

# Alternatives, Frames, and Relative Prices: A Broader View of Rational Choice Theory

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One important consequence of the increasing convergence between sociology and economics is that sociologists make increasingly more use of rational choice theories for the explanation of social action. This shift opens up the possibility that sociologists make use of what must be considered to be the most powerful regularity in the social sciences: the relative price effect, which states that behavior depends directly on relative prices (or relative scarcities). This effect is also known as the law of demand: as one good becomes more costly in comparison to others, a person will purchase less of that good. It turns out that crucial sociological questions (for instance the relation of gain-oriented behavior to moral behavior) make it necessary that we know something about the size of the relative price effect. Surprisingly, there is virtually no theory in economics on this point and thus rational choice theory is badly in need of being extended in this direction. In this paper, two such extensions are suggested. First, a theory of alternatives consisting of (a) a theory of social production functions, (b) a theory of non-given alternatives and (c) a theory of 'ipsative' sets of alternatives. Second, a theory of framing is presented which links the relative price effect to the definition of the situation which in turn is theoretically linked to the theory of alternatives. It is argued that these extensions make rational choice theory much more relevant for sociological applications than the neo-classical model in which alternatives are exogenously given and the definition of the situation is implicitly locked to a standard trading situation.

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## 1. The importance of looking at relative prices

Sociologists are, almost by definition of the field, interested in phenomena on the collective level. In the last fifteen to twenty years, however, it became increasingly clear that interest in social phenomena, involving interaction, rules, rates, etc., should not dictate the level of basic theory one uses to explain them. The reason seemed simple and compelling: all social phenomena are the product of human action and therefore the basic theory used to explain social phenomena should be one of human action. The use of neo-classical

price theory for this purpose seemed a strange choice at first, because sociologists had for so long maintained that price theory could only be applied to the market. Yet work like Downs' (1957) analysis of political parties, Olson's (1965) model of collective action, Buchanan & Tullock's (1962) approach to institutional design, and Becker's treatise on the family (1981) showed that price theory could also be applied to virtually every collective phenomenon outside the market place.<sup>2</sup> The label used to identify work in sociology that made use of price theory in one form or the other is 'rational choice'. Both words contrast with learning theory in which there is little rationality and no choice assumed. Learning theory, in turn, had been the

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theoretical basis for socializing effects (role theory). Thus, rational choice sociology strongly deviated from traditional sociology on this basic point which explains the halting reception rational choice encountered in many traditional quarters.

What made rational choice sociology so successful was that it has a powerful nomological kernel: the thesis that behavior depends directly on relative prices (or, what is the same, on relative scarcities). This effect is also known as the law of demand: as one good becomes more costly in comparison to others, a person will purchase less of that good. As far as we know today, the relative price effect is the most powerful and robust regularity in the social sciences.<sup>3</sup> It holds not just for consumer goods and monetary prices but also for other kinds of goods and prices expressed in relative scarcities (shadow prices). One is probably right if one follows the economist's claim that in all action situations, relative scarcities represent the most relevant aspect for behavior.

Because of the pervasiveness and robustness of this insight, one can speak of a paradigm shift in sociology. The theory of action underlying the analyses is no longer based on learning (i.e. socialization) but also on the relative price effect.<sup>4</sup> Have sociology and economics become the same because of this paradigm shift? Was not sociology the science that stressed *uncalculated* action guided by norms? If we take a closer look and judge the situation from the point of view of rational choice theory, one could say that much of what divides sociology and economics is not the question whether or not there is a relative price effect but the question how large it is. For example, sociologists have argued all along that the most distinctive feature of moral behavior is the fact that considerations of personal gain or loss play virtually no role. This implies that changes in relative prices have little or no influence for this kind of behavior. True? Consider the classic story, told by Ovid, of Cephalus testing the faithfulness of his wife Procris. She thinks that he is still imprisoned while he is on his way home, unsure whether his beautiful wife has been faithful. He gets Aurora to change his looks and tries to seduce Procris. She

refuses, proclaiming her love for her husband and he keeps offering her more money and gifts, and finally she seems to become unsure of what to do, at which moment he returns to his real appearance and admonishes her for having been willing to be unfaithful. The economist will point to the fact that everything has its price, and when the price is right, even faithfulness will be sold. The sociologist will observe that Procris resisted for a long time. And neither economist nor sociologist could have predicted what happened afterwards. Procris ran away in anger and Cephalus clearly regretted his test, and for quite some time he spent a considerable amount of resources to get her back, which he eventually succeeded in doing.

