CHOICE AND INDIFFERENCE: A CRITIQUE OF THE STRICT PREFERENCE APPROACH

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ABSTRACT: We examine the strict preference approach to the interpretation of human action and the assertion that a choice cannot be made between actions in which the actor is indifferent to the outcomes. We show that this view is incompatible with decision problems involving equally optimal actions and we examine various attempts to avoid the existence of these decision problems. We argue that attempts to avoid these decision problems are contrary to the causal-realist approach and lead to unnecessary confusion about the nature of choice and indifference. We show that the alternative approach of using non-strict preferences allows indifference to be given a praxeological interpretation and derived directly from non-strict preference relations as a praxeological category. This leads to a sensible approach to economic analysis that is compatible with the causal-realist approach of the Austrian school. This also avoids the attendant problems of the strict preference approach and allows decision problems to be described in accordance with ordinary language.

Indifference and choice are surprisingly tricky issues in economics. They have been the subjects of much debate, particularly within the literature of the Austrian school. At the core of the matter is the

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question of whether indifference has any praxeological meaning or whether its meaning is purely psychological, a matter which falls outside the domain of economics. This question has important ramifications, at least for the proper exposition of economic theory. Since praxeology is concerned with intentional action, a praxeological concept of indifference has implications for the relationship between indifference and choice. Most particularly, it determines whether choice of an action contradicts indifference between that action and other foregone actions.

The praxeological conception of indifference between actions is naturally suggested by the subjective theory of value expounded by Carl Menger, which stresses that goods attain value—and therefore equality or inequality of value—only through their serviceability to our needs. According to Menger (2007):

> In the value of goods, …we always encounter merely the significance we assign to the satisfaction of our needs—that is, to our lives and well-being. If I have adequately described the nature of the value of goods, if it has been established that in the final analysis only the satisfaction of our needs has importance to us, and if it has been established too that the value of all goods is merely an imputation of this importance to economic goods, then the differences we observe in the magnitude of value of different goods in actual life can only be founded on differences in the magnitude of importance of the satisfactions that depend on our command of these goods. (pp. 121–22)

This suggests that a praxeological conception of indifference between actions must be understood in terms of equality of the magnitude of importance of the satisfactions of needs obtained by these different actions. That is, we are *indifferent* between two actions when we judge that there is no difference in the magnitude of the satisfactions of needs obtained from those actions (the actual *needs* may be different, but the *magnitude of the satisfactions* from these needs must be equal). Similarly, we are indifferent between two goods when we judge that there is no difference in the magnitude of the satisfactions of needs that depend on our command of those goods.

In addition to a praxeological conception of indifference, the subjective theory of value can also be used to obtain a praxeological conception of homogeneity. This approach was recently expounded in Machaj (2009) where the author explains:

> How can we define homogeneity in this framework? It's very easy—two objects are homogeneous if they both can serve the same end. If so, it follows these are two units of the same supply, because they are capable of satisfying the particular need. From the point of view of an actor's particular need they are *homogeneous* and *interchangeable* or *equally serviceable*. It does not have anything to do with psychological considerations or physical characteristics, but rather with the possibilities of action….

> This solution rejects the neoclassical concept of indifference and saves the concept of homogeneity. … All this solution offers is the concept of homogeneity in the Mengerian tradition without falling into the murky waters of psychology. (pp. 234–35; some emphases removed; spelling corrected)

Under this approach, homogeneity and indifference are both praxeological and are directly related in praxeological terms. Different goods are homogenous if command of those goods allows the satisfaction of the same needs. Since value is derived solely from this satisfaction, this means that homogeneity implies indifference, though the converse is not true (i.e., it is possible to be indifferent between goods that are not homogeneous).[1]

Now for the tricky part: While the praxeological conception of indifference and homogeneity might seem perfectly natural for followers of the Austrian school, it implies that choices can be made between indifferent alternatives, something which flies in the face of the preference theory maintained by many eminent Austrian school economists. It is clearly possible for different goods to be equally serviceable to our needs, and for us to judge them so. Moreover, it would seem to be possible to make choices between these goods (later we will consider and refute an argument denying this). But if this is the case, then a praxeological conception of indifference and homogeneity implies that choice between indifferent alternatives is possible—in fact, it would appear to occur very often.

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[1] The fuller quotation of this part of Machaj (2009) shows that he uses indifference and homogeneity interchangeably, and thereby defines indifference between goods as homogeneity. In fact, indifference between goods is a more general relation, since two goods may serve different needs, but may do so in such a way that the magnitudes of the satisfactions of those different needs are equal. In this case, a person would be indifferent between goods that are not homogenous.

STRICT AND NON-STRICT PREFERENCE ORDERINGS

The possibility of choice between indifference outcomes is accommodated within the general framework of standard mathematical expositions of preference and action. These presentations use the concept of a "preference ordering" on a set of possible outcomes of action, where this ordering is interpreted as meaning that certain outcomes are regarded as "no worse than" other outcomes, with respect to the *ex ante* preferences of the decision maker.[2] Action by the decision maker then establishes the existence and direction of these relations, in that it establishes that the outcome of the chosen action is no worse than the outcomes of the actions which were foregone—this is the law of "revealed preference".

Under this approach, the primary relation established by action is the "no worse than" relation, which is the absence of a strict preference contradicting the action taken. This relation is an example of a *non-strict* preference ordering (also sometimes called a *weak* preference) in that it includes the possibility that the decision maker is indifferent between the chosen action and one or more foregone actions. Strict preferences and indifference between outcomes are then regarded as derivatives of this primary relation, and can be explained in terms of this relation (the standard mathematical presentation of this subject is given in the Appendix).

One plausible alternative to this non-strict preference approach, and the one adopted by many eminent Austrian school economists, is to treat action as demonstrating a *strict* preference for the chosen end (also sometimes called a *strong* preference). That is, to take an action in pursuit of some end as meaning that the outcome pursued is regarded as strictly "better than" other outcomes which were not pursued, again with respect to the *ex ante* preferences of the decision maker. This position denies the possibility of choice between actions in cases where the actor is indifferent between the outcomes.

