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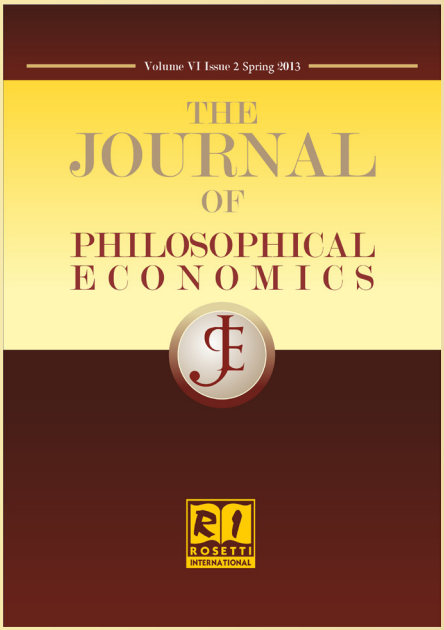

Subjective preferences and alternative costs

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Abstract: The present paper is an exploration of the economics of subjectivism and opportunity or alternative costs. Most contemporary economists pay lip service to these concepts, but when push comes to shove, all too often they jettison them. We shall illustrate this lapse from basic economics with a challenge that has been perplexing several modern economists: why do people always walk on staircases, but only sometimes on escalators. Landsburg (2002) misunderstood the reason people only sometimes walk on escalators, whereas they always walk on stairs. Garrison (2009) tackled the same problem, with somewhat different results. Both of them, however, are guilty of a failure to use what is perhaps the most fundamental concept in the economist's toolkit – opportunity cost, known to an immense number of non-economists by the aphorism 'There's no such thing as a free lunch.' This oversight resulted in his (their) failure to explain why people only sometimes walk on escalators, in contradistinction to the fact that they always walk on staircases.

Keywords: indifference, opportunity costs

Introduction [1]

Some very prestigious economists puzzled about a rather unimportant issue: why it is that people always walk on stairs, but only sometimes on escalators. It is our contention that they failed in their attempt to explain this phenomenon because they forgot some very basic economics: subjectivism and opportunity costs. While the specific example is not important, the underlying economic principles most certainly are.

To wit, Landsburg (2002) wrestled, unsuccessfully, with the 'challenge' of why people always walk on staircases, but only sometimes do so on escalators [2]. So as not to keep our readers in suspense, his risible answer, as rephrased by his colleague Mark Bils, is:

> Compared to an escalator, a staircase is an inferior machine, so the 'workers'— that is, the people who use the stairs— should try to minimize their time there. The way to limit your time on a staircase is to keep walking until you get to the end.
>
> The same argument proves, incidentally, that even if you choose to walk on the escalator, you should always walk even faster on the stairs. (Landsburg 2002, pp. 10- 11)

In contrast, the proper response to this question has to do with subjective opportunity costs (Barnett & Block 2008). Landsburg is not an economist who takes subjectivism seriously, so he may be forgiven for not understanding the power and imperatives of subjective alternative or opportunity costs; his reliance upon ostensibly-objective efficiency considerations to deal with this vexing problem of the day is entirely understandable.

But it is entirely another matter that Garrison (2009) falls victim to this error, since he does take subjectivism and alternative costs seriously in his (2001) and other writings. Moreover, he compounds Landsburg's mistake with one of his own; to wit, he employs indifference curves and budget lines. This is highly problematic in that Garrison is an Austrian economist, indeed, one of the leading practitioners in this field now still active. For him to use indifference curve 'analysis,' without even noting the numerous methodological objections to the entire procedure, is indeed more than passing curious [3].

Notice in the above quotation the quotation marks about the word 'workers'. In this case they are intended to inform the reader of the non-standard usage of the word. Casual empiricism seems to indicate that many (most?) users of escalators and stairs are not workers; i.e., not to be categorized as labor, but, rather are people acting in their role as consumers. But of what import is this? To the extent that the relevant individuals are consumers, stairs and escalators must be seen as consumer goods, not capital goods, and thus this soi-disant magnificent explanation in terms of workers minimizing their time spent with the inferior machinery, stairs, even if correct (which it is not), is irrelevant. Moreover, it is not at all clear what is meant by inferior machinery. If it is taken to mean technologically inferior, it is by no means clear that escalators are technologically superior to stairs in all circumstances. Certainly, if nothing else they normally require more downtime for maintenance.

If it is taken to mean economically inferior, then one is left to ask what relevant decision maker is trying to achieve. No doubt in many, if not most, situations, stairs are economically superior to escalators.

