

Tom Sawyer and the Myth of Fundamental Value

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ABSTRACT

A fundamental assumption in economic analysis is that economic agents know their tastes — their likes and dislikes — before choosing between options. This assumption supports many of the normative claims of economic theory, notably the claim that free market exchanges necessarily increase individual and social welfare. The paper begins by reviewing previous research showing that individuals' dollar valuation of ordinary products and experiences can be moved up and down via manipulations that are obviously irrelevant to the pricing decision. Taking these findings as a starting point, the present paper asks a more basic question: Do people even have a pre-existing sense whether an experience is good or bad? Two simple experiments demonstrate that similar arbitrary manipulations can determine whether a given experience is desired or avoided.

In a famous passage of Mark Twain's novel, Tom Sawyer, Tom is faced with the unenviable job of whitewashing his aunt's fence in full view of his friends who will pass by shortly and whose snickering will only add insult to injury. But as we know, when his friends do show up, Tom applies himself to the paintbrush with gusto, presenting the tedious chore as a rare opportunity. Tom's friends wind up not only paying for the privilege of taking their turn at the fence, but also deriving real pleasure from the task — a win-win outcome if there ever was one. In Twain's words, Tom "had discovered a great law of human action, without knowing it – namely, that in order to make a man or a boy covet a thing, it is only necessary to make the thing difficult to attain."

There are no mysteries in what painting a fence entails. Hence, Tom's "law" challenges the intuition that whether a familiar activity or experience is pleasant or unpleasant is a self-evident matter – at least to the person participating in that activity. The intuition forms a cornerstone of modern economic analysis, which assumes that economic agents know what they like and dislike before confronting a choice between alternative outcomes. The assumed benefit of markets, touted most famously by Adam Smith, is that they increase people's welfare by allowing them to give up things they like less in exchange for things that they like more. But this assumes that people know what they like. In a world where people don't reliably know what they like, it cannot be assumed that voluntary trades will always improve well-being, or that markets will inevitably increase welfare.

Recent research by psychologists and behavioral economists suggests that Twain's notions about human nature may be closer to reality than that propounded by economics [1, 2,3,4,5]. In a set of previous experiments we [6] showed that evaluations of goods and

experiences have a large arbitrary component, yet once a response is given, other responses follow in a consistent fashion. In one study we sold consumer products ranging in value from \$10 to \$100 (computer equipment, wine bottles, chocolate boxes, books) to postgraduate business students. Students were presented with one product at a time and asked whether they would buy it for a price obtained by converting the last two digits of their social security number (an essentially random identification number) into a dollar figure – e.g., 34 became \$34. After this yes/no response, which we intended to serve as an “anchor” [7,8] for their later responses, they were asked to state the maximum price they were willing to pay for the product, using a procedure that motivates people to provide their true valuations.

Although students were reminded that the social security number is a random quantity conveying no information, those who happened to have high social security numbers were willing to pay much more for the products. For example, students with social security numbers in the bottom twenty percent of the social security number distribution priced on average a ‘98 Cotes du Rhone wine at \$8.64, while those with social security numbers in the top twenty percent of the distribution priced on average the same bottle at \$27.91. Because the assignment of social security numbers to students is random, we can regard the two groups as identical with respect to their underlying tastes and knowledge of wine. Evidently, the same person can value a given item at \$10 or at \$30, depending on historical accidents such as answering questions about randomly generated prices.

If consumers’ valuations of goods are so malleable, then why does one observe stable demand curves in the marketplace? A second aspect of the study provides a clue. If one looks across the different goods that were sold, one can see that, while students had little understanding of their absolute values, they did seem to have an idea of the *relative* values of

the different goods. Thus, for example, all students priced a relatively fancy bottle of wine – a ‘96 Hermitage Jaboulet “La Chapelle” – higher than the already mentioned ‘98 Cote du Rhone. The students did not know how much they valued either wine, as demonstrated by the impact of the arbitrary social security number, but they did know that the superior wine was worth more than the inferior wine, and they priced the wines accordingly. A researcher who looked at our data, but did not know about the social security number manipulation, would conclude that these consumers were behaving perfectly in line with economic theory — the more valuable products were indeed priced higher than the less valuable ones. We referred to the combination of arbitrary absolute pricing combined with sensible relative pricing as “coherent arbitrariness” because people are adjusting their valuations in a sensible, coherent, fashion when it is obvious how to do so, but they are making these adjustments from largely arbitrary baseline values.

