stimulates the social science imagination. As Galbraith uses it, conventional wisdom does imply a body of knowledge – a set of assumptions, precepts and conclusions – that are broadly shared by a large portion of a population.

In Chapter Two of his book The Affluent Society (1958), Galbraith (1984, p. 7) teaches us that members of society tend to “… associate truth with convenience.” Metaphorically, Galbraith (1984, p. 7) notes that members of society “… adhere as to a raft, to those ideas which represent our understanding.”

I think it safe to note that at least at home in the U.S., conventional wisdom holds that we Americans brew and drink great beers. This assumption, or better, assertion, can be seen displayed on billboards in numerous American cities. Television spots reinforce this assertion. Magazines and newspapers add yet more support to the assertion that Americans brew and drink great beers. In this paper I shall challenge this conventional wisdom, noting those thinking that Americans brew and drink great beers “associate truth with convenience,” as Galbraith (1984, p. 7) suggests.

When considering whether American beers are indeed great, we should consider their quality. With this in mind, I would like to suggest that the quality of a beverage like beer is not based on the number of television commercials associating beers with comely girls scantily clad in bikinis, adding a touch of erotic spice to what would otherwise register as in between, dull moments in a televised football game. Rather, quality has everything to do with nutritional value, and nutritional value of beer can be no better than the nutritional quality of the inputs that go towards its production as consumable beer, plus the production process – brewing in this case – as well as beer’s preparation for distribution and then the art of consuming beer, itself. In a direct challenge to the conventional wisdom widely held...
in the homeland, I would like to suggest that we Americans produce and consume faceless beer that is best described as "generic" beer: that is, if we were to remain polite and avoid urinary references. Counter arguments to my suggestion could certainly be obtained, but would likely require paying a marketing consultant a generous fee.

What is interesting to consider is that we Americans have not always consumed low quality, generic beer. At the start of the 20th century American beer was of the same caliber and as rich in nutritious ingredients as fine European beers brewed in regions of Germany, Bohemia, and Moravia, where the American lager beer tradition and process of bottom fermentation finds its geographic and cultural roots.

This paper seeks to demonstrate the quality of American beers deteriorated over the course of the 20th century to earn their reputations as faceless, generic beers: readily available in supermarkets and corner quickie markets across the United States. But, not only did beers deteriorate in quality, we could also lament that America's breads and its cheeses suffered a similar fate, as did the beverages and foods composing the American diet, in general. In sum, many of the richer traditions of beverages and foods of colonial and 19th century American life deteriorated in quality over the course of the 20th century.

Challenge to Economic Theory:

Can economic theory explain how we got to this low point: not only where the beer is of marginal nutritional quality, but also to where the consumption of domestically produced beverages and foods become hazardous not only to an individual's well being, but also to American society's overall health indices as reflected in vital statistics? Recent studies indicate that the U.S. will likely register as the first country in world history with a mixed market economy that exhibits declining years of life expectancy, already observable in vital statistics. In the view of Orshansky et al. (2005, p. 1139), type 2 diabetes, coronary heart disease, cancers, as well as other complications that are suggested to generate effects of decreasing life expectancy in the United States need to be viewed as diseases closely correlated with obesity, and obesity is correlated with consumption of beverages and foods from the food industry, with the vast portion consumed also produced domestically.

What is more, dangers associated with an American diet can be correlate with levels of educational attainment. Studies suggest that those better educated Americans typically have a scientific background and critical facilities to make choices that avert health problems associated with obesity gained through blindly consuming products offered and promoted by the American beverage and food industries. Studies increasingly show that years of schooling, on average, inversely correlate with body weight. As the British developed nuances of dialect and accent to denote status and social class, the American beverage and food industry offers us body weight to make similar classifications. The thinner American speaking to you
is likely better educated than his thicker counterparts, as he or she was able to select their diet and limit the quantity and frequency of caloric consumption relatively independent of advertising campaigns funded annually with billions of dollars by the beverage and food industries.