From everyday experience, we also know that the size of the relative price effect can vary according to situation. For the same person, money can play a very important role in a business negotiation and then only a minor role when he helps his mother to get the quality operation he thinks she deserves. But what theory is there on the size of the relative price effect? As we will see below, microeconomics has made big strides in detailing the limitations of the price effect. However, the present situation is that neo-classical economics furnished the other social sciences with a new paradigmatic effect but with very little *theory* about its size in a given situation. There has been criticism from the quarter of the economic institutional analysis on this point. For example, North (1981:19) maintains that 'Compliance is so costly that the enforcement of any body of rules in the absence of some degree of individual restraint from maximizing behavior [i.e. some lowering of the relative price effect, L. & F.] would render the political or economic institution nonviable'. Yet, North's solution is simply an add-on to neo-classical theory: 'A theory of the structure of (and change in) political and economic institutions must incorporate a theory of ideology' (ibid.). A similar point has been made by other economists (see for example, Hirschleifer 1985). Yet, they do not seem to drive at a theory of the size of the relative price effect and the big irony of the general state of affairs is that by and large absence

of such a theory has not even been noticed as a deficit.<sup>5</sup> For applications of rational choice theory in sociology, it is especially important that theorizing on the size of the relative price effect be made explicit because otherwise there is the danger of *ad hoc* theorizing on this point which, in turn, gives sociological righteousness a chance to mask the entire problem. This happens for example with the claim that there is a realm in which relative prices play *no* role at all (the 'moral dimension').<sup>6</sup> This claim sounds radical but in fact it is much too uncritical of the theoretical status quo. It does not criticize economists for not having any theory on the size of the relative price effect. All it does is to select a protected realm within which the greedy hands of this effect cannot reach; otherwise there is no pressure to rethink the relative price effect from this quarter as well.<sup>7</sup> We do not learn how it might be possible for this effect to be so universal except for moral behavior, nor do we learn under what conditions moral behavior may be more or less susceptible to it.

There are some newer developments in economics and in sociology that are beginning to address this deficit. It is the aim of this article to discuss these developments. In order to do so, we will first present what standard microeconomics does say about the size of the relative price effect in order to be able to highlight those features of microeconomics that have hampered the theory building on this point. We will then argue that in order to advance in theorizing about the size of relative price effect, we need first of all a theory of alternatives and, secondly, we need a theory on how selective attention (framing) affects price elasticities. The rest of the paper concentrates on relevant answers to these two questions. First, three elements of a theory of alternatives will be presented: (a) instrumental preferences; (b) non-given alternatives; and (c) ipsative sets. Second, we will present a theory of framing in which changes in price elasticities are at least partially endogenized.

## 2. Economics and relative prices

Economists have given a great deal of thought to the limitation of the relative

price effect. Although this is straightforward textbook subject matter, we briefly have to go into it in order to delineate the extent to which the relative price effect has been theoretically elaborated. In most cases, this effect is negative, i.e. a higher (lower) price leads to a lower (higher) quantity purchased. This is the powerful empirical regularity. But, as economists have shown, the effect is not always negative because a price increase (decrease) affects not just the relative prices but it also lowers (increases) the income. For most goods income and quantity consumed covary directly. But there are some goods ('inferior goods') for which this effect is reversed. When the income effect for these inferior goods is larger than the substitution (i.e. 'pure' relative price) effect then a (small) price increase does not lead to a decrease in the quantity demanded, and one speaks of a 'Giffen good'. Thus for very poor people it can happen that an increase in the price of bread reduces their income to such a degree that they can afford fancier food even less and therefore buy even more bread than before.

Another important qualification of the relative price effect comes from the fact that the relative price is also affected by the price change of other goods. How it is affected depends on the relation the goods have to each other. They can be substitutes (e.g. coffee and tea) or complements (coffee and sugar). If the price of coffee increases then the quantity of tea consumed can be expected to go up. However, if the price of coffee decreases, the amount of sugar demanded is likely to go down. In principle there also may be a neutral relationship between goods (i.e. neither substitute nor complement).

The size of the relative price effect thus depends on the kind of good we are talking about. Whether a good is a substitute or a complement and whether or not it is a Giffen good is beyond microeconomic theory. This by itself is no problem, since economics could encourage such analyses in other social science disciplines. However, as we will try to show presently, the general approach to alternatives in neo-classic microeconomics does not encourage this kind of analysis at all.

### 3. Economics and alternatives

If we are interested in the size of the relative price effect, we first have to answer the seemingly trivial question: the relative prices of what goods? There are so many goods that it is by no means trivial to know what prices are relevant. The question about the size of the relative price effect is thus tied to a theory of alternatives.

In standard consumer theory a distinction is made between preferences and constraints. Preferences order bundles of certain goods (the virtual set of alternatives) and constraints define the set of these bundles from which a person can choose (the feasible set of alternatives). Standard assumption is that preferences are constant so that change in choice behavior is explained by change in constraints. Constraints, in turn, consist of resources and prices. The standard resources in neo-classical economics are money and time.

It is quite standard in economics to assume a utility function in which every good is represented:  $U = U(x_1, x_2, \dots, x_n)$ . The background assumption is that the consumer has perfect information on the existence, nature and quality of all goods and their prevailing prices. The virtual set of alternatives consists of all possible combinations of quantities of these goods. Prices and income constraints determine together which alternatives in the virtual set are feasible. The individual has ordered preferences over the alternatives in the virtual set and chooses the best alternative of the feasible set.

