CAPLAN ON PROBABILITY: A CRITIQUE

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Abstract: This paper addresses economic methodology, focusing particularly on Caplan's (2003) probabilistic analysis and the problems therewith. The argument launched against Caplan is based on the fact that the said author either violates the rule of self-reference (his methodological statement) rule does not obey the standard it sets itself to judge the lower-level propositions of economics) or if it does not, Caplan is inevitably in the epistemic dark as to the probability of lower-level propositions. In the meantime, we will make an attempt at the exegesis of what Caplan may possibly mean by the notion of probability. Finally, it will be demonstrated that the criticism directed at Caplan does not apply to the methodology employed by Austrian economics.

Key words: Methodology; probability; Austrian economics; synthetic apriori

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1. Introduction

This paper is a continuation of the methodological debate launched by Caplan and continued by him and his Austrian critics Block and Hulsmann.[1] It mainly concerns the synthetic apriori, which the Austrians support and Caplan's criticism of this doctrine, based on the probability considerations he offers. In section 2 we probe the requirement of self-reference. Section 3 is given over to a focus on the self-reference criterion applied to Caplan's probability analysis. In section 4 we make an exegetical attempt of the Caplanian notion of probability, and in section 5 we ask if Austrianism itself passes muster under the stringent conditions to which we have subjected Caplan's thesis. The burden of section 6 is to demonstrate that the overall prospects for the Caplanian methodological paradigm are bleak. It does not even allow Caplan to make a distinction between purely analytical truth and only adventitiously true empirical statements.

2. The requirement of self-reference

The touchstone we are going to employ in this paper when judging the respective methodological positions is whether a given methodological statement obeys the principle of self-reference, that is whether the rule itself conforms to the standard it applies to other propositions (in this case, first-order propositions constituting the body of a given science or scholarship). Technically speaking, if a meta-statement uses a universal quantifier (of the form "everything is P", where P is

[1] Block, 1999, 2003, 2005, 2007; Caplan, 1999, 2000, 2001, 2003; Hulsmann, 1999

some predicate), the rule itself must fall under its sway. That is, if the meta-statement says that everything is P, then this very rule should apply its standard to itself; so that it must be true that the meta-statement is P too.

To illustrate the point, there is a famous refutation of the methodological view of logical positivists delivered by Hans-Hermann Hoppe (1995). Logical positivists maintained that the truth of propositions derives only from two sources. They are either contingently true (the reality happened to be such-and-such, in which case they are *synthetic a posteriori* true statements, that is ones whose truth is not necessary but adventitious; or, in other words, because facts turned out to be such-and-such). For example, it is now raining, or, that girl is wearing a red blouse. The alternative is that they are true by definition (in which case they are *analytical a priori* true statements, that is ones that do not extend our knowledge; they merely indicate how we have chosen to use words). For example, bachelors are unmarried men, or "elephant" refers to that big animal with the funny looking nose. To summarize: for the logical positivists, there are only two types of states. First, empirical ones that are falsifiable, and not only apply to the real world but also tell us about it. Second, there are tautologies, which are necessarily true, non-falsifiable, but do not describe the state of the world; they only indicate how language works. There is no such thing as a synthetic apriori statement, one which is necessarily true, non-falsifiable, but, yet, nevertheless, applies to reality.[2]

Now Hoppe asks the critical question, alluding to the self-reference problem: what is the status of this very methodological rule? If it is true, it must fall into either of these two categories – either it is contingently (empirically) true or merely analytically correct (that is, by virtue of the very words involved in its formulation). If the former is the case, there is nothing necessary about its truth. Sometimes it may be true, on other occasions, false. The only way to distinguish the one case from the other is by empirical examination. The logical positivists' position and its truth would thus have to be verified by checking it against reality. Therefore if it is true, it is only tentatively so. In a future experiment, it may always be falsified. After all, according to the scrutinized methodological rule, whatever is synthetic is empirical and these types of claims are at least in principle falsifiable.

But this will not at all suffice for the logical positivists. They see this alternative as the very bedrock of their philosophy. It has attained, at least for them, the status of the synthetic apriori, something they presumably reject out of hand. In other words, their philosophy is built on a foundation of quicksand. They cannot be satisfied with the merely empirical status of their "either-or" position.[3] They cannot be allowed to have their cake and eat it too. They are logically compelled to renounce one of their foundational principles. Either they must admit that there can be such a thing as a synthetic apriori statement – something necessarily true, and also pertaining to the real world – or they need to acknowledge that the "either-or" claim is false.