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[2] Throughout this paper, I leave out discussion of uncertainty as to the outcome of the actions, or other complicating factors, which do not change the nature of the argument. For the purposes of the discussion of indifference and preference, a reference to the "outcomes" of an action is a reference to the *ex ante* expected outcomes, from the point of view of the actor, with all uncertainty and other complicating factors taken into account.

THE AUSTRIAN SCHOOL APPROACH
TO INDIFFERENCE

It is unclear whether the strict preference approach is the established Austrian school viewpoint or not. Mises (1998) does not appear to explicitly consider the distinction between strict and non-strict preferences in his analysis of human action, saying only that "[s]trictly speaking the end, goal, or aim of any action is always the relief from a felt uneasiness" (p. 93).[3] Some incidental remarks that could be interpreted as support for the strict preference approach are found in Mises (1980), though these remarks are ambiguous and are also *obiter dicta*.[4] Whatever Mises view of the matter, the strict preference viewpoint has been adopted by some later Austrian school economists. In particular, Rothbard (1997) explains the theory of action and indifference as follows:

> Indifference can never be demonstrated by action. Quite the contrary. Every action necessarily signifies some choice, and every choice signifies a definite preference. Action specifically implies the contrary of indifference…. If a person is really indifferent between two alternatives, then he cannot and will not choose between them. Indifference is therefore never relevant for action and cannot be demonstrated in action. (p. 87)

This strict preference conception of human action has also been explicitly adopted in Hoppe (2005) and Block (2009a) in debate over preference and indifference, with both authors referring with approval to the Rothbardian view.

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[3] It is not surprising that Mises did not analyze this distinction, given that it became most obvious during the later rise of the foundations of mathematical economics in the late fifties and early sixties (see, e.g., Debreu 1959). It was in these mathematical systems that the derivation of indifference from preference orderings, and the distinction between strict and non-strict orderings became most clear.

[4] In arguing against Irving Fisher's indifference analysis, Mises talks about an example of an individual faced with a choice of goods who "...finds it impossible to decide between the two, *i.e.* he values both equally" (p. 56). This could be interpreted as a statement of the strict preference approach, or it could be interpreted merely as meaning that the inability to decide *implies* indifference, but is not necessarily *implied by* it. Moreover, in the context of the argument (a critique of cardinal utility) it is not clear whether Mises had the distinction between strict and non-strict preferences in mind *at all*. What *is* certain is that he is less clear on the subject than Rothbard, who confronts the distinction explicitly.

As we have seen, the denial of the possibility of choice under indifference contradicts the use of a praxeological conception of indifference and homogeneity. This opens up the question of whether or not indifference is a tool that can properly be used in the Austrian school's theory of economics at all. Rothbard is in no doubt about the answer, saying: "[t]here is …no role for the concept of indifference in economics or in any other praxeological science" (Rothbard 2004, p. 307). But this presents a potential problem: that of forming the notion of homogeneity, and the consequent notion of "units of a commodity." Nozick (1977) criticizes the Austrian school for their allegedly *implicit* use of indifference in this task (see also Caplan 1999):

> …the Austrian theorists need the notion of indifference to explain and mark off the notion of a commodity, and of a unit of a commodity. … Without the notion of indifference, and, hence, of an equivalence class of things, we cannot have the notion of a commodity, or of a unit of a commodity; without the notion of a unit ("an interchangeable unit") of a commodity, we have no way to state the law of (diminishing) marginal utility. (pp. 370–71)

This critique presents a serious challenge to Austrian school economists who adopt the strict preference view. If it is correct, it requires that they either reverse their position on indifference, or abandon the notion of homogeneous goods and the entire marginalist revolution of Menger.

Nozick's critique has been taken up in previous analysis in Block (1980), Hülsmann (1999), Hoppe (2005), and in recent debate in Block (2009a) and Hoppe (2009). It receives further attention in Block (2009b) where the author rejects the praxeological conception of indifference and homogeneity, admitting that "If homogeneity is praxeological, if it is really equally serviceable, then Nozick and the critics are correct; Austrians must jettison either the law of diminishing marginal utility, or, embrace indifference" (pp. 69–70).

While the responses contained in these papers have been useful in clarifying some ways in which one can proceed from the strict preference approach, the result, as this paper will argue, has been to construct a rather strange interpretation of indifference and choice, consisting of assertions about choice and action that are contrary

to the plain meaning of the terms and contrary to the Mengerian causal-realist approach which exemplifies the Austrian school.

It is the purpose of this paper to argue that the root of the problem is that the strict preference approach adopted by Rothbard and subsequent Austrian school economists is mistaken and the non-strict preference approach is correct—that is, that people can and *do* choose between alternatives to which they are indifferent. This view leads to a praxeological conception of preference and indifference under which neither is the primary relation established directly from action. Instead the primary praxeological category established by action is a judgment of *non-preference* for one action over another, as is used as the basis for standard mathematical models of preference and indifference. Strict preference and indifference can then both be derived through consideration of various combinations of non-preference, and can both properly be regarded as praxeological relations. While non-preference is observed directly, strict preference and indifference cannot be inferred solely from observed actions and must instead be inferred counterfactually.

EQUALLY OPTIMAL MUTUALLY EXCLUSIVE ACTIONS

To establish this claim, let us first consider the basic process by which hypotheses can be tested, and accepted or rejected. The essence of this process is built on the fact that contradictions do not exist in reality, so that any contradictory finding manifests an error. Thus, if one begins with several mutually exclusive hypotheses, and the law of non-contradiction, one can deductively eliminate false hypotheses by determining when these hypotheses contradict known facts of reality.

In the case of preference and indifference, we must therefore ask: does a choice of a particular action contradict the possibility that the actor is indifferent between the action taken, and some action foregone? Rothbard clearly thinks that it does; in remarking on the use of indifference maps in contemporary mathematical economics, he says, "The crucial fallacy is that "indifference" cannot be a basis for action" (Rothbard 2004, p. 307, emphasis removed). Hoppe (2005) agrees with this view, and further elaborates on the reasons, saying that "…any attempt to explain why one chooses to do *x*

rather than *y* with reference to indifference rather than preference strikes one as a logical absurdity, a 'category mistake'" (p. 87).