Thus, in principle, the consumer keeps track of all goods and their prevailing prices, and all combinations of goods are meaningful. In any particular analysis, the researcher cannot work with all these alternatives. In fact he or she has to make a selection on the basis of practical or *ad hoc* considerations. If one is interested in the consumption of, say, motor boats, one would only look at some utility arguments, probably close substitutes and possibly time.

In the social sciences, applications of microeconomic analyses often involve only *one* explicit utility argument and thus the alternatives are different quantities of one

good. This kind of analysis is based on a particular form of the relative price effect: the individual chooses the quantity for which marginal costs and benefits (say, both measured in dollars) are identical. For the sake of convenience it is often assumed that the marginal cost curve (analogous to the supply curve) slopes upward and the marginal benefit curve (analogous to the demand curve) slopes downward with increasing quantity. For example, let the good in question be 'number of crimes committed'. The analysis consists of relating social events to changes in the position of the curves. Thus, if judges become more lenient, this lowers the marginal costs of committing a crime and the supply curve will move down and to the right, which pushes the intersection with the demand curve to the right: the predicted number of crimes committed increases. McKenzie & Tullock (1985:119) provide such an analysis and they compare it favorably to the work of sociologists who are said to maintain that punishment does not deter crime.<sup>8</sup>

It is obvious that this kind of analysis does not take us very far. It brings us right back to the old dichotomy: do relative prices have an effect, yes or no? Economic analysis would have to show that the answer is 'yes'. And since there is no guidance for the selection of utility arguments, it seems perfectly legitimate to assume in the abstract that the individual keeps track of all prevailing prices while the researcher deals concretely only with one (ordinal) price change and one sort of alternatives.

The important question should be (but isn't): *how large* is the relative price effect of a certain event and is it offset by other relative price effects not included in the analysis? For example, if the punishment meted out by judges becomes harsher for robbery, the cost of committing a robbery will increase and, due to the relative price effect, the number of crimes committed should decrease. So far so good for the standard assumption and a clear policy recommendation. But things don't seem to be that straightforward (see Blumstein et al. 1978). We do not know what part of the cost of committing a crime comes from anticipated punishment and what part from other sources, such as the loss of social

approval when caught, power difference with the victim (say, whether people move about alone or in groups), observability (say, the presence of street lights), whether potential victims carry a purse, etc. (see Gottfredson & Hirschi 1990:28 ff.). The size of the relative price effect of harsher punishments may vary widely owing to differences in these other sources of costs. Without knowing anything about the size of the effect, it will be very difficult to counterbalance harsher punishment with other of its possible price effects. What are the individual's alternatives to committing a robbery?<sup>9</sup> Some might shift to other kinds of gainful crime which are more difficult to detect<sup>10</sup> or in which it is difficult to be identified. Others might commit even larger robberies because punishment for these crimes now becomes relatively more lenient.<sup>11</sup> In the process, they will now have a higher incentive to silence their victims. In addition, those who have had the harsher punishment might be more likely to commit a big and risky robbery again.<sup>12</sup> What would be the *net* result of a harsher punishment for robbery? Which increase in harshness would have what kind of effect on robberies committed?<sup>13</sup>

Understandably, since the analysis with an *ad hoc* selection of alternatives does not lend itself to answering these kinds of questions, McKenzie and Tullock would be satisfied to find that with 'crime rate' being the dependent variable, the regression coefficient of some indicator of severeness of punishment is negative (see McKenzie & Tullock 1985:138). As Friedman (1971) has aptly observed, economists are quick to accept empirical evidence as long as it shows the semblance of a relative price effect.

#### 4. Toward a theory of alternatives

There is no theory of alternatives. However, there are a number of interesting, separate developments that bear on the question: Where do alternatives come from? In the recent literature, we find three answers to this question: first, they come from hierarchical instrumental connections; second, they come from active pro-

duction; and third, they come from biases. Let us take these up in order.

##### 4.1. Instrumental goals

The distinction between goals and means is vital to the very heart of rational choice. The implicit theory of alternatives of microeconomics equates preferences with goals and constraints with means. This leaves goals outside the theory. Yet, Becker has thought of an ingenious way of getting them at least partially endogenized without bringing in a psychology of taste.

The theory of instrumental goals rests on the assumption of two kinds of preferences (see Stigler & Becker 1977): *universal* preferences (goals) that are identical to all human beings and therefore need no explanation, and *instrumental* preferences for the means that lead to the ultimate goals which are in fact constraints and can thus be explained in a constant-driven approach. Technically speaking, there is only one utility function for all mankind but there are systematically different production functions for different kinds of people.<sup>14</sup> Buying a particular good is now not an act of consumption but the purchase of a means of production, such as a record for the production of music pleasure.

Yet, Becker's solution had one drawback: the universal preferences are not specified. This opens again the door to *ad hoc* theorizing. If one cannot explain a preference as instrumental, one can simply call it universal. For this reason, Becker's approach did not bring about the hoped for grasp on alternatives. In recent years, Becker's approach was further developed into what may be called the 'theory of social production functions' (see Lindenberg 1986, 1991).

