

# On facts and values: critique of the fact-value dichotomy in economics

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## Abstract

The fact-value dichotomy has been with us for centuries, since David Hume gave birth to the idea and in its most modern form was championed by the logical positivists. Two thought-experiments throw open the nature of the relationship between facts and values and later, Socrates is invoked to demonstrate the objective dimension of values and the difference between a value that is held as true and one that is true. This leads, at the end, to the following theorem: When we speak of the division between facts and values in conceptual space, we must admit that the truth and idea of facts is not definable using the expressive means facts afford, rather, the truth and idea of facts can only be defined with values, and these values have an objective dimension.

**Keywords** fact-value dichotomy, Hume's guillotine, positive-normative distinction, Socrates, fact-value entanglement, factual commitments, significance testing

**JEL codes** A13, B41, D03

## Introduction

There is a certain tendency in economics, whose genealogy may be traced back to the time of the hardening and ossification of Scepticism and which has the smell of the Dogmatism of Clitomachus and Carneades and other Academicians of classical Greece<sup>1</sup>. It is to David Hume's *A Treatise of Human Nature*, that we formally owe this tendency: that of the segregation of facts from values.

The fact-value dichotomy had methodological and substantive ramifications: at once sequestering values as unscientific poppycock and holding facts to be the only objective, rational class of knowledge. It was only logical – *from the premises* – that the praxis of science, if it was to be credible, had to eviscerate all but the most necessary methodological values, and so the distinction was drawn between positivist science and normative science and in our domain, between positive economics and normative economics.

The section entitled "Hume's Guillotine" traces the historical basis of the fact-value dichotomy in the work of David Hume, sketching along the way the economists who introduced the concept to our science and the effects of logical positivism therein. "The Legend of the Theorem Producing Program" is a daring attempt to understand the relationship between

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<sup>1</sup> In the *Pyrrhonic Sketches*, Sextus Empiricus identifies three strands of philosophy, in relation to their epistemological position: those who think they have found the truth, like the Dogmatics –the schools of Aristotle and Epicurus-, those who declare it impossible to find –like the Academicians such as Clitomachus and Carneades-, and those who continue to seek the truth, like the Sceptics. The Sceptics held to an empirical view of the world, holding that what existed out of the phenomenal world could not be sensibly spoken off as being true or untrue, and that a suspension of judgement on non-phenomenal matters would lead to a state of imperturbability they called ἀταραξία. It seems to me that the Enlightenment took a hardened strand of this view in separating facts and values and declaring the one worthy of science and the other purely subjective, and subsequently, the logical positivists took it to its logical conclusion and declared all value-judgements nonsensical.

facts and values by way of two thought-experiments, whose conclusions demonstrate the difficulties of determining facts without values, are striking and can be summed up in the theorem:

Outside of the conceptual realm, there are only raw facts, and so, no fact-value dichotomy exists; within the *conceptual* realm, the fact-value dichotomy does not exist because, ultimately, when we speak of the division between facts and values in *conceptual* space, we must admit that the truth and idea of facts is not definable using the expressive means facts afford, rather, the truth and idea of facts can only be defined with values and these values have an objective dimension.

The section entitled “On the Good” is a homage to the Socrates of Protagoras, demonstrating that those much maligned beasts of the psychic deep, “values”, are subject to interrogation by logic, and can be held to enquiry in a manner similar to facts, so that we can say, “this is a true belief, this a false belief”, and consequently, that values also are fit for scientific enquiry of the most rigorous kind.

### **Hume’s guillotine**

The fact-value dichotomy developed as part of Hume’s assault on moral rationalism and his endorsement of moral sentimentalism. Where moral rationalists believed in reason as a guiding force in our actions, Hume saw reason as playing no part; where moral rationalists believed the passions were sometimes opposed to reason, Hume felt the passions could not be in conflict, or in accord with reason. In a word, for Hume, morality did not arise out of reason, and the morality of an action was not the result of true or false judgements, for moral actions were not founded on facts, or judgements.

What of it?