Although the effect of the arbitrary social security number ‘anchor’ on valuations was dramatic, it could be argued that it is not all that surprising. After all, the students may not have had much idea what the goods were worth, either to them, or in the market. The ideal test of the arbitrariness of valuations would involve an experience that was unfamiliar and not normally priced in the market but which subjects could sample directly and understand without ambiguity. For this purpose we selected brief aversive sounds, delivered to subjects through earphones. A short exposure to such a sound provides the listener with complete and unambiguous information about the experience. Furthermore, in thinking about how much it would be worth to avoid listening to such a sound, subjects cannot rely on marketplace information. In an experiment representative of several reported in the same paper [6], we informed subjects that they were about to hear an unpleasant sound played over headphones

and asked them first to consider, hypothetically, whether they would be willing to listen to the sound for 300 seconds in exchange for an amount that they composed from the first three digits of their social security number (e.g., 287 = \$2.87). Subjects then had three opportunities to listen to the same sound, lasting 100 seconds in one trial, 300 seconds in another, and 600 seconds in a third. In each trial, subjects stated the smallest amount of money they would accept to hear the sound for that duration, the computer randomly picked a price, and if the price set by the subject was lower than the computer's price, then subjects heard the sound and received the amount of money set by the randomly drawn number; if their price was lower they did not hear the sound or receive payment. The results showed that subjects were coherent with respect to duration; they demanded about one and a half times as much to hear the 300 second sound as to hear the 100 second sound, and half again more to hear the 600 second sound. However, subjects with lower social security numbers demanded much less to hear the sound than those with higher social security numbers. Other studies also involving aversive sounds showed that the degree of arbitrariness was not reduced by market interactions, and that arbitrariness is not unique to money valuations; we observed very similar effects when subjects made choices between drinking different volumes of a bitter substance and listening to unpleasant sounds of varying duration.

These results showed that individuals did not seem to have a preexisting personal dollar value for ordinary products and experiences. Taking these findings as a starting point, the present paper asks a more basic question: Do people even have a pre-existing sense whether an experience is good or bad? Tom's "law" suggests that they do not – that the exact same experience can be desired or avoided, depending on minor accidents of context and presentation. The next two experiments examine this question empirically.

Experiment 1

To test whether there are experiences that individuals can perceive as either positive or negative, we conducted a poetry reading experiment. Respondents were told that in a week's time their professor (who they were familiar with) would be conducting a 15-minute poetry reading from Walt Whitman's "Leaves of Grass." Next, half of the respondents (N = 75) were asked whether hypothetically they would be willing to **pay** \$2 to listen to their professor recite poetry. The other half of the respondents (N = 71) were asked whether hypothetically they would be willing to **accept** \$2 to listen to Professor Ariely recite poetry. After answering one of these hypothetical questions, all respondents were told that the poetry reading scheduled for next week was going to be free and were asked to indicate if they wanted to be notified via email about its location and time. The goal of this question was to test whether the initial hypothetical question affected whether respondents viewed the experience as positive (meaning that they would like to attend if it was free) or negative (meaning that they would prefer not to attend if it was free).

The results in Table 1 show is that the professor was not a great draw, at least as a reader of poetry: Only 3% of the respondents were willing to pay \$2 to listen to him recite poetry. However, most (59%) respondents were willing to endure the recital for \$2. More important for our purpose was the response to the second question. The percentage of respondents willing to attend the free poetry recitation was 8% in the accept condition and 35% in the pay condition [$t(144) = 4.0, p < 0.001$]. The first response clearly influences whether individuals view the experience as positive or negative.

--- **Table 1 about here** ---

Experiment 2

Experiment 2 (conducted with different subjects) was designed to replicate Experiment 1, while also examining consistency within an individual across responses. Half of the respondents (N = 91) were asked whether hypothetically they would be willing to **pay** \$10 to listen to their professor recite poetry for 10 minutes, followed by a request to indicate their monetary valuations for 1, 3, and 6 minute of poetry reading. The other half of respondents (N = 73) were asked whether hypothetically they would be willing to **accept** \$10 to listen to professor Ariely recite poetry for 10 minutes, followed by a request to indicate the minimum they would be willing to accept for 1, 3, and 6 minute of poetry reading. A similar experimental procedure was also used in the domain of participation in decision-making experiments. In this version we showed subjects an example question in a decision-making study and asked them hypothetically whether they will pay (or accept) \$10 for participation of a 10 minutes such study. After this initial hypothetical question, subjects were asked to indicate their monetary valuations for participating in such a study for 1, 3, and 6 minute.