If on the other hand, that methodological statement is analytical, then it is merely vacuously and definitionally true; and hence, it cannot extend our knowledge at all; rather, the statement instructs us only about a terminological convention. In the latter case, it is needless to say that we should care not a whit about it. Any

[2] A unique characteristic of Austrian economics is that such proclamations do indeed exist. For example, whenever voluntary trade occurs, both parties necessarily gain in the ex ante sense; each partner to such barter, values what he receives more than what he yields.

[3] All statement are *either* analytic and thus mere tautologies, *or*, are empirical, and thus sometimes false.

methodological rule that is reducible to purely analytical truth does not merit the former label in the first place.

Let us conclude this section. The challenge of self-reference leaves logical positivists puzzled.[4] If they stick to their methodological rule and self-reference constraint, they have to conclude either of the two, neither of which they would willingly accept for it either makes their meta-rule contingent (empirical and therefore subject to falsification) or empty (because its truth is derived from the stipulative definition, in which case the rule starts to resemble the wordplay and ceases to refer to reality).

There is apparently one saving grace when it comes to evading the principle of self-reference. When a given statement makes use of the universal quantifier, it may be said that the quantifier "every" employed in that very statement does not range over the statement itself. For example, the liar's paradox. When Smith claims that everybody is a liar (technically speaking, for every x, x a person, x is a liar), the only way to evade the famous liar's paradox is to say that Smith's pronouncement is of a different logical type and thus Smith is not another person who the quantifier "every" ranges over. Therefore, Smith could effectively maintain that everybody is a liar but him and thus his statement is rendered logically coherent (See Russell, 1968). Yet, we deem such an attempt as *ad hoc* and desperately designed just to evade the problem it really faces.[5]

3. Self-reference criterion applied to Caplan's probability

Let us gauge Caplan's (2003)[6] position using our touchstone of self-reference. First, when Caplan says that "everything is probability" (…), he should bite the bullet and admit that the quantifier "everything" must also range over the rule itself. Therefore, he must concede that his everything-is-probability[7] statement is also only probabilistically true (its certainty can also be measured on the continuous scale from 0 up to 100% providing it is in terms of certainty that Caplan understands probability). If he does so, he is true to the standard of self-reference and yet, another problem looms large. How is he to determine the probability of any of first-order economic propositions? We posit that he must *discount* their respective probabilities by the probability of his meta-statement.

Therefore, taking into account the above, the probability of any first-order proposition is P_p x Pms, where P_p stands for the probability of a stand alone economic proposition and P_{ms} is the probability of Caplan's methodological statement.

The question might arise why we discount the probability using the algebraic operation of a product. We do not take any firm stand on it, though. The whole point

[4] That is one way of putting the matter. Another, perhaps more correct but less polite, would be "intellectually annihilated."

[5] At this point we put ourselves in a good company for Russell's type-theory "solution" was subsequently demolished by Wittgenstein (1961).

[6] Unless otherwise specified, all references to this author's contribution will refer to this one article of his.

[7] This all-embracing relativism reminds us of the following passage from Ayn Rand. Rand (1957, p. 248). She has James Taggert, one of her villains, stating: "There are no absolutes – as Dr. Pritchett (another of her villains) has proved irrefutably. Nothing is absolute. Everything is a matter of opinion." Caplan would fit in well in Rand's lexicon of villains, with but a slight emendation. Thus, we now say: "There are no absolutes – as Dr. Caplan has proved irrefutably. Nothing is absolute. Everything is a matter of opinion. We cannot assign a probability of 0 or 1 to anything; to any claim, whether tautology, empirical, or synthetic apriori. All (meaningful) statements have a trust value lying somewhere in between these two extremes."

is that whatever the operation is, the probability of the first-order proposition must be discounted by the probability of Caplan's meta-statement in some way or other. Both must always be a fraction, falling somewhere in between zero and one, but cannot take on the value of either. If this author insists that either can take on the value of 1, then he would be willy-nilly advocating the Austrian belief in apodictically true and 100% certain claims. This, he is precluding from doing, lest he give up on his entire position.