Hume held that there were two kinds of reasoning: “the comparing of ideas”<sup>2</sup> and the “inferring of matters of fact”<sup>3</sup>, asserting that morality was closed to demonstrative reason, being a purely intuitive, unobservable, psychological<sup>4</sup> phenomenon, and that probable reasoning applied to matters of fact, for the objects of our perception are outside of us, “impressions of sensation”<sup>5</sup> and when we observe these objects, we see only its non-moral qualities: what moral properties we see are “impressions of reflection”<sup>6</sup>. Therefore, there is a rupture between facts and values: no statement, therefore, as a general principle, can be both, evaluative and factual, and only matters of fact can be said to be “true” or “false”, due to the objective nature of facts in contradistinction to the subjective nature of value; of values, we can only say that, “this is good”, or “this is bad”.

In economics, the idea of a separation of positive and normative economics can be traced back to Nassau Senior and John Stuart Mill, but it was only in 1891 that John Neville Keynes distinguished between positive economics as the economics of what *is*, of *facts*, and

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<sup>2</sup> Hume (2010).

<sup>3</sup> Ibid.

<sup>4</sup> Vladimir Lefebvre’s work on reflexive theory, as seen in his book *The Structure of Awareness*, demonstrates that the problem of a scientific study of the mental life can be overcome, decisively, by representing it with mathematics. Reflexive theory is superior to game theory because it endogenously considers behavioural and moral facts.

<sup>5</sup> Hume (2010).

<sup>6</sup> Ibid.

normative economics as the economics of values, of what *ought* to be. Blaug (1980) adds that positive economics was originally a matter of “scientific” economics whereas normative economics was a matter of practical policy. With John Neville Keynes’ work, under the influence of logical positivism, the distinction between positive and normative economics became entangled with that of facts and values, so that today, positive economics refers to factual economics and normative economics, to value-based economics.

In the twentieth century, the brief blooming and timely withering of logical positivism heightened the strength of this tendency and it was opined that facts were the only object of rational and therefore scientific endeavour, values being merely the stuff of opinion, a nonsense better left to priests and moralists. Only analytical statements that were true by definition, such as “ $1+1 = 2$ ”, and synthetic statements, i.e. those statements of observed fact, were “meaningful”. Logical positivism collapsed as a school when some sensible observer pointed out the self-referential absurdity of their founding claim: it could neither be directly confirmed nor reduced to direct confirmation and was clearly not an analytical statement true by definition, and so, by the criterion of meaning developed by the logical positivists, was itself meaningless<sup>7</sup>.

Hélas! The fact-value dichotomy lived on. In a nebulous sense, economics gave sanctuary to logical positivism because the idea of the dichotomy was so pervasive. One of the central tenets of logical positivism, adopted formally by the majority of economists, is the idea that economics is or must become a “positive science” in which value judgements are shunned, and only what is purely factual is deemed worthy of attention.

As an outgrowth of the fact-value dichotomy, we have come to believe that values play no role in economics or in determining what is a “fact”; that values are not imbedded in our theories; and that values are outside of the realm of reason and objectivity.

The purpose of this paper is to demonstrate that the fact-value dichotomy is a chimera and that accordingly our understanding of what constitutes economics has been unnecessarily hindered and narrowed, waylaying us on the path to truth.

### **The legend of the theorem producing program**

Supposing in some far flung corner of the world, in a time unknown, there was an economist with a refined skill as a programmer. This economist, let us name him, Mr X, for some might hope that he is the archetype of the economist of the future, sets upon an ambitious program inspired by the fact-value dichotomy: to create a program to derive and optimize *factual* economic statements – theories and theorems included – from some mass of raw facts. Let us suppose too, that Mr X’s program is fed *all* information in existence, without discrimination and that as part of its operations it delineates economic facts from this mass of knowledge. The optimization of the factual statements would have the goal of making the most effective use of the factual statements and arrive at an estimate of the robustness of the factual statements, all in relation to facts.

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<sup>7</sup> Abbot (Spring 2001).