An analogous explanation re consumers would require that stairs be seen as inferior consumer goods. Of course that raises the whole issue of the meaning of an inferior good. The standard definition is a good whose income elasticity of demand is negative; i.e., it has to do with how a buyer's demand is affected by a change in his income. But in the case under consideration, changes in buyers' incomes are irrelevant, in that they are (implicitly) assumed to be unchanged. The meaning of inferior machinery (or capital goods) is not defined in the literature, save where Malthus, as quoted in Ricardo (1911/1821, p. 279) uses the term to refer to less productive land.

At the beginning of virtually every microeconomics text book there is a song and dance about how the essence of cost, for the economist, is foregone opportunities. And what are these? Allegedly, it is the (subjective) value assigned by the actor to the next best option that the economic actor could have engaged in, had he not chosen to do what he did indeed do. In other words, the cost of doing any act A, is the value of the act B that now cannot be undertaken, because A was indulged in, where, had the actor not done A, he would have done B. As such, no one can ever know anyone else's costs, as these are necessarily subjective. States Hayek (1979, p. 52): 'And it is probably no exaggeration to say that every important advance in economic theory during the last hundred years was a further step in the consistent application of subjectivism.'[4] There are two levels to the subjectivity. First, only the individual actor himself knows what he thinks he would have done had he not done what he did. And, second, only the individual knows the value he assigns to the action he thinks he is foregoing. For *anyone else* to claim knowledge of these costs is hubris beyond belief. At best one may empathize with another.

And yet, what do we behold several chapters later, when the topic of costs next rears its ugly head, and there is an attempt to 'get behind' supply curves. In fact, the so-called cost curves and their equations are measured in objective pecuniary terms.

That is, they are shorn of all vestiges of subjectivism, or opportunities foregone. They have nothing to do with costs as subjective values of alternatives not undertaken. Rather, they are objective, right there on the page, for all and sundry to espy. It is on the basis of them that we can generate such 'measurable' phenomenon as, for example, dead weight loss.

So much for cost. What is our objection to indifference curves? [5] Simply this: indifference is incompatible with human action. For economic activity to take place, trade, barter, purchases, sales, etc., there can be no such thing as indifference. (This is not to denigrate the *psychological* phenomenon of indifference, where, e.g., one says I am indifferent between A and B. It is only to note that such a feeling is irrelevant to economics as this discipline is concerned with human action, and every action necessarily exhibits preference, not indifference.) Rather, there must be *preference*. That is, each party to the commercial engagement must *prefer* what he is to receive compared to what he must give up. If A trades an a to B, in return for the latter's b, then A must *prefer* b to a, and B must make the opposite evaluation, namely, *preferring* a to b.

With this introduction, we are now ready to consider in detail Garrison (2009), which is the burden of sections II and III. Section III is concerned with some mathematical objections to Garrison's analysis; i.e., indifference curves being necessarily mathematical in nature, these attack his analysis on its own; i.e., mathematical, ground. We conclude in section IV.

Garrison

Garrison (2009, 1, figure 1) combines the worst of several elements: mainstream objectivity vis a vis praxeological subjectivity, neo-classical indifference curves rather than subjectivist preferences, and, a la Landsburg, superior machines indicating greater wealth than inferior ones. This latter is our interpretation, not Garrison's, of why the budget line for 'escalator' is placed to the right of the one for 'stairs.' In his view, this concatenation is based on the fact that you can travel faster on the former compared to the latter. Well, so you can, at least usually. But, it is *also* compatible with Landsburg's story of the escalator being a more advanced machine than the stationary one, as an explanation of why the former is preferred to the latter.

And what is Garrison's explanation of why people prefer escalators to stairs, and moving walkways to those that stay put? Why, it is because you can reach a higher indifference curve in that manner! But, given that the *reason* for this is that the budget line for the escalator is everywhere to the right of the one for the stairs, his and Landsburg's explanations are entirely compatible with one another, not to say identical.

Garrison (2009, 1) also buys into another fallacy of Landsburg's: 'Landsburg's answer ... involves taking escalators and stairs to be instances of inferior and superior machines. Just as workers should spend less time with an inferior machine, people should spend less time on stairs. Well, all right, standing still on stairs clearly violates that maxim.'