First of all, two general goals are identified. The first is the major goal assumed in economics: physical well-being. It is this goal that drives the acquisition of most consumer goods. By a silent assumption that effort brings about a reduction in physical well-being, economists introduce effort as costs, an important assumption, not just for labor market theory. There are good reasons to assume that this identification of effort as costs is too restrictive. Human beings seem to prefer a certain level of

activation above which effort is a cost and below which it is a benefit (see Hebb 1958; Scitovsky 1976; Wippler 1987), yielding comfort and stimulation as subgoals of physical well-being.

The other goal has been stressed over and over again by sociologists as the most important universal goal: *social approval*. It was already quite clear to Adam Smith that 'nature, when she formed man for society, endowed him with an original desire to please, and an original aversion to offend his brethren. She taught him to feel pleasure in their favourable, and pain in their unfavourable regard (Smith 1759 [1976]: 116). Marshall (1920:14-17) reiterated the importance of social approval, as did Parsons (1937:162 ff.) and Parsons & Shils (1961:69). 'The struggle to preserve or enhance feelings of self-worth or prestige marks all men who live above a bare subsistence level', state Krech et al. (1962:96), and William Goode (1978:vii) maintains that 'all people share the universal need to gain the respect or esteem of others . . . The foundations of social life rest in part on the universal need for respect, esteem, approval and honor'. This is but a small selection of voices who all point in the same direction.

The instruments for reaching these two general goals are themselves goals. For social approval, we can glean three general instruments: status, behavioral confirmation, and affect. Status refers to a relative ranking (mainly based on control over scarce resources); behavioral confirmation is the feeling of having done 'the right thing' in the eyes of relevant others (including yourself). Affect is what Ego gets from Alter if Ego and Alter are involved in an affective relationship. A central ingredient in such a relationship is that Ego and Alter care for each other. 'Caring for somebody' here means that indicators of Ego's utility have become goods which produce a certain amount of physical well-being in Alter and vice-versa. For physical well-being, we have already mentioned comfort and stimulation as two general instrumental goals.

Still lower level goals are entirely dependent on the opportunities and restrictions an individual faces. On a lower level, there are again instruments for reaching the

higher level instruments, etc. For example, for the production of physical well-being, virtually every adult in our society needs money in order to buy material goods, rest and amusement. Goals are thus hierarchically structured, with the general human goals on top and with lower level goals being structurally explained. There is now only one utility function (identical for every human being) and many different sets of (nested) production functions each of which specifies the instrumental relationship between lower order and higher order goals for a particular category of people. The sociologically important point is that the social production functions are not subjective or idiosyncratic but they are social facts in Durkheim's sense of the word. For example, in our society, it is still true that by and large women can produce income by either working or by being tied to a male partner (for making a home), and women can produce social approval either by their own occupational status or by being tied to a male partner (they get behavioral confirmation for making a home and raising children and they participate in the occupational status of their partner). For men, the situation is different. They may get some behavioral confirmation from being tied to a female partner, but by and large, they cannot produce income or status via their partner. When making a home and raising children yield less and less social approval, women will seek alternative means for the production of social approval, for example by entering the labor market if they have not done so already for the sake of money (physical well-being).<sup>15</sup>

The heuristics for identifying goals is thus driven by a guided search for systematic production possibilities for social approval (in its three forms) and physical well-being (in its two forms). Substitutes and complements will show up as by-products of the construction of nested social production functions.

Seen in this light, it is quite clear that the virtual set of alternatives is not defined by a utility function imputed by the researcher but rather by production possibilities for physical well-being and social approval. Changes in relative prices concerning these possibilities are vital for the explanation of

behavior. And although we have still no general theory for these possibilities, we have an explicit search heuristics for discovering them which greatly reduces the *ad hoc* theorizing on what are relevant changes in relative prices.

#### 4.2. Non-given alternatives

While the general pattern in price theory had been to work with given preferences and given constraints (based on complete information), various developments have brought in new aspects by introducing incomplete information and 'non-given alternatives' for which the individual plays an active role in their production.

*Search.* There is first of all the field of search theories, first introduced by Stigler (1961) but later on worked out mainly for labor market analysis (see McCall 1980 and Mortensen 1986). The general idea is that a worker knows the distribution of jobs (in terms of wages) but he does not know which firm is likely to offer what kind of a job. Each search effort yields one offer but clearly the non-given alternatives play an important role. The actual choice situation is thus not to choose between jobs but to choose between accepting the last offer or to continue with the production of alternatives. This approach generated much empirical research (see Devine & Kiefer 1991), mainly on unemployment duration. But for sociology the important impulse was to concentrate more on non-given alternatives. For quite some time, networks had played an important role in the sociological study of job search. However, with rational choice theory becoming more prominent in sociology, the active creation of network ties for the production of alternatives was added to the analyses. This resulted in a much more elaborate search and matching theory which includes effects of strength of ties, kinds of search methods (say, formal or informal), prior investment in network ties and network effects on the employer (say, reducing uncertainty about the employee), in addition to strategic choice of partners.<sup>16</sup>