Can economic theory explain how and why the beverage and food industries in the United States over time offers its population – and a portion of the world for that matter – products with deteriorating nutritional quality? The answer is not a clear “yes.” However, allow me to pose an assertion that will be more thoroughly developed below: namely, that changes in America’s brewing industry clearly show the tendency for declining nutritional quality of its beer. I would also like to suggest that America’s brewing industry serves as a window for peering into the beverage and food industries writ large. So, let us proceed and make connecting where connections can be made.

In this paper we shall primarily concentrate on tracing the deterioration in quality of American beer over the course of the 20th century. In the conclusion we shall speculate on beer’s prospects for the 21st century. We shall consider mainstream, neoclassical theory and show that its tautological arguments serve to conceal problems such as deteriorating beer quality. In subsequent sections theories emanating from “path dependent” and “path creation” will be introduced as these approaches seem to offer more likely explanations.

Learning from Neoclassical Theory:

Mainstream, neoclassical economic theory exhibits the methodological capacity to account for quality deterioration in American beer – but only as a tautological exercise. Neoclassical consumer theory is built on the ambiguous measures of utility, and this branch of theory assumes utility maximization or maximizing marginal utility per unit of currency – such as a U.S. dollar – on the part of an informed and rational consumer (see for example, the original sources of Stanley Jevons, *The Theory of Political Economy* (1871), Chapter Two “Theory of Pleasure and Pain,”, and Carl Menger (1871), *Principles of Economics*, Chapter Three “The Theory of Value,” or E.K. Hunt’s *History of Economic Thought* (2002, pp. 251-265) for a clear summary.

The tautology can be described as the following. Whatever beverage or bundle of beverages and foods a consumer chooses, is selected in the interest of said consumer maximizing marginal utility per unit of currency. In the individual case, the consumer could choose to maximize his marginal utility per dollar, consuming beverages and foods with nutritional quality in mind. This certainly can occur, and, does occur. However, other dimensions need to be considered. For example, neoclassical theory also assumes that consumers do indeed possess perfect knowledge of the products they consume. This point was, however, skillfully criticized at length by two recent Nobel Prize recipients, George Akerlof and Joseph Stiglitz.
In their research findings these two authors note that a producer and seller typically has more information regarding their product or service than does a consumer. In sum, their work notes that consumers are typically on the short end of the stick of information necessary to base their consumption choices for maximizing marginal utility per unit of currency. Consequently, consumer decisions are clouded by the problem of what they term “asymmetric” information (see, for example Stiglitz (2003) and Akerlof (1984).

I think it prudent to assume that beverage producers and breweries have more information regarding ingredients, production processes, and hence nutritional value than do their consumers. In addition, consumptions patterns of beer might also be influenced by advertising dollars spent. (Why else might firms spend money on advertising?) Chuck Case and Ray Fair (2004, p. 211) note that about $U.S. 231 billion was spent on the full range of diverse forms of advertising in Year 2001, with these levels of spending rising in subsequent years. And, we might infer that the producers expending vast sums as advertising dollars are indeed interested in affecting outcomes that offer some return on their investments in advertising, than in merely “informing” consumers so that they might make a more “rational” choice.

If Americans suffer various maladies such as obesity and related diseases associated with beverage and food consumption, we could certainly note that they were likely maximizing their marginal utility per dollar, and achieved satisfaction in so doing: rendering themselves satisfied, and in cases, as fat as can be. However, such a notion is naïve. More realistically we could note that in the maximizing of their marginal utility per dollar, the health of some individual Americans is observed to be suffering from the effects of obesity that contributes to personal health care costs. Americans en masse are also bearing the financial burden as costs of health care rise as a percentage of GDP while more and more American suffer obesity and related health problems.