There are several problems here. First, not only does *standing* on stairs violate the maxim of always preferring superior to inferior machines, but, so does *walking* on them. Whether the actor is stationary or mobile, stairs, presumably, are *equally* inferior to escalators. Secondly, it is by no means clear that it is economically wise or efficient to *always* eschew the older, less efficient or stodgier machine, in favor of the newer, more efficient or 'cooler' one. That is, there is confusion in analysis here. It arises because different disciplines have different concepts of efficiency. Assuming that both Garrison and Landsburg are referring to some form of engineering efficiency, that concept is irrelevant for economic analysis, save as the two are correlated in a specific case. The airplane, presumably, is superior to the car; yet, the latter beats the former for trips of less than, oh, 30 miles. The automobile has it all over the bicycle. Yet, in traffic-congested cities, the bike soundly beats the car in terms of getting around quickly. And, this is to say nothing of the calories burned the exercise for the heart undertaken, and the pleasures of riding around in a park. Similar points could be made for rowing versus motor boating. As well, if it were true that we should prefer 'better' to 'worse' machines, then none of us would use ordinary tooth brushes when we could have electric ones, television sets when we could avail ourselves of reading books (hard copy books, that is), or massages from human beings rather than the ones furnished by machines.

But a more basic problem with Garrison's (2009) support of Landsburg (2002) is that, as we say in a previous publication (Barnett & Block 2008): 'The stairs are *not* an inferior machine to the escalator; 'superiority' and 'inferiority' depend, crucially, on the subjective preferences of those who use them.' Yes, a car beats hell out of a bicycle technically, from an engineering point of view, in terms of complexity, etc. But since when do these characteristics constitute *economic* considerations? Certainly, they do not for a subjectivist, of the sort we would have expected Garrison to be.

Mathematical considerations

Garrison attempts to deal with the issue in a different (one is almost tempted to say 'in an indifferent') way by using a standard mainstream/neoclassical tool, indifference curve analysis, in the hope of not only of shedding light on the matter, but also as a means to develop students' facility with that analytical method. To that end, he draws an indifference map and budget curves in a two-dimensional space. Each indifference curve measures different combinations of quantities of the variables measured along the axes among which an individual is indifferent. Any attempt to aggregate indifference curves of different individuals fails for reasons of logical inconsistency. Consider two individuals, A and B, and two goods, x and y. A is indifferent at *his* level, say, 11 (whatever that may mean) between the bundle A1 = (10 x, 5y) and A2 = (5x, 10y). Make the assumption (obviously extremely favorable to an attempt to aggregate indifference curves) that obviously B, also, is indifferent at *his* level 11 between bundles B1 = (10x, 5y) and B2 = (5x, 10y). However, because utility is both subjective and ordinal in nature, utility levels between (or among) individuals are incommensurable. That is, there is no possible way to make *valid* interpersonal utility comparisons. Assuming, arguendo, that such is not the case and that A's utility at his level 11 indifference is equal to B's utility at his level 11 indifference, still does not allow us to aggregate the indifference curves. Aggregate bundles A1 and B1 by summing the components yield bundle A1/B1 = (20x, 10y) and similarly for bundles A2 and B2 to yield bundle A2/B2 = (10x, 20y). We then ask, what does it mean to say that both A and B are indifferent (each at indifference level 11?) between bundles A1/B1 and A2/B2? Obviously, even under our strong assumption, it means nothing, save in the case that we make the further strong assumption that the distribution of x and y between A and B is unchanged. But this violates the principle of intransitivity, a necessary principle for indifference curves, because any given point in x-y space may be on any of an (assuming as mainstream economists do, infinitely divisible goods – quite a hoot, that) infinite number of aggregate indifference curves. The dimensions he uses are 'resting' and 'moving [toward ultimate destination],' measured along the vertical and horizontal axes, respectively. Now it is not at all clear what the relevant units of either the resting or the moving dimensions are.

Indifference curves are based on utility functions [6]. Each indifference curve consists of the locus of points generated by setting the utility function equal to a constant. Therefore, a different indifference curve is generated for each value of the constant. The slope of the indifference curves; i.e., the marginal rate of substitution,