The point here is not the study of labor markets but the usefulness of breaking out of the implicit theory of given alternatives of neo-classical economics. Just as the indi-

vidual was assigned a much more active role as producer rather than consumer in the theory of social production functions, so the relevant behavior to be studied here is the active production of alternatives. Of course, this production is also subject to the relative price effect, but changes in 'objective' opportunities will have very different effects if they are filtered through search processes and strategic choice of contract partners. For example, for somebody who chooses strategically a business partner from a network of acquaintances (in order to economize on expected transaction costs), changes in general market prices for his products will influence his behavior much less.<sup>17</sup>

The fact that individuals may not take presented alternatives as the choice alternative but search for non-given alternatives may create a fundamental problem for the relevance of experiments for social science. It may well be that test subjects would in real life not accept the choice situations with which they are confronted in the laboratory. In real life, they may make great efforts to change these constraints and thus to evade the situation designed by the experimenter. In a test situation they have consented in advance to participate (without knowing what choice situation will be imposed on them) and they have shown up in the laboratory. They might as well go through with the experiment. In real life, however, they might begin a search for new alternatives.

Examples of such choice situations are numerous in the research on anomalies where possibilities of outcomes play a major role (see Frey & Eichenberger 1989). The well-known Asian disease problem posed by Tversky & Kahneman (1981) may be a case in point. Confronted with the options in which either 'nobody (of the 600) will be saved' or '400 people will die', many people may be deeply dissatisfied to have to choose between such alternatives and would try to find additional options. In order to test cognitive capacities of human beings, such experiments may be adequate (see Frey & Eichenberger 1993). Social scientists, on the other hand should be interested in how people deal with a choice

situation in the social setting, including their resourceful behavior.<sup>18</sup>

*Fundamental uncertainty.* Imagine it is going badly with your company and you need to find a solution. Then, if you know what to look for, you can start your search. But if you don't know what to look for in order to solve your problem, what will you do? In this respect, you find yourself in a situation of 'fundamental uncertainty' where probabilities of outcomes are of no help (see Knight 1921). This corresponds to the situation of an entrepreneur who endeavors to make an innovation in order to survive but who does not know at all in which direction to look for this unknown invention.

This kind of problem of non-given alternatives in fundamental uncertainty gets us right to a frontier of theory development that is wide open to suggestions from other disciplines, including psychology and philosophy. Relative price signals play no or only a very small role here because neither are characteristics, nor prices nor distributions known. Without a theory of entrepreneurs it is difficult to explain economic growth, but without solving this aspect of non-given alternatives, it is difficult to come up with a theory of entrepreneurs. This problem has been central to the so-called 'Austrian' economists (see Kirzner 1985) and it drives evolutionary economics (see Witt 1987). At the open end towards psychology and philosophy, we find interesting work on custom (Schlicht 1993) and on communication (Siegenthaler 1989).<sup>19</sup> In short, the work on non-given alternatives stretches all the way from search processes and network effects to the creative process of open discourse. But in all cases, the individual is engaged in the production of alternatives, which suggests that we should include this aspect in the reconstruction of social production functions. Future developments will certainly find rich opportunities in this field of enquiry.

*Self-command.* The described developments on non-given alternatives arose from the introduction of imperfect information into the neo-classical model. Another, related effort to deal with non-given alternatives has come from the introduction

of the weakness of the will into that model. There is a short-term and a longer-term rationality. An individual may not trust himself to follow the longer-term rationality in his choice and may thus *reduce* his alternatives so that the longer-term rationality will prevail. There is a problem of self-command. This is the story of burning your bridges behind you, or of requesting a ten-month salary to be paid out in twelve months, or of taking little cash and no credit card along when you go out, so you won't spend much money. This aspect of non-given alternatives is more than just a curiosity.<sup>20</sup> Individuals may fail to reduce their alternatives in which case the relative price changes relating to short-term goals will overshadow those relating to longer term goals. For example, an employee may postpone making an important phonecall about a late shipment because he is embarrassed to admit a mistake. The damage to the firm that follows from this postponement (which may even cost him the job) may not *at this point in time* make him pick up the phone and call. Clearly, the governance structures of organizations have to accommodate these kinds of self-command effects (see Lindenberg 1993a). Theoretical solutions to these problems of procrastination, impatience and addiction within a rational choice framework are still in flux, but one possibly could be the theory of framing, presented in section 5 below.

#### 4.3. Ipsative constraints

So far, limited information and self-command problems have set up the individual to interfere actively in the production of alternatives. There is yet another factor that affects alternatives, but the process is almost the opposite: the individual influences alternatives but not as an active production which is itself subject to the relative price effect. Consider the individual who believes that probabilities only hold for others while he is immune to risk. Such an individual has seemingly alternatives others do not have (say, he can cross the street without looking and still not be killed by traffic no matter how often he does it), and at the same time, he is quite immune from registering changes in relative prices in these alternatives, because such changes

would be mainly relevant for other. Such an individual has 'made' the extra alternatives but he has not produced them in the sense described above. Frey (1988) has called this the ipsative possibility set (from the Latin 'ipse', self). Learning plays a very limited role: it is only important for the feasible set assumed for representative others, not for the ipsative set. The ipsative set of alternatives is maintained over long periods of time (see Frey 1988). As Ellickson (1991:157) observed in his study of cattle trespassing conflicts, 'in some contexts a person's perceptions seem to be distorted not by lack of cognitive capacity but rather by cracks in his lens'. Take the most frequent case in which the ipsative set is larger than the representative (fairly 'objective') one. If the 'wrong' extension of the set were typical for unintelligent persons only, or the result of an error due to lack of information, it would disappear quickly and the incompatibility between the ipsative and the representative sets would not be of much relevance. However, such an overextension happens in many situations for perfectly normal, rational individuals. Managers or scholars, who regularly overload their business agenda may serve as a common example.