If we continue along these lines of trying to rely on neoclassical theory to explain the deteriorating quality of American beer, we would have to suggest that the outcome of the individual maximizing his marginal utility per dollar results in a “market failure,” as a portion of the actual costs of production are externalized on to the consumer. In the larger picture, we could then say that the beverages and food industries are externalizing costs on the larger body of American consumers (pun intended). Consequently, the story of the beverage and food industries is similar to the tobacco industry’s story, whereby the consumers as individuals and the society at large bear the externalized costs associated with tobacco production – as higher personal and societal healthcare costs. But this does really help us to understand and explain deteriorating beer quality over course of the 20th century. So, let us move one step forward.
Path Dependent:

The notion of “path dependent” was introduced as a theoretical approach some decades ago. It was, however, Paul David’s article, “Clio and the Economics of QWERTY” published in *American Economic Review* in 1985 that initiated both an active and lively discussion on the significance of the path dependent (see, for example A. Brian (1988) as well as S. Liebowitz and S. Margolis (1990)). David’s article suggests that there may well exist cases in which we can end up using a suboptimal method or technology, and continue with it over the long term. David’s case study is based on the creation and selection of the typewriter keyboard that we tend to take for granted, and consequently tend to not bother to notice. David, however, took careful notice.

David (1985, p. 333) teaches us that in the 19th century thin metal bars holding the keys of the upright typewriter tended to jam when a typist typed letters at a rigorous pace. Recognizing this problem Latham Scholes filed, in 1867, a patent application for a keyboard that would slow down the typist and thereby prevent the jamming of the bars. This explains the birth of the key board with the letters “QWERTY” on top left row. David also notes that this QWERTY keyboard configuration also contains in its top row sufficient letters, namely, “QWERTYUIOP,” that can also be rearranged to spell the brand name: “TYPE WRITER.” Scholes’ keyboard then takes into consideration those challenged persons engaged in sales who could impress their customers by quickly typing out the brand of the machine they were attempting to sell, all the while limiting themselves to the convenience of pecking out the letters across the top row.

What becomes curious in David’s research is that this technology of a keyboard configuration was designed to slow down the typist. And as we start the 21st century and much of the world now uses computer keyboards, we are, en masse still relying on an 1860s patent issued to ole Latham Scholes, designed to slow down our typing speeds. Our typing speeds were indeed slowed down and remain slowed down through what David terms a “lock in,” to what over time would prove to be a suboptimal keyboard configuration.

Why was not the Scholes keyboard rejected and replaced with a faster, and consequently, more optimal configuration of letters? David (1985, pp. 332, 334) notes for us that in 1932 inventor August Dvorak patented his DSK keyboard and trained W.L. Dealey, who (even with the handicap of being male) would win the world speed record for typing, using Dvorak’s DSK keyboard, of course. In the Decaded of the 1970s the DHIATENSOR key board was introduced and on the top row were ten letters that could be used to spell over seventy percent of words in the English language. As David notes, this keyboard configuration also proved to be faster than the QWERTY keyboard. But we know the story. What would prove to be a slow, suboptimal configuration patented by Latham Scholes in the 1860s remained widely used. What makes the point even more noteworthy, countries in the world use the Scholes keyboard and their word for “typewriter” cannot be achieved by pecking out letters on the top row.
For example, Germans also rely on the Scholes keyboard. Though they made the practical adaptation of substituting the more often used “z” for the “y” (QWERTZ); nevertheless, the letters of the first row cannot offer the word “Schreibmaschine” as the best one can do is “TZPE WRITER,” which does not make much sense for a continental sales person attempting to impress German customers.

In his inquiry into the low quality of American beer, Martin Stack (2000) attempts to make connections between David’s understanding of the typewriter keyboard, that is, the “lock in” of the Scholes keyboard as the American – and even world standard – and what he notes is an American styled, generic beer. It is noted that there occurred in the United States a lock in to a low quality, generic beer, where in selected taste tests, blindfolded participants could not distinguish their preferred brand from other brands, as the taste characteristics were so muted as to be judged indistinguishable even to name brand and trade mark loyalists.

Choi and Stack (2005, p. 80) trace the lock in to low quality, generic beer in the U.S. to “consumer switching costs.” Research of Gartland and Stack (2003) suggests that an estimation of consumer switching costs can lead to what they term a “behavioral lock in.” What they note is that consumers are less likely to try a rival product after they lock in to a brand.