for any utility function is derived by taking the differential of the function, setting it equal to zero, and solving for the derivative of one of the arguments with respect to the other. (This holds true regardless of the number of arguments in the utility function, save that we would be speaking of indifference surfaces instead of curves, if there were three or more of them.) Consider the implicit utility function behind Garrison's indifference curves; to wit: $U = f(R, M)$ where R is resting and M is moving. Because the indifference curves are convex R and M are necessarily 'goods,' not 'bads.' (If we assume that beginning from a quantity of zero, an increase in the amount of something, ceteris paribus, increases one's utility the thing is a good. However, if one acquires so much of the good that an additional unit would reduce one's utility, the thing becomes a bad at that quantity. For negatively sloped indifference curves there are only two possibilities – either the curve is convex or it is concave. Convexity implies both things are goods; concavity, that they are both bads.) Thus, we are to assume that one receives utility from both resting and moving. [7] (Why, in the context of stairs or escalators, either moving or resting would, to use Mises's expression, remove felt unease, or a more standard phrasing, increase want satisfaction, is not at all clear. Rather, we suspect, when one is on an escalator or stairs there is some purpose other than resting or moving; e.g., arriving at a chosen destination within some time frame, that is the source of utility.) At first blush, one might think the unit for resting would be some measure of time, say a second, however, Garrison states that 'moving slowly entails a degree of resting,' and, the 'budget constraint' when there is 'zero rest' has 'our stair climber racing at maximum speed.' This would seem to indicate that, although displayed as orthogonal to each other, the resting and moving dimensions are not independent. Mathematically, we could state this as $R = g(M)$ (or $M = g^{-1}(R)$), where $dR/dM < 0$ [8]. Then: $U = f(g(M), M)$ or $U = f(R, g^{-1}(R))$; i.e., utility depends on only one of the variables – take your choice – thus there are no indifference curves. The problem arises because the arguments of the utility function are not independent of each other. This problem would not have arisen had Garrison measured both rest and moving in units of time. Nor would it have come about had he not posited an inverse relation between the amount of rest and the speed of movement. Moreover, the difficulty cannot be resolved by taking movement to be measured as some combination of speed and time; i.e., $M = f(S, T)$ where S and T are speed and time, respectively. Consider that in order to be correct in terms of dimensions neither S nor T may appear alone in any term on the right hand side (rhs) of the function, as the units of S and T are incommensurable and, therefore, may not be added or subtracted.

Therefore, the only possibility is for the rhs term(s) to be, excluding constants and powers, either S·T, S/T or T/S. As S is measured in units of distance per unit of time; e.g., meter/second = m/s, and time is measured in s, we are left with M = f((m/s)·s) = f(m), or M = f((m/s)/s) = f(m/s^2), or M = f(s/(m/s)) = f(s^2/m). That is, each term on the rhs must be in terms either of m or m/s^2 or s^2/m. [9] But these are, obviously, merely the units of distance, acceleration, and the reciprocal of acceleration, respectively. [10] This presents a problem. First, if we take M = f(m), M (moving) is merely a synonym for distance and therefore there it is logically incorrect to equate the point of maximum distance with the point at which 'our stair climber [is] racing at maximum speed.' Next, acceleration necessarily involves either a change in speed or a change in direction. But as direction is ruled out in Garrison's example, M is measured as a change in speed – m/s. Therefore, running up the stairs or escalator at a constant speed would necessarily involve either the point M = 0 or the 'point' M = ∞, as the function involved the units of acceleration or its reciprocal, respectively. This is sheer nonsense. But it is the kind of nonsense that almost always arises when one tries to model human action using mathematics.

Garrison also develops a budget constraint. It is not at all clear what the dimensions and units of the budget constraint are, although he assumes that: 'For a given increment of time spent on stairs or escalators, resting and moving are the two alternatives.' [11] Thus it seems that the budget constraint is in terms of time, say seconds (s), with different constraints representing different periods of time. It is interesting that in his various figures Garrison displays budget constraints for a set of stairs, a (standard-speed) escalator, a slow-moving escalator, a walkway and a moving walkway, but never explains the nature of the gain from being on a higher budget constraint. He does say that that the constraint for the escalator is shifted to the right 'to take into account the speed of the escalator.' And that in his particular example, the 'gain [because of the shifted constraint] is taken partly in the form of more rest and partly in the form of more speed.' But that would indicate that it is speed, not moving, that is measured along the horizontal axis. That would require a budget constraint of the form: T(s) = R(s) + aS(m/s), where the units of a are m^{-1}s^2 (i.e., the reciprocal of the units of acceleration) in order to make it mathematically coherent in terms of units. That is, the budget constraint would have to be an amount of time. And, that time would be split between time resting and time moving, the latter measured as speed divided by acceleration. Assuming one moves in a straight line whether on stairs or on an escalator, acceleration would be zero whenever one stood still on an escalator or ran at a constant speed either on the stairs or escalator. Exactly what an acceleration of 0(m/s^2) would mean in terms

of the budget constraint is beyond us. In other words, the budget constraint makes no sense.