The lack of learning is due to systematic biases that enter the definition of the situation (i.e. the construction of reality). Individuals tend to underestimate the possibility of negative events and to overestimate the possibility of positive events for themselves. They also have a 'judgemental bias: they (have a) predilection to view themselves as personally immune to hazards' (Fischhoff et al. 1981:29 f.), and they 'tend to think they are invulnerable. They expect others to be the victim of misfortune, not themselves' (Kirscht et al. 1966). Weinstein (1980:810) presented empirical evidence based on a survey, showing that the overextension of the ipsative set is a common feature in many areas. Most of the events he lists refer to diseases or accidents where people have a strong tendency to exclude themselves from the base they assumed for the representative others. They put themselves in another category.<sup>21</sup> As a consequence, the relative price effect may be muffled due to lack of learning. For the

study of transmissible diseases, such as aids, these suspensions of the relative price effect are particularly relevant.

## 5. Framing

Neo-classical price theory assumed that alternatives are given. This implies that choice situations are given, and therefore there was also never any attempt to study the process by which a choice situation is structured. However, this structuring process itself may exert a considerable influence on the size of the relative price effect because selective attention may govern it.

Sociologists have always insisted that social analysis acknowledges the fact that people define their action situation and that this definition thoroughly influences what they will be doing. In fact, this is the core idea behind 'the social construction of reality'. But because sociologists have traditionally not worked with choice theory, this insight had never been incorporated into a choice context. With a little reflection, it becomes obvious that if this 'definition of the situation' idea is right, then there would be large differences in the size of the relative price effect, depending on whether a good is inside or outside the definition of the situation or 'framing' as it came to be called.

Recent developments allow us to trace these consequences in some more detail. Kahneman & Tversky (1979) have shown that framing a situation as a gain or a loss situation makes a large difference to relative price effects.

Lindenberg has elaborated a framing theory in the early 1980s, called the discrimination model, that went one step further. He showed how goods (aspects) that are outside the frame can still influence behavior, although in a much weaker way than aspects that are inside the frame. For reasons of space, it is only possible to present the bare outline of this model here (for a recent formulation, see Lindenberg 1993b).

The basic idea is that people have various potential goals in any action situation and that one goal wins out to structure (i.e. to 'frame') the situation, by providing the criteria for selecting and ordering the

alternatives. The winning goal is at first the habitual goal (if any) for this situation, but if it now discriminates much less than another goal, it will be replaced by another goal, viz. the one that discriminates best, i.e. the one that provides the most structure by creating the largest difference between the alternatives. This difference translates itself into choice probabilities with which the alternatives are chosen.

For example, you bought a theater ticket for \$100 and, as you want to go to the theater, it begins to rain heavily and you know that you will get quite wet even with an umbrella. There are three obvious candidates for goals in this short scenario: the anticipated enjoyment of the show, the wish to avoid getting wet and the wish to avoid throwing \$100 away by not going.<sup>22</sup> Owing to a part of the theory on the motivating power of loss (not presented here), the prediction is that unless there are unusual circumstances about which we were not told (for example, you are meeting your childhood sweetheart at the show or you just won big in a lottery), loss avoidance will be the frame for this situation. A hundred dollars for a ticket is quite a lot and if you stayed at home in order not to get wet, this amount of money would be lost without compensation. This loss would bother you so much that the utility difference of going and not going (in terms of loss) is larger (i.e. the choice probabilities of the alternatives are farther apart) than the difference between going and not going in terms of enjoyment of the show or in terms of not getting wet.

Although one goal won out, the other two goals do not simply vanish from the situation. The effect of the given utility difference between alternatives on choice probabilities is enhanced or lowered with changes in the salience of the frame, i.e. with changes in the other potential goals that influence this salience. In our case, the enjoyment of the show increases the salience of the loss frame because it favors going (as does the loss frame) and the prospect of getting wet will lower it because it favors staying. Background goals thus influence behavior by affecting the salience of the frame.