The results in Figure 1 show that valuations were strongly influenced by the initial question. Individuals in the paying condition were willing to pay for the experience, while individuals in the accepting payment condition wanted to charge for the experience. Furthermore, respondents consistently indicated higher sums of money for longer durations, whether it was a matter of *paying for* or *being paid for* the experience. Respondents did not have a pre-existing sense whether the poetry reading (or participating in a decision making

experiment) was a good or bad experience for them, but they knew that either way “more” of the experience requires more money.

---- **Figure 1 about here** ---

Discussion

Looking around, the economist observes people making a myriad of choices, ranging from the trivial to the profound. People decide whether or not to purchase Big Macs, to smoke, run red lights, take vacations in Patagonia, listen to Wagner, slave away at doctoral dissertations, marry, have children, live in the suburbs, vote Republican, and so on. These choices are all grist for the social science mill. The general orderliness in these choices, their stability for a given individual and the correct directional response to changing incentives, encourages the belief that the choices are rooted in personal likes and dislikes – in fundamental values.

We suggest, in contrast, that correct directional response to changing incentives do not provide strong support for fundamental valuation, but can follow from the fact that people try to behave in a sensible manner when it is obvious how to do so. Students may have no idea if listening to their professor is a good or bad experience, but they do know that if it’s bad, longer is worse than shorter, and that, if it’s good, then longer must be better than shorter. Likewise, stability could in principle result from the mere desire to behave sensibly if initial “foundational” choices, which are perhaps weakly determined by personal tastes, subsequently enter the individual’s stock of decisional precedents, ready to be invoked the next time a similar choice situation arises. Economists observe responsiveness to incentives and stability

and conclude that individuals are making choices based on fundamental valuation, much as they would if they observed our experiment, without awareness of the initial manipulation.

The degree of coherence and arbitrariness exhibited in any set of choices is likely to depend on a number of factors. Coherence, as we stated, will depend on how easy it is to detect incoherence [9], which depends in turn on factors such as computational simplicity (e.g., whether units of measurement are commensurable); how close in time choices are made, and whether they are presented in a format that draws attention connections between them.

Arbitrariness depends critically on the degree of hedonic ambiguity inherent in a good or experience. We deliberately selected a highly ambiguous experience as the stimulus for the two studies presented to here; clearly, some experiences are unambiguously good or bad. One might conclude, then, that these stimuli represent the extreme high-end of the ambiguity continuum, but we do not believe that this is the case. The studies just presented involved discrete experiences – listening to a poetry reading or participating in an experiment. But many of the most important decisions that people make – for example about marriage, education, jobs and vacations – involve experiences that are extended over time. Such extended experiences are likely to be even more difficult to evaluate, and hence even more subject to arbitrariness than the experiences examined in our study [10]. Is a beach vacation that includes peaceful hours of reading on the beach, delicious meals, but also screaming children, money worries, and stressful transportation a good thing or a bad thing; this is an awfully difficult question to answer. But, whether one views it as a good or a bad, it is likely that a longer vacation would be evaluated as *more* good or more bad.

The results from the auction study with consumer items suggests that coherent arbitrariness is likely to apply to more than just personal experiences, whether discrete or

extended over time. Consider, for example, the value of publicly traded stocks. In theory, a stock's value is supposed to reflect a company's expected stream of dividends, appropriately discounted, but this quantity is extremely difficult to estimate and hence prices are likely to be arbitrary to some degree. However, if a company repurchases its own shares, if a division unexpectedly goes bankrupt, or if the popular CEO has a heart attack, the implications are relatively straight forward, at least directionally. Stock prices are likely to appear highly rational, as if supported by fundamental valuations, if one looks at their responses to events of this type, even if they in fact incorporate a large arbitrary component [11].

The more general conclusion from this research is that the standard economic account of behavior, which assumes that people make decisions in a coherent fashion based on stable preferences, is valid, but only as an account of how people *would like* to behave. When it is obvious how to behave in a sensible manner, people do. But the coherence of responses to obvious changes in incentives serves to disguise just how arbitrary economic decisions can be.

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Table 1

Accept Group

Would you attend Ariely recital for \$2? 59% say Yes

Would you attend Ariely recital for Free? 8% say Yes

Pay Group

Would you pay \$2 to attend Ariely recital? 3% say Yes

Would you attend Ariely recital for Free? 35% say Yes

Figure Captions

Figure 1: Willingness to pay and to accept for different durations of poetry (right) and experiment participation (left) as a function of whether the hypothetical question was for paying or accepting payment.

Figure 1