Second, the probability is 1 only in the extreme case; that would render Caplan vulnerable to all possible values ranging between zero and one, with 1 being reserved for certainly or apodictically true claims, which apply only to *synthetic priori* statements. Why do we simply multiply the probability of any first-order economic proposition by the probability of the Caplanian meta-statement? This is because it might be plausibly believed that the former is dependent from the latter, and we want to obviate that assumption. The analogy would be the chance of leaving home and winning a jackpot. If and only if leaving home and winning a jackpot are logically independent[8], the probability of a complex event of leaving home and winning a jackpot is the probability of the former multiplied by the probability of the latter. That is a structural analogy of Caplan's predicament. In other words, even if Caplan is quite certain about the truth of a given proposition, he must also reckon with the fact that its probability should necessarily be discounted due to the inescapably probabilistic nature of his second-order statement.

4. What lies behind the Caplanian notion of probability – an exegetical attempt

Caplan is not entirely explicit on the concept of probability but we may venture some interpretations as to how he conceives of probability and whether any of these possible interpretations can be of any help to the author. First, he may understand probability psychologically, that is as a function of the certainty[9] which we attach to a given proposition. Let us first try construing Caplan as holding this psychological account of probability.

Given–that Caplan is a die-hard indifferentist,[10] we can even suggest an "exact" measure for this psychologically conceived probability. Before doing so, let us specify what the applied symbols denote:

outcome X – it rains next day
outcome Y – it is sunny next day
outcome C – there is a plane crash in the vicinity of 100 miles in two days
outcome D – there is a terrorist attack anywhere in two days
C_{prob} – probability of the event C
D_{pro} – probability of the event D
r_1 – the financial reward person B offers if C occurs
r_2 – the financial reward person B offers if D occurs

Let us imagine that ~~a~~ person A is offered two fancy unilateral contracts by a person B, the latter being a devil-may-care altruist[11]: if outcome X occurs, B will pay A \$60, if Y occurs then B will proffer only \$40[12]

[8] As they usually are, and, as we posit in this case
[9] Or lack of confidence for that matter
[10] See on this matter the following Barnett, 2003; Block, 1980, 1999, 2003, 2007, 2009A, 2009B, Block and Barnett, 2010; Caplan, undated, 1999, 2001, 2003, 2008; Hoppe, 2005, 2009; Hudik, unpublished; Hulsmann, 1999; Machaj, 2007; Nozick, 1977; O'Neill, 2010.
[11] With apologies to Ayn Rand

If A is indifferent between the two options, he necessarily –attributes such probabilities to these two outcomes that the ratio of which is the inverse of the ratio of offered payments, that is he necessarily believes that outcome Y is 3/2 times as probable as the other one, that is the probabilities are Y – 60% and X – 40%.

Trivially, in much the same manner as we can infer the expected ratio of probabilities *given* indifference and the ratio of promised rewards, we can deduce the ratio of expected probabilities by *imagining* such a ratio of rewards at which a person is indifferent between the two outcomes. So, let us imagine yet another offer made by person A. Now he presents us with two options: there are two unilateral contracts available, and B can sign only one. The respective financial rewards (r_1 and r_2) are offered by our benefactor B for respective outcomes (C and D). If the Caplananian introspectivist indifferentist wants to find out what are the expected probabilities of outcomes C and D, the only thing he needs to consider is at what rewards for respective outcomes he would be indifferent between signing either of the two contracts. The relevant formula is now:

$r_1 \times C_{prob} = r_2 \times D_{prob}$, or equivalently

$$\frac{r1}{r2} = \frac{D\ prob}{C\ prob}$$

As can be seen from the second equation the ratio of probabilities inversely reflects the ratio of rewards. Then again, to determine what are the expected probabilities, Caplan would have to introspectively judge at what ratio of rewards he would be indifferent between the two outcomes (and effectively: between signing either of the two contracts).

Trivially, our analysis can be extended to real bets, that is to possible gains and losses. So, if persons A and B are now gamblers having a bet and outcome C would now bring a loss to B, and D a gain (here expressed by a positive number), then the psychologically estimated probabilities are reflected in such a ratio between possible gains and losses that we are indifferent between betting and not betting at all. Now to find the probabilities (assuming again that one either gains or loses), we have to solve the following two equations:

1) $D \times D_{pro} - C \times C_{prob} = 0$ the expected value should be null for it would make a person indifferent between betting and not betting at all)
2) $C_{prob} + D_{pro} = 100\%$

And finally, in general terms, if Caplan sticks to a psychological account, then trying to find out what are the probabilities of, say, minimum-wage law and ex-ante mutual gains from trade, he would be well-advised to stick to the following instructions: determine what money he should bet on respective laws so as to be indifferent between the two. Take the ratio between the two and invert it and you arrive at the ratio of the two probabilities.[13] On the face of it, this all sounds like a mockery but far from it – it constitutes a powerful a *reduction ad absurdum.* Conceiving of probabilities in psychological terms in the sanctified area of economics has exactly this grotesque flavor to it. So let us try some other interpretation.