Frames can and will change. When the power of the present frame to discriminate between alternatives is greatly reduced, i.e. when the choice probabilities approach an even distribution over the alternatives, then the frame is likely to switch and the goal that potentially discriminates best between alternatives will become the new frame. Such a reduction in the ability to structure the situation can come about either through changes in the expected outcome of each alternative or through a reduction in salience. In our example, imagine that before you leave for the show your wife hands you \$90 of the \$100 you had originally given her to pick up the tickets for you, she found out that there was a mixup and that the ticket really costs only \$10. In that case the potential loss would be so small that the probability of 'not going' approaches the probability of going which renders the situation virtually unstructured. As a result, a new frame will emerge from the background (in this case probably the wish not to get wet). So, hearing the news of this price of the ticket is likely to make you stay at home. Frame switches have also been observed in the so-called 'crowding out' effect where monetary rewards displace a normative frame by a gain frame.<sup>23</sup>

Via the theory of framing, it is thus possible to trace how the definition of the situation will affect the size of the relative price effect. Observe that the analysis is still constraint driven, but (instrumental) goals are shown to have an influence on the salient feasible set because the salient goal will select a particular set of alternatives from the wide set of feasible alternatives. In addition, the weight of a goal affecting the relative price effect depends on the *position* of this goal (either as frame or as background). For example, given the loss frame, hearing just before you leave for the theater that the show had received bad reviews, will have only a relatively small effect while hearing that the ticket was cheaper than you thought will have a relatively large effect. Had the frame been 'enjoyment of the show', you would have been much more sensitive to hearing about bad reviews and much less sensitive to hearing news about the price of the ticket. In other words, if I can influence the way you structure the

situation, I can *thereby* also influence your sensitivity to various factors (which looks like changing preferences but is not). It is this very feature of framing that is essential to sociological analysis.<sup>24</sup> Note again that economists often *de facto* use framing effects by choosing the most 'relevant' utility arguments for the analysis on an *ad hoc* basis (i.e. on the basis of implicit background knowledge about the situation). Since there are in such cases no consistency checks over various analyses there is no check on the assumption of constant preferences for the representative consumer.

An ongoing social system (and especially its institutions) can be expected to create favorable conditions for particular frames and unfavorable conditions for other frames. This thus leads to *habitual* ways of framing which, in turn, stabilize the ongoing social system (and particularly its institutions),<sup>25</sup> for better or for worse, rendering institutional change on a large scale particularly difficult.

Is it possible to isolate the major frames that we should pay attention to in sociological analysis? We believe it is, by combining framing theory with the theory of social production functions. Space does not allow us to go into this aspect in more detail (see Lindenberg 1992 for an elaboration).

## 6. Conclusion

The basic point of this paper is easily summarized. There is a paradigm shift going on in sociology from role theory to rational choice theory. The important point of this shift is that rational choice sociology has at its disposal the most powerful regulatory in the social sciences: the relative price effect. Yet, this effect has been studied mainly in the context of neo-classical price theory. As a consequence, a crucial question has not been considered adequately: conditions that affect the size of the relative price effect. The implicit theory of alternatives in price theory is bound to render a serious study of the size of this effect impossible. If sociologists are asked to shift their paradigm in order to be able to work with the relative price effect, they should insist that they do not also copy all those constraints that render a study of

its size impossible. Thus, for rational choice sociologists, two kinds of developments are particularly relevant: first, those that pertain to a theory of alternatives, second, those that pertain to a theory of framing. The theory of alternatives is at the moment emerging only in parts. A central component is the theory of social production functions, in which the individual is a producer rather than a consumer. Another component is a theory of non-given alternatives in which the individual actively produces alternatives rather than takes them as given and immutable. In addition, biases may create an 'ipsative' set of alternatives that is larger than the set assumed for others and quite immune from learning experiences. Finally, the theory of framing combines rational choice with the idea that the definition of the situation matters, and because it deals with situationally prominent goals, it links up with the theory of social production functions, so that both aspects of a widening theory of rational choice (alternatives and framings) are combined, at least on this point.

At the end of this article it may be appropriate also to utter a word of warning to sociologists against taking over too little from economics and inadvertently negating the relative price effect. Rational choice applications in sociology frequently deal with discrete alternatives and therefore the most preferred form of rational choice theory is the so-called Subjectively Expected Utility Theory (SEU theory). It distinguishes discrete choice alternatives and evaluated outcomes per alternative, each outcome weighed by a (subjective) probability of occurrence. SEU theory nicely represents the insight derived from the relative price effect that in each choice situation, people look at costs and benefits and weigh the alternatives accordingly. However, SEU tends to mask rather than emphasize relative price effects. First of all, the discrete choice alternatives are mostly chosen according to the problem that is supposed to be analyzed. This renders the alternatives virtually immune to direct relative price effects. Secondly, the evaluations of outcomes are mostly done one by one, so that relative scarcities are not taken into consideration. For example, a person may

be supposed to decide to go or not to go to a protest march on abortion. He weighs the alternatives by evaluating the outcomes for going and not going and chooses the option with the highest net utility. There is no easy way in which the fact that the law has changed the day before, allowing a referendum even on abortion, would find its way into the analysis. Possibly, the imputed evaluation of outcomes is also not differentiated according the various opportunity costs of different actors, etc. In short, by using SEU theory, the rational choice sociologist may unnecessarily neglect much of the potential of the relative price effect in his or her analysis. Close attention to social production functions and non-given alternatives should alert the researcher to relative price effects even when using SEU.