Now, it is certainly true that indifference cannot "be a basis" for action and cannot explain the action; this much is freely admitted by Machaj (2009) in his exposition of the praxeological conception of homogeneity. It is also true that an attempt to explain a choice *by reference to indifference* is absurd. But this does not rule out the possibility of choice under indifference, so long as there is some *other explanation* for the choice, some *other basis* for the action. If this can be established, then we avoid this alleged "category mistake."

To see that this is possible, consider the situation in which there are two or more actions which are regarded by the actor as *equally optimal actions*—that is, the actor is indifferent between the outcomes of these actions, but strictly prefers any of those outcomes to the outcomes of any other available actions. In such a situation, a choice of one of the equally optimal actions is required in order to avoid the other, less preferred alternatives. To adopt the words of Mises, the aim of the action is "…the relief from a felt uneasiness," the uneasiness in this case being the alternative less preferred outcomes of the other available actions.

Thus, in such a case, the actor will take one of the equally optimal actions. Because there are several of these actions and they are mutually exclusive, there is no choice but to forgo one (or more) of these actions in order to take another, notwithstanding indifference between them. Here the explanation for the chosen action is not *by reference to indifference*, but rather, *by reference to preference*—the preference for any one of these actions over all the available alternatives.

To take an example used in Hoppe and Block's debate on indifference, suppose that a mother sees her two young sons Peter and Paul drowning, and has time to rescue only one of them. In this situation she has three choices: rescue Peter, rescue Paul, or do not rescue either of them. Put in terms of the *consequences* of her actions, these three choices amount to:

A   Paul drowns;
B   Peter drowns; or
C   Peter and Paul both drown (the conjunction of A and B).

Now, since parents do not want their children to die, it is clear that A and B will each be preferred to their conjunction, C. If the

mother loves her sons equally and is indifferent between outcomes A and B then the options of rescuing Peter or rescuing Paul are equally optimal—both are preferred to the other available alternative. In this case, despite her equal love for her sons, the poor distressed mother will nonetheless be forced to rescue *either* Peter *or* Paul, in order to avoid the deaths of both of them.

One important special case of a decision problem involving equally optimal actions is the case where the actor is indifferent to *all* the available actions (and there is more than one), including the action of "doing nothing." For example, a medieval convict shackled to a cell wall, may be completely indifferent between the available actions of "doing nothing" and "rocking side to side." If this is the case, then he simply *must* take one action or another, not because the outcomes of these actions are preferred to some other outcome, but because this exhausts all the possible actions available to him, including "inaction." Here the explanation for the chosen action is not *by reference to indifference*, but rather, *by reference to impossibility*—it is simply not possible to choose an action outside the class of equally optimal actions.

WAYS OF GETTING AROUND THE PROBLEM OF EQUALLY OPTIMAL ACTIONS

The case of equally optimal actions which are preferred to some alternative, or which exhaust all available actions, is very problematic to the strict preference viewpoint, which holds that choice under indifference is impossible. Indeed, if not rebutted, it presents a fatal case against the strict preference approach.

Interpreted mathematically, the problem of equally optimal actions is represented by the following decision problem. Suppose we have a decision space $(S, \geqslant)$ consisting of a set of available actions S and a non-strict preference ordering $\geqslant$ which induces an indifference relation $\sim$ and a strict preference ordering $>$ (see the Appendix for more details; also Takayama 1985, pp. 175–79). The problem of equally optimal actions occurs when the decision space $(S, \geqslant)$ is such that:

   a. There exist some actions $a,b \in S$ such that $a \sim b$ and $a \geqslant c$ for all $c \in S$ (this also implies that $b \geqslant c$ for all $c \in S$).

Under this condition, actions *a* and *b* would be equally optimal actions. To see why this would be fatal to the strict preference approach, we note that this approach asserts that the chosen action $x \in S$ is such that $x > y$ for all other actions $y \in S$. But this is contradicted by the above condition, which implies that either $x \leqslant a$ or $x \leqslant b$ (or both).

It is clear that the strict preference approach *must*, in one way or another, deny the possibility that such a decision problem can ever exist. Now, since the decision problem in question is formed by the structure of a decision space composed of two elements (the set of available actions and the preference relation), there are only two ways of doing this. One is to deny that the *preference relation* $\geqslant$ can be structured so as to obtain an equally optimal action problem. The other is to deny that the *set of available actions* S can be structured so as to obtain an equally optimal action problem. Of course, there may be any number of *particular* arguments asserting these general conditions. However, all arguments against the existence of equally optimal action problems must fall within one or both of these categories.

Rothbard (2004) denies the possibility of equally optimal actions as follows:

> Since indifference is not relevant to human action, it follows that two alternatives for choice cannot be ranked equally on an individual's value scale. If they are really ranked equally, then they cannot be alternatives for choice, and are therefore not relevant to action. Hence, not only are alternatives ranked ordinally on every man's value scale, but they are ranked *without ties*; i.e., every alternative has a different rank. (pp. 309–10)

Looking at this statement, we can see that Rothbard is making the following two assertions (assuming comparability of all actions):

b. If S is such that $a,b \in S$ then $\geqslant$ must be such that $a \nsim b$; and

c. If $\geqslant$ is such that $a \sim b$ then S must be such that $a \notin S$ or $b \notin S$ or both.

Of course, these are actually two ways of expressing the *same* assertion:

d. The decision space $(S, \geqslant)$ is such that $a \nsim b$ for all $a,b \in S$.

Rothbard's assertion is slightly stronger than is required to deny the equal optimality condition. He not only denies the equal

optimality condition, but also the possibility that the decision maker can be indifferent between *any* of the available actions. This is sufficient, but not necessary, to avoid condition (a) and therefore to save the strict preference approach from the problem of equally optimal actions.