I think that the efforts of Stack and his coauthors Choi and Gartland are indeed useful, but it could also be the case that large breweries had and have some vested interests that their customers drink a low quality generic beer void of distinguishable features, where product differentiation would avoid the beer, itself, and instead concentrate on the shape of the bottle (such as in a Freudian-styled long neck), appealing colors of the bottle label (often patriotic), and the skin deep beauty of the models hired for the advertising campaigns.

Stack has suggested that “path creation” might well be more important than path dependent. The literature on path creation is quite limited, however, and tends to fall into the domain of business scientists. For example, in their chapter “Path Creation as a Process of Mindful Deviation,” Raghu Garud and Peter Karnoe (2001) suggest that “novelty” plays a role in consumer choices and consumer choices or “selections” generate effects on product development, and hence serve to create a path. If one watches patterns displayed by the brewing industry, one can watch novelty at work: as advertising campaigns seek to note the novel character of the newest generation of beers. Worth noting is that each newest generation of beers, marketed as being yet that much greater and that much more novel than the last generation, tend to be made with (on average) declining amounts of ingredients. Consequently, we should suspect that nutritional quality would also be decreasing.

Have American’s consumers selected low quality generic beers over high quality Central European styled lagers? The answer is apparently “yes.” However, there seems to be more of an interaction between producers and customers than Garud and Karnoe suggest. The producer certainly has an interest in producing a low quality, generic beer, largely because the level of ingredients can be substantially reduced. In fact, empirical findings suggest that this is exactly the tendency.
quality, generic beer was achieved over the course of the 20th century by reducing the actual quantity of ingredients. If we consider the column depicting the total amount of fermentables in beer, in the period after the banning of the production and sale of beer and other alcoholic beverages, what we Americans term “Prohibition,” (1920-33) the amount as measured by weight of these fermentables steadily declined from 1935 to the last measure for which we have data, Year 1990. If we consider an ingredient as important for flavor and stability of beer as hops, we can also observe the portion of hops diminished by about 60 percent from 1935 to 1990 (see Table 1). This pattern should be seen as integral to efforts on the part of oligopolistic firms to cut costs relative to revenues, and thereby raise profits. It could also be the case that the consumer came to prefer a low quality, generic beer, and chose to – in David’s (1985) terminology to “lock in” and in Gartland and Stack’s (2003) terminology to suffer a “consumer lock in” related to consumer switching costs – and remain there, except for those more enlightened imbibers drinking on the fringes of the beer market supplied by higher quality imports and microbreweries.

If we think of a high quality Central European style beer produced in the U.S. in the early 1900s as an institution, we could note this institution of high quality beer evolved to an institution of a low quality generic beer over several decades. Table 2 presents a typical beer recipe circa 1915. The level of ingredients were generous, certainly when compared with Year 1990 depicted in Table 1. In the description of the presentation and tastes also described in Table 2, we can gain a sense that beer standards were indeed high in the pre-Prohibition era and at the start of the post-Prohibition era. What brought about the evolution in the institution of beer quality moving in the direction of high quality to low quality over the course of the 20th century?

Evolution of the Brewing Industry:

The move from small regional producers to national producers is important to consider. This movement conforms with a general tendency for concentration in industry, whereby small scale, regional producers are driven out of business by forces of competition over time, in our case under consideration, with the national breweries winning out. From Year 1865 to 1895 per capita consumption of beer increased from 3.4 gallons per person to 15.0 in Year 1895 (see Table 3). Please keep in mind that rising per capita consumption of beer took place during a period of substantial immigration and rising population. As per capita beer consumption increased the number of breweries decline from 2,252 in Year 1865 to 1,771 in Year 1895. Meanwhile the number of barrels of beer for the declining number of breweries increased substantially (see Table 3).

While this trend of rising concentration and increased output per brewery is not at all unusual for industries during this post Civil War era, beer is different from say, steel or shoe production. What can and should be noted is that compared to steel and shoes, beer does not travel well. Beer’s quality is known to be highest when it is consumed at the same location where it is produced and poured directly from the
barrel or tank. In the 19th century small proprietorships were brewing and selling beer in the same establishment, and to a customer base that was attracted by distinct character of local, saloon beers. Thus, the movement toward ever larger and national breweries should be considered as the first threats to the quality of American beer.