The optimization would proceed in four steps:

1. A historical simulation of an economic system over some timeframe,  $\alpha$ , to derive factual statements. If a factual statement failed the simulation stage, it would be discarded.
2. An optimization of the successful or “provisionally true” factual statements over timeframe,  $\beta$  – which immediately follows  $\alpha$  –, in order to discover parameters for the factual statements best suited to the data. Each factual statement would then have sub-factual statements based on various parameters; each sub-factual statement would be ranked according to some performance measure.
3. A walk-forward analysis over timeframe,  $\gamma$  – which immediately follows  $\beta$  –, to test our optimization’s efficiency and the performance of the factual statements.
4. A stress test over a timeframe,  $\delta$  – which immediately follows  $\gamma$  –, to see how the factual statements would perform in various scenarios, ranked according to probability and impact.

Immediately, our economist-of-the-future would run into problems: anything that is an economic fact is necessarily a *subject* of the program and therefore cannot be part of the structure of the *language* of the program. Assertions about the nature of economics and its subjects, that are true and unverifiable, would need to be made. How to determine what a fact is... It is clear that *all* axioms<sup>8</sup> of economics and *all* rules of inference, including statistical inference, would need to be stated. Again, an algorithm to determine, from the mass of raw facts, what was relevant to economics and to organize it and derive factual statements would be necessary. This too could not be an algorithm that was composed of facts. A method of evaluating the “performance” of the factual statements would have to be given<sup>9</sup>, in order to test and *choose* factual statements. Mr X would not be interested in every possible factual statement; therefore, he would also have to specify the questions for which priority should be given in the pursuit of factual statements.

Again, a “*gedankenversuch*”<sup>10</sup>: when a baby is born, and it experiences the rain for the first time, we cannot deny the raw “fact” of the rain, it is there, like life, and we cannot claim that the baby, newly born, has any “values” that we can critique.

What are we to make of all this? The solution to these two thought-experiments is the key to understanding the fact-value dichotomy: in a world without man, there are only raw “facts”<sup>11</sup>, and there are no values. The introduction of man into the world conceptualizes and injects it with values, for all thought is bound up with valuing, and when we think about something, we impute that “fact” with values: for the baby, the rain is nothing more than raw data, but when the baby develops to the point when it can think about the rain and conceptualize it, it imputes the rain with values, it says, “such-and-such count for being rain”, “this drop of water is not

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<sup>8</sup> The issue will be dealt with later but suffice it to say, the program cannot be founded on facts but must be founded on proven statements, or axioms, or suffer from the problem of self-reference.

<sup>9</sup> An example of this is the value-judgement once made by Gottfried Leibniz, “God has chosen that which is the most perfect, that is to say, in which at the same time the hypotheses are as simple as possible, and the phenomena are as rich as possible.” This is stronger than Ockham’s razor, *entia non sunt multiplicanda praeter necessitates* (“Entities are not to be multiplied beyond necessity”), because it explains why Ockham’s razor works.

<sup>10</sup> German for “thought experiment”.

<sup>11</sup> The word “fact” implies something that is true, but in reality, our language hides our knotted understanding, for we often conflate “true” with “held as true”, for example, it was once an undisputed “fact” that the earth was the centre of the universe.

enough to be called rain”, which is to say, outside of our thinking, of human experience, we have no values, and if we have “facts”, they are no more than raw data, but in the experience of cognition, at the conceptual level, values create facts through standards of evidence, and rules of inference. More clearly, the fact-value dichotomy does not exist at the conceptual level because facts presuppose values, and at the base, non-conceptual level, if we are to speak of “facts”, we must speak of them with tongue in cheek, blushing, knowing that we really mean “raw data”.

The world is a laboratory of hypotheses tested each day by man, and who is thus, in a sense, a scientist, and as a scientist, he makes value judgments, weighing up evidence and judging it sufficient, satisfactory, or strong, in essence, accepting *this* as a fact and rejecting *that* as a fact. This is no passive act, more acceptance than creation of facts; no, it is an active participation in the formation of facts and the weight of evidence demanded by man qua scientist is dependent upon the severity of punishment in the event of error<sup>12</sup>. Values viz. rules of inference exist prior to facts in their purified, conceptual form. The concept of “this” fact is dead without values, what exists are only raw facts. In choosing a significance level, man qua scientist sifts through raw facts and draws a necessarily arbitrary line and says, “these are false”, and “these are true”, creating two categories of facts where before there were only raw facts, and banishing into non-existence one category, “that is not a fact”, and investing another with the attributes of truth, “for at this level of significance I have chosen, this corresponds with reality”.