[12] We assume for the sake of simplicity that A and B both cover the whole logical space of possibilities at a given moment and are mutually disjunctive, that is only *one* contract will necessarily come into effect.

[13] One caveat seems to be in order here. We do not believe, unlike Caplan, that this apparent indifference can be ever demonstrated in action. Instead we would relegate the concept to the domain of psychology. This aside section is meant to somehow charitably interpret Caplanian notion of probability.

Is Caplanian probability equivalent to Austrian[14] class probability? It would be quite a stretch to conclude the two are on an equal footing? Why? The latter is concerned with repetitive random non-unique events and it tests the occurrence of a given attribute in a series of potentially infinite homogenous series. In contrast, economics by nature is not about repetitive random events. It is by definitional about purposeful human behaviour. So, alas, Caplan *qua economist* is necessarily deprived of this truly scientific concept of probability.

Our final attempt is to conceive of Caplanian probability of first-order economic propositions as epistemic probability. This bears at least some resemblance to Popperian (1959) level of corroboration. Here, a given hypothesis is the more probable the greater number of tests (aiming at falsifying the said hypothesis) it undergoes; or (as verificationists would have it) the more evidence confirms the hypothesis. But if such a notion of probability is employed, the entire enterprise is that of logical positivism[15] and so the test of self-reference returns with a vengeance. After all, it should be borne in mind that both verificationism and falsificationism maintain that statements can be true two-fold. If they are *a priori*, they must be analytically true. If, on the other hand, they are synthetically true, they are *a posteriori*. There is no room at all for *synthetic a priori* statements in this paradigm. Yet, our touchstone of self-reference wreaks havoc again by posing the same question and leaving this very model vulnerable to a perennial problem: what is the epistemic status of the above-mentioned methodological "either or" rule? Furthermore, interpreting Caplanian probability as epistemic probability has another rather unwelcome side effect. For although, however outlandish it may sound, we can imagine that evidence "verifies" economic laws; by no stretch of imagination can we imagine any evidence corroborating Caplan's everything-is-probability meta-statement. By what possible empirical means can he even try to measure its probability? That is truly beyond any rationality. Epistemic interpretation of Caplan's probability fails on the grounds that it does not apply a uniform criterion; when it comes to first-order economic propositions, evidence confirming the law may account for its probability[16]; no empirical evidence can raise or lower the probability of Caplan's meta-statement.

5. Does Austrianism pass muster?

Does Austrian economics pass our self-reference test successfully? We would not have a successful thesis were this not so. Our view would then be subject to the criticism that we ask of Caplan, and criticize him for not offering, what we ourselves cannot supply. Happily, the answer is 'yes'. First of all, praxeology is purely deductive. It starts with an undeniable action axiom; it affirms that humans act (at least sometimes). If the statement were to be assailed argumentatively, one would be caught in performative inconsistency, that is there would be a glaring contradiction between the content of one's argument (humans do not act) and the very fact that one

[14] Crovelli, 2009, 2010, 2011; Hoppe, 1995, 1997, 2007; Mises, R., 1981; Mises, L., 1998; Rothbard, 1962, 2010.

15 Something explicitly renounced by Caplan (2003).

[16] Not surprisingly we do not share the view that it is evidence that verifies economic laws. We are rather inclined to interpret the evidence through the lenses of apodictic economic laws. What is more, we firmly believe that e.g. minimum-wage law would hold despite the lack of any evidence; nay, it even holds in the world of no wages. It is because the said law is conditional: *if* the minimum wage is artificially increased, *then* marginal workers become sub-marginal workers, which is nothing else but the rise of unemployment. Austrians would recognize this truth even if there has been no evidence whatsoever of the effects of raising the minimum-wage.

has made an argument in the first place (argument being obviously an instance of action). That is to say, the very act of denying human action is itself an act.