Having considered the *general* methods by which one may attempt to avoid equally optimal action problems, we are now in a good position to consider some possible resolutions for this problem which are put forward in Block (1980) and Hoppe (2005) and are further debated in Block (2009a) and Hoppe (2009). Hoppe and Block's positions represent the two methods by which the existence of the problem of equally optimal actions can be denied. One is to deny that the *preference relation* can be structured so as to obtain an equally optimal action problem (Block's approach). The other is to deny that the *set of available actions* can be structured so as to obtain an equally optimal action problem (Hoppe's approach). In the former case, it is assumed that the choice itself induces a change in the preference structure, so that there are no longer equally optimal actions. In the latter case, the indifference between the equally optimal outcomes is used to deny that they can properly be regarded as different choices, so that there are again no longer equally optimal actions.

STRICT PREFERENCE INDUCED AS A RESULT OF CHOICE

Block (1980) holds that indifference between different actions can exist prior to the choice between them, but, as soon as a choice from the class of equally optimal actions is made by the actor, some preference between the individual actions must be formed, in order to choose one of the actions over the other. In an example involving the sale of one pound of butter from a supply of one-hundred units, Block says:

> *Before* the question of giving up one of the pounds of butter arose, they were all interchangeable units of one commodity, butter. They were all equally useful and valuable to the actor. But then he decided to give up one pound. No longer did he hold, or can he be considered to have held, a homogeneous commodity consisting of butter pound units. *Now* there

are really *two* commodities… [—the butter that is retained, and the butter that is given up]. (Block 1980, pp. 424–25).

This approach means that the preferences *between the units of butter* change during the course of the transaction, not as a result of any change in the owner's view of the serviceability of these units, not as a result of any disparity in their purchasing power or their ability to satisfy his wants, but solely as a result of the necessity of choice, brought about only by the introduction of a more preferred alternative (selling a unit of butter). Under this view, the units of butter were homogeneous before the choice, but are not homogeneous after the choice.[5]

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[5] Block's further elaborations on the subject make things all the worse. He explains that the "indifference" in this situation is a psychological, rather than a praxeological or economic category, claiming that this alone is sufficient to establish homogeneity of goods and the law of diminishing marginal returns (Block 1980, p. 425). Of course, this would appear to establish the law of diminishing marginal returns, not as an economic law, but as a psychological phenomenon, something that has been strongly denied by Austrian school economists (e.g., Rothbard 2004, p. 73). But Block is having none of this—he elaborates on his views, saying:

> Homogeneity is, properly, at least in the context of diminishing marginal utility, a thymological, *not* a praxeological category. ... It is satisfied when goods are indistinguishable chemically, or physically, not praxeologically. ...it is my view that decreasing marginal utility is praxeological, and, for this law to not logically imply illicit indifference, supply cannot consist of equally serviceable units; rather, it must be (thymologically) composed of physically or chemically identical units. (Block 2009b, p. 70)

But there are many problems with this view of homogeneity. The first problem is that it *still* fails to explain how the preferences can change due to the decision to give up a pound of butter. Surely, if the units of butter were physically indistinguishable before the transaction, then they must remain so after the instant of choice.

Secondly, unless "physically distinguishable" has some special watered-down meaning, this requirement is incredibly strong. The requirement would rule out homogeneity in almost all cases in which an actor scrutinizes goods with any semblance of rigor. It would rule out homogeneity of even such simple things as coins or monetary bills of the same denomination, and maybe even pounds of butter, since these items will inevitably have some physical imperfections that distinguish one "unit" from the other. Even physical differences which are totally irrelevant to the actor then become a basis for a break with homogeneity, so long as he notices them. If the actor notices that a particular dollar bill has a crease in the top left corner and another one does not, then they are no longer homogeneous. He probably will not care about this difference, and will regard both bills

To this author, this kind of reasoning seems unconvincing, in that it violates the causal-realist approach and reverses the causal relationship between preference and choice—it posits choice as the reason for a change in preference, and not the other way around. Now, while it is true that the praxeological approach uses the notion of preference as an explanatory instrument for actual human action, so that preference is secondary to action in this sense, the actual causal relation between wanting and doing must surely not be made topsy-turvy in order to try to support the strict preference theory.

The approach of positing choice as the cause of preference cuts forcefully against the grain of the causal-realist method adopted by the Austrian school. Indeed, it runs completely contrary to the causal-realist explanation of the subjective value of goods given in Menger (2007). If goods obtain their value only from their capacity to satisfy our needs, then this requires that any strict preference between goods must follow from some difference in the magnitude of the satisfactions that depend on command of those goods. Under the causal-realist approach, if the actor is *genuinely* indifferent between each pound of butter prior to the sale, it is difficult to see why his preferences *between the units of butter* should change during the course of the transaction, unless there has been some underlying change in the satisfactions that can be derived from command of these different units of butter. The mere introduction of another more preferred alternative, if it does not change the relative satisfactions that can be gained from the different units of butter, would not seem to meet this criterion.[6]

It is important to note that Block's suggestion of a change in preferences being induced by the act of choice is not contingent on any greater scrutiny being applied to the evaluation of the units of butter once the necessity of choice is evident. So long as the

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as equally serviceable for the satisfaction of his needs, but now we are again in the realm of praxeological indifference and homogeneity.

[6] As far as the relative preference between the units of butter is concerned, the introduction of the trade would be an "irrelevant alternative" (see Ray 1973), since it does not affect the ultimate satisfactions that depend on command of the units of butter (*i.e.*, each unit of butter still allows the same ultimate satisfactions) and therefore must not affect the preference (or indifference) between them. Contrarily, in Block's argument, the new alternative of exchange for another good is allowed to affect the preferences between the units of the sold good.

person need not choose between the units of butter, he may make a meticulous comparison of them and conclude his own indifference no matter how conscientiously they are examined and appraised. He may consider them equally serviceable as a unit of payment and equally serviceable in satisfaction of all his wants, so long as he does not currently prefer to make such a payment. But, should he then be put in a position where it *is* preferable to give up one unit—in payment or otherwise—and he therefore chooses to do so, now—*voila*—a phenomenon occurs in which his preference between them is altered.