In a national brewery, with potentials for benefiting from economies of scale and selling in national markets, its beers that are produced in large volumes and then subsequently shipped face the challenge of shelf life. Shelf life is lengthened the more thoroughly a beer is filtered of its yeasts. Filtering a beer of its yeasts in the interests of shelf life takes away one of the key nutritional components, B vitamins, as well as minerals present in the barley malts. In sum, the shift from local, small brewery production and consumption to national brewers should be seen as the first step or tendency to begin to pare down the nutritional content of beer in the interests of shipping and shelf life.

Choi and Stack (2005, pp. 82-3), borrowing from the spirit of David’s article, note an array of other changes that took place over the course of the 19th and 20th century to lead us up to a “consumer lock in” with low quality, generic beer. They note the effects of thirteen years of a prohibition against production and consumption of alcoholic beverages; the emergence and challenge to breweries by the rise of soft drink empires; the spread of refrigeration and the subsequent drinking of colder beer; the switch from glass bottles to steel cans; as well as the increasing importance of consuming popular brands, with diminished regards for nutritional quality.

Conclusion, Discussion, and Lament:

We Americans have not always consumed low quality, generic beer virtually void of nutritional content, that has stabilizers, additives, that relies on malted rice in place of malted barley, and that is pasteurized and filtered so that the B vitamins found in brewers yeasts are virtually absent. In addition, Americans have not always eaten a dead orange material void of microorganisms that our largest corporations market as “cheese.” There is a story explaining how we got there. Nor have Americans always eaten factory produced white bread that can effortlessly be torn apart and rolled into round balls that resemble white pills from the pharmaceutical industry. Decades ago America’s towns and cities were characterized by creameries making a host of lively cheeses, by neighborhood bakeries cooking up healthy breads of whole grains, and of small, privately owned breweries making and array of high quality beers. Such creameries, bakeries, and breweries can still be found, but only a small portion of American consumers purchase such cheeses, breads, and beers.

Does the 21st century offer us hope for a reversed course? Unfortunately, change for the better does not seem to be in cards. The tendency and proclivity to rely more and more on genetic engineering and its applications to create genetically modified organisms (GMOs) began to be introduced to American beverages and
foods in a manner resembling a landslide: as soon as the U.S. Supreme Court offered its June 1980 decision in the case “Diamond versus Chakrabarty.” The five to four high court ruling means that living organisms can indeed be patented under Title 35 U.S.C. Section 101, and thereby claimed as private property. A veritable landslide of patent applications and allowed claims to cover organisms as private property suggests there are no signs on the horizon that the American beverage and food industries would ever consider relying on more nutritious ingredients that take longer to grow and process: when genetically modified materials can be substituted. In my opinion, it appears highly unlikely that the deterioration in quality of American beverages and foods – so visible in the 20th century – will be reversed in the genetically modified 21st century. Realistically, we should expect continued and probably an accelerated deterioration, at least from those firms engaged in the mass production and distribution of beverages and foods.

Sadly, implications of these and related developments can be seen in the deteriorating physical conditions, especially the fatness of Americans, with the generation under forty years of age showing symptoms of higher levels of overweight and obesity than those in the already over forty years of age group (Olshansky, et al. 2005, p. 1139). More research is clearly needed. Nevertheless data is beginning to suggest that we might indeed find some correlation between the rising frequency of obesity among Americans and the evolution taking place in the beverage and food industry over the last one hundred years for so. With this in mind, this short presentation that notes the evolution of American beer, and especially its deterioration in nutritional quality, is suggested to characterize much broader tendencies and patterns in the food and beverage industries.