An example of the creative nature of the engagement of man qua scientist with raw facts is “the cult of significance testing” discussed by Stephen T. Ziliak and Deirdre N. McCloskey: false beliefs about the meaning of statistical significance have resulted in the equating of statistical significance with, say, economic significance, and the import of this is that we have lost the economic dimension in our logic of uncertainty, and major findings in the field of economics are rejected as “false”, left unpublished, because they fail to meet the arbitrary rules of inference set by economists, whilst minor findings, fitting in snugly and ensconced within statistical significance, are praised and published and pursued. As a consequence of this, our conceptual space regarding the field of economics is skewered towards the pursuit of economic insignificance resplendent with statistical significance. The size of the effect of a finding are of less importance than the possibility of error, and so, raw facts of high magnitude in their import, are regularly banished to the nether lands of falsehood.

Values are inescapable and rather than seeking to eliminate them, they must be made conscious, brought to the surface and critiqued. Our fault is not in having values, but in not being conscious of the premises behind our reasoning and thereby holding onto *false* beliefs. The example of Socrates, the Delphic maxim, “know thyself”, these are more necessary to the economic enterprise than the war against values.

Outside of the conceptual realm, there are only raw facts, and so, no fact-value dichotomy exists, within the *conceptual* realm, the fact-value dichotomy does not exist because, ultimately, when we speak of the division between facts and values in *conceptual* space, we must admit that the truth and idea of facts is not definable using the expressive means facts afford, rather, the truth and idea of facts can only be defined with values and these values have an objective dimension.

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<sup>12</sup> Rudner, 1953.

## On the good

In the realm of human action, everything is done in the pursuit of what is good. If we hold up “the good” as an empty vessel free from practical implications – an abstraction –, we may then say that *all men strive after “the good”*<sup>13</sup>. This is their ultimate, objective value, the *ne plus ultra* of ends. No human action is undertaken in which the agent does not believe that he is undertaking the best possible action. Ah! “But are men not sometimes overcome by pleasure into doing what is evil?”<sup>14</sup> someone grumbles. To this error, Socrates gave a worthy rebuttal: if we fill our concept of “the good” with this thing we call “pleasure”, so that “the good” = “pleasure”, our statement then becomes, “But are men not sometimes overcome by the good into doing what is evil?”, a patent absurdity<sup>15</sup>. “Nay, but our questioner will rejoin with a laugh, if he be one of the swaggering sort, ‘That is too ridiculous, that a man should do what he knows to be evil when he ought not, because he is overcome by good’ ”<sup>16</sup>. Only if the good and the evil are “out of proportion”<sup>17</sup> to one another can one be “overcome by pleasure”, i.e. when one *imputes* more value into “the evil” than into the good, one will choose “the evil”, for it is completely ridiculous to believe that knowing the evil to be evil one chooses it over the good. Through reflexion<sup>18</sup>, or *verstehen*, we can logically critique the beliefs we hold and by understanding the beliefs of others we see the reasoning behind them. Value-subjectivism exists in so far as one subjectively fills the empty concept of “the good” with notions of what it is to have “the good”, and the means necessary to achieve “the good”. All human action is purposeful, driven by ends, and beliefs. Only in this sense are values subjective. On a higher plane, values are objective; they exist above and beyond all men, are outside of us, yet part of us, and because our subjective *evaluations* are subject to rational critique, we can say that the field of values is open to rational discussion. One may err in one’s beliefs, in one’s evaluations, but the ultimate end is unquestionable and objective: the good. The good is the ultimate end; its pursuit is the organizing principle of human action. To this empty concept we enter our subjective interpretations of what it is to have the good, of the means necessary to achieve the good, with “pleasure”, “profit”, “riches”, “love”, “liberty” “hard work”, “liberality”, “generosity”, and things of such nature. The good is like a play to be performed, a dead thing on paper that comes alive when it is interpreted and performed, sometimes well, sometimes badly, but always with the end of performing it well.