AMALGAMATING MUTUALLY EXCLUSIVE ACTS INTO A SINGLE "CHOICE"

Another possible solution to the problem of equally optimal actions is given by Hoppe (2005) following the work of Searle (1984). Unlike Block, Hoppe rejects the view that a choice between equally optimal actions induces a strict preference and instead holds that indifference between outcomes may remain even when a particular action is taken, and another foregone. However, he denies that this constitutes a "choice between" the actions. Instead, his approach in such a case is to interpret the action as a choice of *the conjunction* of the various specific actions which are equally optimal, amalgamating them into a single chosen action. Hoppe (2005) explains the situation of the drowning children as follows:

> …a mother who sees her equally loved sons Peter and Paul drown and who can only rescue one does not demonstrate that she loves Peter more than Paul if she rescues the former. Instead, she demonstrates that she prefers *a* (one) rescued child to none. On the other hand, if the correct (preferred) description is that she rescued Peter, then she was not indifferent as regards her sons. (p. 91)

Put in terms of the above taxonomy of actions, Hoppe is saying that, if the mother is indifferent between A and B, then rescuing Peter demonstrates a preference for the *exclusive disjunction* of A and B (one child drowning) over the *conjunction* of A and B (both

children drowning). In other words, what you regard as the "chosen action" depends on how you frame the choices.[7]

Hoppe's explanation of the situation is an ingenious way of attempting to rescue the strict preference approach from the problem of several equally optimal and mutually exclusive actions. Hoppe is claiming that, although the mother rescues Peter, she did not actually *choose* outcome A. Since she was indifferent between A and B, she could not choose A, and forgo choosing B. Rather, she chose outcome "A or B" even though she actually happened (for whatever reason) to do the specific action that led to outcome A. Thus, by her action of rescuing Peter, she shows that she prefers outcome "A or B" to outcome "A and B". To Hoppe, the *preferred description* of the action is that the mother is "rescuing one of her sons," not "rescuing Peter."

This argument is grounded in the fact that actions have both an external-behaviorist and internal-mentalist aspect (Hoppe 2005, pp. 89–90; Searle 1984, pp. 57–58). Two actions can be different even if they are behaviorally identical, so long as the intentions of the actor are different in both cases. To take an example used in Hoppe's analysis, a walk to Hyde Park may be behaviorally identical to a walk in the general direction of Patagonia, though they are not the same action. Similarly, two different behavioral acts can be regarded as the same action if the intentions of the actor are the same in both cases. Thus, a walk to Hyde Park beginning with the left foot, then the right foot, etc., is the same action as a walk to Hyde Park beginning with the right foot, then the left foot, etc., so long as the actor does not have any particular intention as to which foot to put forward first.

To understand the implications of this kind of approach, observe that Rothbard only claims that a person cannot "choose between" actions if he is indifferent between them. He does not say that he

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[7] Rothbard makes a similar argument (though nowhere near as well developed) when he states:

> If it is a matter of indifference for a man whether he uses 5.1 or 5.2 ounces of butter for example, because the unit is too small for him to take into consideration, then there will be no occasion for him to act on this alternative. He will use the butter in ounce units, instead of tenths of an ounce. (Rothbard 2004, p. 307)

cannot do one specific thing, and not another. This leaves open the possibility that he could choose the action which is the conjunction of all the equally optimal actions (between which he is indifferent). If Hoppe is correct, and this action is properly to be regarded as a choice *of the conjunction*, rather than a choice of a particular equally optimal act, then this would indeed remove the problem presented by equally optimal mutually exclusive actions.

While there is no *a priori* logical contradiction in Hoppe's approach, his attempt to rescue the strict preference approach from the problem of equally optimal actions is a gargantuan task. It is not at all enough for Hoppe to establish that specific acts *can* be properly described in this amalgamated way. To avoid the problem of equally optimal actions, it requires him to show that *all* cases where a person faces mutually exclusive equally optimal actions should be assessed by regarding the conjunction of these actions as the proper description of the action. Moreover, this must be the case—according to the criteria he adopts—on an examination of the actual external behavior and the internal mental processes of the person in question.

While the present author agrees with Hoppe's view that the proper description of an action depends on the intention of the decision maker, it is highly dubious (on this very basis) to assert that *all* cases of mutually exclusive equally optimal actions should be assessed as yielding a single preferred action which is the conjunction of these distinct acts. Just as a causal-realist approach to subjective value destroys Block's argument, so too a causal-realist approach to the subjective framing of the set of available actions destroys Hoppe's argument. It is only by a process of inferring what aspects of the action were in the mind of the actor, and what aspects were not, that we can then say that the choice to move the left foot first, and then the right, or the choice to rescue Peter, and not Paul, was part of the action.[8]

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[8] So then, let us consider the case of a mother who is indifferent between her drowning children, on the basis of her internal mental processes. In such a situation, it is almost unthinkable that her mind would not turn to the choice between rescuing Peter, versus rescuing Paul, notwithstanding her equal love of both of them. These acts would certainly not be regarded *by her* as one action, with no choice between the two, even if she were completely unable to see any difference in the degree of satisfaction these two "goods" afford her. In fact, a

Hoppe's position does not demonstrate the impossibility of choice under indifference. Instead, Hoppe takes this as the starting point for his analysis, and uses it to deny any possibility that equally optimal actions can be regarded as distinct choices. Although he refers in detail to the internal-mentalist aspects of action, his merging of optimal actions into a single choice does not appear

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major reason that this particular dilemma would be so stressful to the mother is the fact that she would inevitably turn her mind—even if only for an instant—to the question of which child to rescue and which to allow to die. If the issue were framed in her mind as a choice between one dead son or two, then it would be a trivial decision problem, at which she would not feel even the slightest pressure or difficulty.