**TABLE 1**

KEY INGREDIENTS PER BARREL OF BEER
YEARS 1915-1990

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Barley Malt (lbs/bl)</th>
<th>Maize (lbs/bl)</th>
<th>Total Fermentables (lbs/bl) including Rice and Maize</th>
<th>Hops (lbs/bl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1915</td>
<td>35.5</td>
<td>10.1</td>
<td>48.7</td>
<td>0.65</td>
</tr>
<tr>
<td>1935</td>
<td>38.2</td>
<td>7.5</td>
<td>48.8</td>
<td>0.70</td>
</tr>
<tr>
<td>1940</td>
<td>35.7</td>
<td>8.0</td>
<td>47.1</td>
<td>0.58</td>
</tr>
<tr>
<td>1950</td>
<td>30.5</td>
<td>8.0</td>
<td>43.7</td>
<td>0.43</td>
</tr>
<tr>
<td>1960</td>
<td>28.5</td>
<td>11.2</td>
<td>43.4</td>
<td>0.33</td>
</tr>
<tr>
<td>1970</td>
<td>27.6</td>
<td>10.8</td>
<td>42.2</td>
<td>0.23</td>
</tr>
<tr>
<td>1980</td>
<td>26.7</td>
<td>8.0</td>
<td>39.0</td>
<td>0.21</td>
</tr>
<tr>
<td>1990</td>
<td>24.3</td>
<td>5.4</td>
<td>35.3</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Source: United States Brewers Federation, 1951, 1979, 1993
One Barrel = 31 gal., appx. 117.8 liter, oder 1.18 hkl
1 lbs = 0.45kg
TABLE 2
TYPICAL BEER RECIPE circa. 1915
(For Each Barrel of Beer (31 gal. or 1.2 Hectaliters)

48 lbs Barley Malt
14 lbs Maize (flaked)
0.5 lbs Hops (domestic)
0.5 lbs Hops (Imported)

(Source: G. Fix, 1994)

Full golden color, long standing creamy crown, moderate taste, with a bit of sweetness through maismalt, balanced and defined with bitter-ness from hops, and a long, clear, and bitter taste until the end (J. Ren-ner, 1995).

Ein Fass = 31 gal. appx. 117.8 liter, oder 1.2 hkl = 1 lb = 0.45kg

Sources:

TABLE 3
ORGANIZATION IN THE BREWING INDUSTRY
(YEARS 1865-1895)

<table>
<thead>
<tr>
<th>Year</th>
<th>Breweries</th>
<th>Barrels (Millions)</th>
<th>Consumption pro person (gal.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1865</td>
<td>2,252</td>
<td>3.7</td>
<td>3.4</td>
</tr>
<tr>
<td>1870</td>
<td>3,286</td>
<td>6.6</td>
<td>5.3</td>
</tr>
<tr>
<td>1875</td>
<td>2,783</td>
<td>9.5</td>
<td>6.6</td>
</tr>
<tr>
<td>1880</td>
<td>2,741</td>
<td>13.3</td>
<td>8.2</td>
</tr>
<tr>
<td>1885</td>
<td>2,230</td>
<td>19.2</td>
<td>10.5</td>
</tr>
<tr>
<td>1890</td>
<td>2,156</td>
<td>27.6</td>
<td>13.6</td>
</tr>
<tr>
<td>1895</td>
<td>1,771</td>
<td>33.6</td>
<td>15.0</td>
</tr>
</tbody>
</table>


Bibliography:

Arthur, Brian. 1988. Self-reinforcing mechanisms in economics, in P. Anderson et al. (Eds) The Economy as an Evolving Complex System, Reading Massachusetts, Addison-Wesley
Case, Chuck and Fair, Ray. 2004 *Principles of Microeconomics*, Upper Saddle River, New Jersey, Pearson/Prentice Hall


**JEL Classifications**

B59 Current Heterodox Approaches (Other)

D20 Production and Organization (General)

D82 Information, Knowledge, and Uncertainty (Asymmetric and Private Information)
Abstract:

Conventional wisdom regarding the quality of American beer is explored. Three traditions in economic theory: neoclassical, path dependent, and path creation are applied to explain deteriorating nutritional quality of American beer. Broader notions of evolution over the course of time are also considered. Three tables of empirical evidence measure changes in the brewing industry, suggesting to explain decline in the nutritional quality of beer over time. Speculation is made regarding the future of beer quality (as well as the U.S. beverage and food industry), noting implications for public health.

Keywords: Beer, Public Health, Obesity, Industrial Organization, Path Dependent, Path Creation, Evolution