That is why the action axiom has this character of an axiom. Its truth cannot be denied without violating logic. And this is the only proper point of departure for the entire field of economics, the project being so brilliantly illuminated by Mises (1998). It follows inexorably that whatever is logically deduced from an apodictically true axiom is necessarily true itself.[17] The problem of discounting the probability of economic propositions does not ~~even~~ apply here. The whole edifice of Austrian economics is simply pervaded by probability 1; so, there is simply no room for any ranging within 0 and 1.

6. Let us attempt to demonstrate how truly radical and illogical is Caplan's position in a different way. Above, we mentioned the synthetic apriori claim that when voluntary trade takes place each party must expect to have his welfare position improved thereby. If Caplan is to stick to his (intellectual) guns, he must acquiesce in the notion that while such a claim is probably true, it is not necessarily the case. Suppose A gives an apple to B in return for a banana. The Austrian view on this is clear. If this is a case of voluntary barter, A values the banana he receives more than the apple he gives up, and B ranks these goods in the opposite order. But suppose neither is true. That is, A really likes his apple more than the banana he receives, he just wants to get on the good side of B by making this trade; he thinks that will butter up B for other purposes. Would that improbable scenario serve to save Caplan's bacon? Not at all. For, the Austrian insight is that there is *something* about the banana he imports that A favors more than the apple he exports. It need not be the quality of the fruit. His motive could be the very one we are considering. We offer this challenge to Caplan: show us why the Austrian analysis does not have a probability of 1, to put this matter in Caplanesque language. Namely, it is necessarily true.

If we take Caplanania to its logical conclusion, he would deny that the assertions "ten is a higher number than nine" or "two plus two equals four" have a probability of 1; that is, that they are necessarily and apodictically true. Yes, yes, we all know about Descartes (1901) and his claim that we are all now dreaming. Modesty, after all, does become us. The present authors do not wish to take issue with this philosopher. We only maintain that it is important to distinguish empirical claims such as "it is now raining" from those mentioned in this paragraph which belong in the realm of pure logic. Caplan's theoretical construct does not allow him to even make such primordial distinctions. As far as economics is concerned, yes, we might all be dreaming. But this would not obviate the distinction rejected by Caplan. Incidentally, even "dreaming" cannot really work against our position for we interpret economic laws as holding objectively and universally, albeit conditionally.[18]

[17] It might be objected that Austrian economics sometimes employs empirical premises rather than limiting itself, purely, to those that are *a priori*. E.g. Misesian disutility of labour and the positive value of leisure. Whether these are truly contingent (that is, they might be otherwise) or they simply stem from the nature of humans as they are at this stage of evolutionary development is of little importance here. The fact is that these are fairly uncontroversial and one would be inclined to assign probability 1 to them. Moreover, praxeology can do quite well, thank you, without these assumptions. They do not at all besmirch the Austrian project; rather, they apply it to the real world in which they fully, albeit not necessarily, obtain.

[18] Let us fully reveal our hand. In fact, our view on economics is akin to our view on logic. Logic is true in all possible worlds. 2+2 is necessarily equal to 4 although there are such possible worlds in which there are no discreet entities and therefore there is nothing to count. In a possible world in which

Let us attempt to employ Descartes in a different way in criticizing Caplan. Who says that there is a probability of 1 for analytic statements? Our author cannot even go that far out on a limb. Caplan's theory is thus a recipe for radical skepticism. He might even doubt his own existence, for all we know; we doubt he would assign a probability to that claim of 1.

7. Conclusions

We believe this paper has conclusively demonstrated—that Caplan's methodological standpoint is caught in an insuperable predicament. It either does not meet the self-reference criterion, in which case his methodology fails to address the problem any respectable methodology should; or if it does, Caplan runs into the problem of further discounting his already merely probable first-order propositions of economics, in which case his certainty (be it psychological or epistemic) about them becomes even more unsustainable On the positive side, we suggest the methodology of Austrian economics, by being purely deductive, meets the self-reference requirement smoothly and is free from the probabilistic murkiness haunting the Caplanian position.

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humans (or maybe something resembling humans) do not act, praxeology would still be true (even if only conditionally true, that is if humans act, then Austrian economics follows). Or to give a more down-to-earth example, everything on this planet falls down with the acceleration of 9.80665 m/s2. This physical law holds even if nothing has ever -(counterfactually speaking) plummeted.

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