But surely her conception of the problem would not be thus. It is highly unlikely to be properly described as a choice to rescue "one son" as opposed to the one she actually does rescue. On seeing her children drowning, and knowing her limited time, she will inevitably turn her mind—in the small time she has—to the question of *which* to save and she will make a choice. She will go left or she will go right. She will dive into the water, not with the intention of rescuing "one son," but with the intention of rescuing *Peter*. From both an external-behavioral and an internal-mentalist perspective, she has chosen to rescue Peter, not Paul.

Indeed, if she did not do this—if she intended only to rescue "one son"—then her action would surely be plagued by indecision and delay. She would brace to dive into the water, but her cognitive processes would not be able to tell her whether to dive left or right—to Peter or to Paul. She would stand on the riverbank, shifting from foot to foot, thinking, "I've decided—I'll rescue one of my sons... um, one of my sons." To dive in, to choose a direction, she would need more than this. She would need to *really* decide—Peter or Paul? Who lives and who dies?

When the media arrive at the riverbank to report on the incident, she will not tell them "I swam into the river to rescue one unit of child, but the other unit drowned." No! Even if it is genuinely the case that she loves her sons equally, she will say, "I swam into the river to rescue Peter, but my darling son Paul drowned!" Years later, the poor woman would look back on her action *ex post* and think: "Did I make the right choice? Should I have rescued Paul instead? Has Peter had a good life, and how does it compare to what Paul would have done had he been alive today?" She would not, unless she was deranged or in serious denial, think that she had merely made the choice to rescue "one son." Nor could she follow the strict preference approach of Rothbard and say, with a straight face, "I really didn't have a *choice* of which to save; after all, I loved them both equally!"

Of course, some may object to this whole line of argument, on the basis that "choice" and "preference" have special meanings in economics, which are not necessarily congruous with the ordinary usage of the terms employed by a distressed mother. If so, then we must surely ask whether such an esoteric use of terms is necessary to obtain a sensible theory. *Ceteris paribus*, we should prefer a theory which avoids artful interpretations of ordinary words in ways that are contrary to their common meaning.

to follow from any genuine assessment of the internal mental processes of actual people; it applies *a capite ad calcem* in all equally optimal action problems, mental processes be damned! Thus, just as Block's approach is contrary to a causal-realist assessment of preference, Hoppe's approach is contrary to a causal-realist assessment of the framing of decision problems.

This approach could perhaps be rescued semantically by being careful to define "indifference" and "choice" in a way that ensures that never the twain shall meet. The problem with this is that it imposes a serious restriction on the way in which decision problems can be described, a restriction which bears little resemblance to a causal-realist assessment of decision framing or the ordinary meaning of choice.[9]

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[9] To give a simple example of the disparity between the ordinary meaning of choice and the Hoppean approach, suppose that an economist following this approach tries to order dinner at a Chinese restaurant, and that he is indifferent between his two favorite dishes, the Peking Duck and the Szechwan Beef. The following exchange occurs:

Waiter: What would you like tonight, sir?

Economist: I'll have the Peking Duck, please.

Waiter: The duck is an excellent choice, sir. It is an especially succulent dish.

Economist: Wait right there! I didn't choose the Peking Duck; I chose the Peking Duck or the Szechwan Beef! I like them both equally.

Waiter: Oh, I'm sorry, sir. I thought you said you were ordering the Peking Duck.

Economist: I did.

Waiter: So you want to change your order?

Economist: No, I will have the Peking Duck.

Waiter: Oh, okay, so you're choosing the Peking Duck.

Economist: No, I've already told you: I choose the Peking Duck or Szechwan Beef.

Waiter: But which would you like, sir?

Economist: I like them both equally.

Waiter: Okay, so which do you choose?

Economist: I choose the exclusive disjunction of the Peking Duck and the Szechwan Beef!

Another, smaller problem with Hoppe's approach is that it makes the available actions depend on the preferences of the actor, which complicates our description of action. If an actor judges that there are twenty different behavioral options available in a given situation, then Hoppe could not take this as the number of choices. Instead he would be forced to conclude that there are *at most* twenty choices available and that the actual number of available choices, and their content, depend on the preferences of the actor. Thus different actors, confronted with the same situation, and facing the same constraints, have different "choices" available to them.[10]

Waiter: Do you mean you want them both?

Economist: Of course not! I'm not hungry enough to have two dinners! There *are* diminishing marginal returns on these things, you know.

Waiter: I'm sorry, sir. My English is not so good. Perhaps you could tell me again which you are choosing.

Economist: Look here, it's perfectly simple! I choose the Peking Duck or the Szechwan Beef, but not both. Now bring me the Peking Duck immediately!

Waiter: You don't want the Szechwan Beef?

Economist: I want them both equally.

Waiter: I'm a little bit confused, sir. Perhaps I could give you half-and-half—would that be alright?

Economist: I am indifferent. Make it half-and-half if you want.

Waiter: I don't usually add extra choices to the menu, sir, but I want to make sure you get what you want.

Economist: You didn't add an extra choice! You just changed the nature of an existing choice. Now, I choose the Peking Duck or the Szechwan Beef or half-and-half.

Waiter: Oh dear. I'm getting more confused, sir. You see, my English is not so good. I have only been in this country for twenty-six years. I will go and get a manager.

Who is at fault here, the waiter or the economist? (If this exchange reminds the reader of an episode of *The Three Stooges* then perhaps this should give us pause before adopting the Hoppean approach.)

[10] Continuing the Chinese restaurant example, the exchange continues as follows:

Waiter: Good evening again Sir. I'm sorry about before. Please let me offer you a glass of wine on the house to apologize. We have a large number of choices of wine tonight Sir.

It would certainly be mistaken to claim that that all people are bisexual, on the basis that all select partners from the class of "men and women." To do this would be to infer indifference between different options from the fact that a choice is made from a class of options. The error in the Hoppean approach is the converse of this: to infer the narrowing of the choice frame from the fact

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Economist: Hmm. I've been looking at your wine list—you only have twelve choices.

Waiter: Perhaps you didn't look at all the pages Sir. We have over fifty different selections, including many excellent foreign and domestic wines.