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### Notes

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<sup>2</sup> See Albert (1977) for a description of the 'economic' research program and see Frey (1992a) for additional examples of the applications of this program outside the market.

<sup>3</sup> At least among economists there is considerable consensus on this point. McKenzie and Tullock (1985) speak of 'the strongest predictive statement a social scientist can make with regard to human behavior' (p. 17). Of course, there are limitations to this effect, and we will discuss some of them later on.

<sup>4</sup> This does not mean that learning effects are ruled out. All it means is that learning effects should be introduced in order to conditionalize relative price effects, rather than the other way around (see Lindenberg 1989).

<sup>5</sup> Psychologists have criticized the assumption of price theory that individuals have preferences over all alternatives, whereas in fact individuals often do not know what they want (see for example Muchinsky 1977). Yet, their interest focuses mainly on finding out why people are confused (see, for example, Fischhoff et al. 1980) and on devising methods for helping people get to know what they want (see, for example, Beach

& Beach 1982) rather than on conditionalizing the relative price effect.

<sup>6</sup> Etzioni's work (1988) and the recent work of Elster (1989) are typical of this stance.

<sup>7</sup> Etzioni downrightly discourages such rethinking by claiming that if one does that it just shows that one is busy with 'within-the-fold adaptations' (see Etzioni 1988: 38 f.).

<sup>8</sup> They go even so far as to blame the sociologists' reserve concerning the effect of punishment for the recent increases in crime (*ibid.*, p. 135).

<sup>9</sup> As we will discuss later on there is no heuristics in standard micro-economics for answering this question. Yet, for relative price effects, it would make a big difference what goals we are able to identify for burglary.

<sup>10</sup> Notice that this would contribute to a spurious relative price effect of punishment.

<sup>11</sup> 'Now I know if I's gonna rob somethin' it ought to be big, because I'm gonna get the same time.' McKenzie & Tullock (1985:132) quote this statement of a young criminal without drawing any conclusion from it.

<sup>12</sup> 'A person who may be depressed and care very little about living can hardly be expected to divert many resources to avoid being killed' say McKenzie & Tullock (1985:129), but they do not apply this insight to their own analysis of the side effects of punishment.

<sup>13</sup> Even more sophisticated economic analyses of crime (such as Ehrlich 1973 and Becker 1976: ch. 4) generally do not ask these questions.

<sup>14</sup> And again, for people with identical production functions, relative prices may differ.

<sup>15</sup> This analysis is worked out in more detail in Lindenberg (1991).

<sup>16</sup> See the studies of Flap & De Graaf (1986); De Graaf & Flap (1988); Lindenberg (1988); Flap & Tazelaar (1989); Weesie & Flap (1991); Broese van Groenou et al. (1990); Boxman et al. (1991); Sprengers (1992); Burt (1992).

<sup>17</sup> See on this point also White (1993). White's theory of markets assigns a much larger role to non-given alternatives than conventional theories.

<sup>18</sup> For example, the gut reaction of managers when faced with a risky decision situation is to make every effort to reduce the risk, i.e. to make the alternative to be chosen as secure as possible. For this purpose they muster a multitude of means, for example collecting additional information, insurance, but above all changing the project at hand (see e.g. March & Shapira 1987:1404; MacCrimmon & Wehrung 1985, 1986).

<sup>19</sup> Habermas's (1981) discourse process may also be relevant here, although it would need closer analysis in terms of non-given alternatives (see Osterloh 1993).

<sup>20</sup> There is much research on this topic lately. See Elster (1979), Schelling (1980) and Buchanan (1990) for some general discussions. To this category also belong problems of intertemporal choice in economics (see Akerlof 1991).

<sup>21</sup> An empirically important case of over-optimism relates to the entry into professions (for further evidence see Frey & Heggli 1989).

<sup>22</sup> This can also be seen as a sunk cost effect. In economics, sunk cost should play no role although all experimental evidence on this point indicates that sunk costs do play a role. There is no room here to elaborate why the sheer sunk cost effect leads to predictions that are worse than the prediction of the discrimination model (see Braspenning (1992) for a detailed discussion of this point).

<sup>23</sup> See Frey (1992b and 1993) and the literature cited on this point in these two articles.

<sup>24</sup> Recently, the discrimination model has been tested extensively, also in comparison to Kahneman and Tversky's prospect theory. The experimental evidence strongly corroborates the discrimination model and suggest that some elements of the prospect theory (like the asymmetric utility function for losses and gains) work better when integrated into the discrimination model (see Braspenning 1992).

<sup>25</sup> As we have seen above, within sociology there is renewed interest in these stabilizing habits but it is seen as an alternative to purposeful action rather than part of a theory of purposeful action: 'the neoinstitutionalist rejection of intentionality is founded on an alternative theory of individual action, which stresses the unreflective, routine, taken-for-granted nature of most human behavior and views interests and actors as themselves constituted by institutions' (Powell & DiMaggio 1991:14). Thus, the sociological neoinstitutionalists see themselves confronted with the choice of either dropping the routine aspects or the relative piece aspects and deciding for the latter. Framing theory was designed to make this unfortunate trade-off unnecessary.

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