The fundamental error of value subjectivists is in equating *holding as good* with *being good*<sup>19</sup>. The rules of logic are universal and values are open to empirical criticism. When we make the Fregean distinction between what is held to be good and what is good, we can then ask, “Who is right?” If however we create the identity, good = what is held to be good, then we create an interminable chain of the kind, “what is held to be (what is held to be (...))))).”

In conflating what is held to be good with what is good, there is no room, logically, for rational discussion, because each holding-to-be-good is a personal affirmation which brooks no infringement. However, as we have shown, all action is grounded on objective values, and

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<sup>13</sup> I use “good” and “evil” in purely non-moral ways.

<sup>14</sup> A contemporary variation on this theme can be heard when bankers are accused of allowing themselves to be seduced by bonuses into risk-seeking behaviour.

<sup>15</sup> This line of reasoning stems from Plato’s dialogue, *Protagoras*, in which Socrates and Protagoras discusses the question of being overcome by pleasure.

<sup>16</sup> Plato, *Protagoras*, <http://www.gutenberg.org/files/1591/1591-h/1591-h.htm>, 2008.

<sup>17</sup> *Ibid.*

<sup>18</sup> In the Lefebvrian sense.

<sup>19</sup> Frege made this distinction in his critique of psychologism.

errors are subjectively determined false beliefs regarding those objective values. The play is performed badly, but this does not negate the objectivity of the play. We err because we do not know better<sup>20</sup>.

How are we to assess value judgements? Value judgements are conceptual, at the objective level, guiding our preferences like a strategic principle of trading organizing the trading decisions taken daily by managers, but they make factual commitments, which is to say that we expect a fund manager whose end is a strong pessimistic return on margin (PROM), to *act* in certain ways. The concept says nothing about what those actions will be, but it tells us what the nature of those actions will be like. Consequently, value judgements must be assessed at the conceptual level, with the proviso that, if, for example, our fund manager is weighing two strategies he must first judge them at the conceptual level – perhaps favouring one because he believes its risk management is robust to volatility and allows him to ride a trend to its conclusion –, and only *then* test them against empirical data, not to falsify it, but to see if the factual commitments made apply to the data, for a trading strategy may be a disaster in one asset, and a success in another. So it is with value judgements, they must be judged at the conceptual level, and then their factual commitments tested against empirical evidence.

### **The aftermath**

We have seen that prior to man, there are no values, only facts in their rawest form, but the presence of man, thinking man, reflecting upon raw facts, immediately implicates those raw facts with values, so that at the conceptual level, facts presuppose values, and in most direct way possible: in forming the rules of inference of his subject, and creating standards of evidence, various levels of significance for the acceptance of a “fact”, man creates what we might call, “conceptual facts”. The role of values is to arrive at true, logical notions, and it is false beliefs that lead us astray, into thinking that “facts” are “facts” because we hold them to be facts. We must exercise our creativity in a positive way so that in purifying our raw facts our conceptual facts bear a correspondence with reality. Ultimately, values too are worthy of scientific examination, having a rational and objective dimension. The fact-value dichotomy is not dead. It never existed. It cannot. Outside of thought there are only facts, within conceptual space, there are no facts without values and these values have a rational and objective dimension that opens them to logical critique.

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<sup>20</sup> The knowledge that we bring to bear in our decision-making guides our actions. We do not act against our knowledge. I may know that drinking and driving is bad, but if I drink and then when in contemplating whether or not I must drive, I do not bring to bear the knowledge that drunk driving is bad, then that knowledge does not count as part of my decision-making. Aristotle makes this point in his *Nicomachean Ethics* when he writes: “But since we speak of knowing in a twofold sense (for both the person who possesses knowledge but does not use it and the person who uses it are said to know), one will differentiate the person who possesses knowledge but does not attend to it – and even attends instead to the things he ought *not* to do – from the person who possesses knowledge and attends to it. For the latter [if he still acts wrongly] seems bizarre, but if he does not attend to his knowledge, he does not seem bizarre. ... For we see in possessing-and-not-using a diversity of disposition, so that in a way it is possessing-and-not-possessing .... Uttering the statements based on knowledge signifies nothing. ... Incontinent people must be supposed to speak in just the way that actors do.”

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