Economist: I've done that. There are only twelve choices.

Waiter: Perhaps your copy of the wine list is defective Sir. I'm terribly sorry. Here, let me give you my copy.

Economist: Hmm. This looks exactly the same to me. I still see only twelve choices.

Waiter: I'm sorry, sir. If you just look here, you'll see that they're numbered: one to fifty. See?

Economist: Yes, I see that. That's the number of *wines*, not the number of *choices*. Perhaps there are fifty choices for other diners. But for me there are only twelve.

Waiter: I'm sorry, sir. Perhaps I wasn't clear. You can have *any* wine you like—there are no restrictions.

Economist: Thank you. I understand that.

Waiter: May I recommend the Montedam Shiraz—it would make an excellent choice.

Economist: I can't—that's not a choice available to me. Look, I don't want to get into all this again. Just take my word for it: I only have twelve choices, and that isn't one of them.

Waiter: I'm sorry, sir. As I said, my English is not so good. I am usually much better at this, but perhaps I am not being clear. You can have *any* wine on the wine list—even the Shiraz. I don't want to restrict you in any way.

Economist: Yes, yes, I already told you, I understand that. I think the best choice here is the exclusive disjunction of the Curtis Hill Merlot, the Di Georgio Cabernet Savignon and the Yalumba Rose. I am going to choose that.

Waiter: Oh dear. I think I am going to have some trouble again. I will get the manager. I am very sorry, sir.

of indifference.[11] Hoppe's analysis of indifference and choice is certainly compelling and innovative. But it is ultimately at odds with the plain meaning of choice and the causal-realist approach to decision framing. If applied indiscriminately to all equally optimal actions the assessment of choice framing is unconvincing.

FIXING THE PROBLEM: NON-STRICT PREFERENCE AND THE LAW OF REVEALED PREFERENCE

It is quite easy to fix all these problems by accepting the possibility of choice under indifference. Rather than reinventing the meaning of ordinary words to try to avoid the problem of equally optimal actions, Austrian school economists can simply accept the full implications of the praxeological conception of indifference and homogeneity, accepting with it the possibility of choice under indifference.

Contrary to Rothbard and other Austrian school economists who have followed his approach, an action does not demonstrate a definite preference between ends. Indeed, the appellation "law of revealed preference" is misleading, if taken in the strong sense. Human action does not actually reveal strict preferences—instead, it reveals inconsistency with some strict preference possibilities. If a person takes action A, but could have taken action B instead, and didn't, then this reveals that the ends of action B were *not* strictly preferred to the ends of action A—after all, if action B were strictly preferred to action A then action B would have been taken. Now, it could be that the person prefers action A to action B, or it could be that he is indifferent between the two. Both are logically consistent with the action taken, and must be so, in order to avoid the problems presented by equally optimal actions. Thus, the law is, more accurately stated, a "law of revealed *non*-preference" if preference is interpreted in the strict sense. It reveals only that any preference possibilities that would have led to a different action must not be correct.

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[11] This does *not* mean that Hoppe would make the claim that all people are bisexual—his approach is the opposite of this. In fact, his approach only looks at a partner choice this way in cases where a person is *indifferent* between a male or female partner, in which case the person surely *is* bisexual. The point here is that by amalgamating decisions indiscriminately in all equally optimal action problems, he must surely contradict the actual decision framing of some people.

Of course, if there were a situation in which all but one strict preference possibility were found to be inconsistent with the observed action or some counterfactual analysis, then that would indeed reveal this particular *strict* preference to be correct, through a process of elimination. But it is only by this process—not by any more direct method—that a particular strict preference can be revealed. That is, it is through the revealing of the absence of strict preferences that we gain information about other strict and non-strict preferences.

Continuing the above example, suppose that the mother rescues Peter, allowing her son Paul to drown. This action is inconsistent with the possibility that she strictly prefers Peter drowning to Paul drowning. It is also inconsistent with the possibility that she strictly prefers both of her children drowning to Paul drowning. This is all that is revealed by the action of rescuing Peter. This action is therefore consistent with two possible preference explanations *vis-à-vis* Peter and Paul: either the mother strictly prefers Peter to Paul, or she is indifferent between the two, but prefers (strictly or non-strictly) to have only one of her sons die than both of them.

The non-strict preference ordering embodied in this explanation is sufficient to derive the notion of indifference and strict preferences between outcomes. This is because any non-strict ordering relation induces a corresponding equivalence relation and strict ordering relation (see Appendix). Unlike the derivation of indifference from strict preferences, this result does not require any assumption of the comparability of all possible outcomes, a property that should be particularly pleasing to Austrian school economists who are apt to stress the fact that preferences are an *explanatory* tool for action rather than a set of comprehensive orderings ever-present in the human mind (see e.g., Mises 1998, pp. 94–95).

INDIFFERENCE AS A PRAXEOLOGICAL CATEGORY

Under the non-strict preference approach, a choice of a particular action demonstrates that this action is no worse than the available alternatives, assessed in terms of the *ex ante* judgment of the actor. Thus, the "no worse than" relation is established directly from action—it is the primary praxeological relation embodied in action.

The relationship between this non-strict preference and indifference is simple. If the actor regards outcome A as "no worse than" outcome B and also regards outcome B as "no worse than" outcome A then the actor is indifferent between outcomes A and B (the converse also applies). Thus, indifference can be established as a derivative of the primary praxeological relation —it is also a praxeological relation.[12]

Of course, it is never possible to observe indifference manifested in action according to revealed preference. For this would require an actor to choose A over B, and also choose B over A in the same exact context (even at the same time). Clearly this cannot occur, since these two actions are mutually exclusive. However, this is no objection to the formation of the praxeological category of indifference, since these relations still hold from an examination of the nature of human action, not the observation of any particular action. In other words, since we know from action that the "no worse than" relation can exist, this logically implies that the indifference relation also exists, even though we never observe it in action![13]

Under the non-strict preference approach, the resulting preference ordering directly induces an equivalence relation which is properly interpreted as indifference. This approach is therefore sufficient to establish the notion of indifference and the notion of homogeneous goods, without any of the attendant problems raised against the strict preference approach in this paper. The best interpretation of these is praxeological, following the subjective theory of value in Menger (2007).