Moreover, this constraint is assumed to be linear. Construct the budget constraint as follows: $T = T_R + T_M$, where T is the time constraint and T_R and T_M are the amounts of time spent resting and moving, respectively. But this does not seem to square with Garrison's dimensions. He states that at one extreme the budget constraint intersects the resting dimension at the point where the individual is standing [still] and moving equals zero; whereas at the other extreme the budget constraint intersects the resting dimension at zero rest and the moving dimension where the 'stair climber [is] racing at maximum speed.' He also states that, assuming one can run down stairs faster than up, that the constraint would intersect the moving dimension that would lie 'further to the right,' without telling us exactly what that means. That is, his moving dimension seems to be in some term(s) other than that of pure time. Does he mean that the units of the moving dimension have something to do with speed? [12] He does use the expression 'maximum speed.' Does that mean that moving should be measured in, say, meters per second (m/s)? If, in fact, both the budget constraint and resting are measured in units of time and the moving dimension in terms of speed, then the budget constraint equation will not pass the test of dimensional analysis (Barnett 2004), as it is mathematically invalid to add a quantity of time to a quantity of speed. This could be remedied by some assumption that would relate speed (itself a relation between distance and time) to time, but none is evident in the text.

Conclusion

In view of the foregoing, we cannot see our way clear to agreeing with either Landsburg (2002) or Garrison (2009). In our view, the solution to this truly important crisis lies in the direction of alternative or opportunity costs; it is not based upon superior or inferior machines, nor can indifference curves help us out of this morass, even if there were nothing objectionable about this traditional mode of analysis, which there certainly is. We acknowledge Garrison's (2009) creativity in breaking new ground for indifference curve analysis, but cannot accept his innovations.

Acknowledgements

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Endnotes

[1] If a picture is worth 1,000 words, then a moving picture must be worth at least 10,000. On this, see: http://www.youtube.com/watch?v=2lXh2n0aPyw&feature=email.

[2] Is it possible that the present paper 'deals with an insignificant problem (e.g. the 'escalator economy' can hardly be accepted as a concept worth debating) and it does not provide any fundamentally new insights into economic theory?' We reject this possible criticism of the present paper. Yes, it cannot be denied, there is no such thing as an 'escalator economy.' (There are of course escalators, but there is no 'economy' of them in the sense that it is a burning issue as to whether one should walk on them or not). But does that undeniable fact render discussion of it 'as a concept (not) worth debating?' We deny this. When high profile economists such as Landsburg and Garrison reason erroneously about this phenomenon, when the entire economics department of the University of Rochester is in a quandary about it, then, we aver, it is a concept very much worthy of debate. We also readily admit that the present paper 'does not provide any fundamentally new insights into economic theory.' Indeed, we the present authors pretty much confine ourselves to very old and creaky concepts such as subjectivism, alternative or opportunity costs. But is it required that every publishable paper break new theoretical ground? Cannot some trees be felled (electrons corralled) in the effort to correct mistakes of eminent economists by use of hoary and traditional concepts? We argue in the affirmative, here.

[3] Caplan (1999) has launched an important critique of the methodology of the Austrian school (the unpublished (undated) version of this paper was called: 'Why I am not an Austrian economist.') Caplan has been severely rebuked in Block (1999, 2003, 2005, 2007); Callahan (2003); Carilli and Dempster (2003); Hoppe (2005); Hulsmann (1999); Machaj (2007); Murphy (2008); Murphy, Wutscher and Block (2010); Rajsic (2010); Stringham (2001, 2010); Stringham and White (2004). Caplan has replied in these publications (2001, 2003, 2008).

[4] For more on subjectivism, see Block (1988); Buchanan (1969); Buchanan and Thirlby (1981); Mises (1998).

[5] There is by now a large literature on this issue. It includes the following: Barnett (2003); Block (1999, 2003, 2007); Callahan (2003); Herbener (1987); Hoppe (2005); Hulsmann (1999); Machaj (2007).

[6] For a direct attack on the concept of utility functions, see Barnett (2003).

[7] Why, in the context of stairs or escalators, either moving or resting would, to use Mises's expression, remove felt unease, or a more standard phrasing, increase want satisfaction, is not at all clear. Rather, we suspect, when one is on an escalator or stairs there is some purpose other than resting or moving; e.g., arriving at a chosen destination within some time frame, that is the source of utility. For more on convexity in indifference curves, see Block and Sotelo, 2012.

[8] Of course, because economics is concerned with human action, and thus the choice of means to an end, it is necessarily concerned with cause and effect. But the mathematics tells us nothing of cause and effect, so either formulation, while satisfactory from that perspective, is not from the point of view of economics.

[9] Of course, each term on the rhs could be raised to a power; e.g., m2 or m3.

[10] Note that acceleration is vector, not a scalar; however, the terms m/s2 and s2/m are not directed and are, therefore scalars. That is, M is a scalar, despite the fact that it might have the units of acceleration, a vector, because it is not directed.

[11] We are told that resting is not an all or nothing condition.

[12] Maybe direction should be a consideration here, since movement implies some desire to move from one location to another location 'more greatly preferred' for some reason. We owe this point to a referee of this journal.

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