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[12] This does not mean that we need to *define* indifference as a derivative of non-strict preference; we have already seen that indifference can be defined directly in praxeological terms (as can strict and non-strict preference). It simply means that we can relate indifference to the primary praxeological relation if we want to. The reason to do this is that our direct *inferences* from observed actions are about non-strict preferences (the primary relation) and any inference about indifference or strict preference will be derivative to this (secondary relations).

[13] Machaj makes a similar point when he discusses the fact that indifference and homogeneity must be described in terms of what is unseen as well as what is seen (see Machaj 2009, p. 233). This point should not be taken to mean that we cannot *infer* indifference; it simply means that we cannot *observe* it in action and any such inference must involve some assumption or belief about counterfactual action.

EXPLAINING THE CHOICE BETWEEN ECONOMICALLY IRRELEVANT ALTERNATIVES

Lest there be any possible misunderstanding, it is important to note that the non-strict preference approach, resting on the praxeological interpretation of indifference, does not explain why the actor chooses *the particular* equally optimal action that is chosen. However, it does explain the fact that one of the equally optimal actions will be chosen, and that this necessitates *some* selection between the equally optimal actions. Under this view, the particular choice from among equally optimal actions is a matter that is outside the domain of praxeology and economics. It is an economically irrelevant choice in that it does not affect any of the satisfactions anticipated to be gained from action. The explanation of the particular choice from among equally optimal actions, if such is thought to be necessary at all, must arise from some other source, whether this is psychology, neuroscience, or some other field.

Even with this limitation, the non-strict preference approach is still markedly superior to the strict preference approach adopted by Rothbard and later Austrian economists. Where the non-strict preference approach merely limits its explanation of action to economically relevant choices, and does not seek to explain economically irrelevant choices, the strict preference approach says that the latter choices are not possible at all! Where the non-strict preference approach easily accommodates equally optimal action problems, the strict preference approach denies their existence. Where the non-strict preference approach allows Austrian economists to follow the subjective theory of value to its logical conclusion and adopt praxeological indifference and homogeneity, the strict preference approach sees even the most ardent Austrian methodologists drop praxeology like a hot potato and instead appeal elsewhere for their theory of diminishing marginal returns.

CONCLUDING REMARKS

It is this author's view that the non-strict preference approach is the only approach that is compatible with the causal-realist view of economics personified by Carl Menger, as well as an analogous causal-realist view of the subjective framing of decision problems.

In light of problems in attempts to avoid equally optimal action problems, the strict preference approach adopted by Rothbard and others seems to require contortions that render it unrealistic as a description of action.

The praxeological conception of indifference and homo-geneity which leads to the non-strict preference ordering is perfectly natural for Austrian school economists. It follows directly from the subjective theory of value. For the rest, we can let Block do the talking:

> Once we concede that two units of anything are equally serviceable in the view of the economic actor, we might as well fold our tents and go home as far as warding off the charge of consorting with indifference is concerned. (Block 2009b, p. 69)

This author is at a loss to understand the desire of Austrian school economists to avoid weakening the preference ordering to non-strict preferences. This approach allows them to easily avoid the difficulties—and the resulting contortions to escape—in optimal action problems. It also allows them to interpret both preference and indifference as praxeological relations, consistent with the causal-realist approach and consistent with Menger's excellent explanation of the theory of value. While Nozick might gloat a bit from beyond the grave, this would seem to be, not a defeat for Austrian economics, but a triumph of its praxeological method.

APPENDIX
STRICT AND NON-STRICT PREFERENCE ORDERINGS

Suppose we have a set S of outcomes of various possible actions. On the set S we have a preference ordering $\geqslant$ which is the "is no worse than" relation (*i.e.*, $a \geqslant b$ means that outcome *a is no worse than* outcome *b*). This is a binary relation that is both reflexive and transitive:

Reflexivity: $a \geqslant a$ for all $a \in S$.

Transitivity: $a \geqslant b$ and $b \geqslant c$ implies $a \geqslant c$ for all $a,b,c \in S$.

The preference ordering $\geqslant$ induces an equivalence relation $\sim$ which is the "is no worse or better than" relation. If $a \geqslant b$ and $b \geqslant a$ then we say that $a \sim b$ which means that outcome *a is no worse or better than* outcome *b* (*i.e.*, the decision maker is *indifferent* between *a* and *b*). This is a binary relation that is reflexive, symmetric and transitive (i.e., an equivalence relation):

Reflexivity: $a \sim a$ for all $a \in S$.

Symmetry: $a \sim b$ implies $b \sim a$ for all $a,b \in S$.

Transitivity: $a \sim b$ and $b \sim c$ implies $a \sim c$ for all $a,b,c \in S$.

Having defined this equivalence relation, the preference ordering $\geqslant$ is, by definition, anti-symmetric with respect to the equivalence relation (i.e., a non-strict ordering):

Anti-symmetry: $a \geqslant b$ and $b \geqslant a$ implies $a \sim b$ for all $a,b \in S$.

The preference ordering $\geqslant$ also induces a strict preference ordering > which is the "is better than" relation. If $a \geqslant b$ is true but $b \geqslant a$ is false we say that $a > b$, which means that outcome *a is better than* outcome *b*. This is a binary relation that is non-reflexive, asymmetric and transitive (*i.e.*, a strict ordering):

Non-reflexivity: $a < a$ is false for all $a \in S$.

Asymmetry: $a < b$ contradicts $b < a$ for all $a,b \in S$.

Transitivity: $a < b$ and $b < c$ implies $a < c$ for all $a,b,c \in S$.

All of this can be derived directly from the decision space (S, ⩾). However, it can only be derived from (S, ⩾) with an assumption of comparability of all actions:

Comparability: For all $a,b \in S$ we have either $a \leqslant b$ or $b \leqslant a$ or both.

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