

Offprint

Social Structure and Culture

Editor

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1 Choice and Culture: The Behavioral Basis of Cultural Impact on Transactions*

Siegwart Lindenberg

1.1 Introduction

In anthropology, there are two traditions that treat "culture" in opposing ways. The idealist tradition, of which Lévi-Strauss (1963) is a prominent modern exponent, is pitted against the materialist tradition which at present is represented in its purest form by the work of Harris (1979). Counterparts to these positions can be found in sociology, and here as in anthropology, most scholars see themselves as being somewhere in-between. The work of Max Weber is often quoted as proof that the traditions are not incompatible and that being "in-between" should therefore be interpreted as a theoretically argued rather than an eclectic position. Parsons (1961: 336) even maintains that modern sociology was born from a "marriage" of these two traditions. However, this kind of assurance is deceptive. In sociology and anthropology alike, the conflicting traditions do not mingle any better than water and oil, which implies that they tend to separate when not constantly stirred.

On the surface, integration seems easily accomplished. All that is needed for it to happen is reference to both material (e. g., economic) and symbolic (e. g., ideological) factors, and this can be done as easily in regression equations as in historical accounts. Yet, there is a powerful influence of heuristics in most analyses, creating a *de facto* separation of traditions, no matter how "mixed" the factors under consideration are. By and large, those who stress the importance of systems of meanings cannot or will not apply economic (i. e., scarcity related cost/benefit) analysis in any serious way, and those who stress the importance of economic analysis cannot or will not seriously analyze value-orientations, processes of legitimation, and the like¹.

My own position on this state of affairs is based on three informed convictions. First, the exponents of both traditions have no substantiated reason to believe that the other position will turn out to be unimportant. Second, progress within each tradition will become increasingly more difficult as the possibilities to advance without serious consideration of the other tradition become exhausted. Third, no serious integration of the traditions will be possible without first integrating the most prominent *behavioral insights* of both traditions: the insight (mainly from economics) that changes in relative

* I would like to thank Bruno Frey and Hartmut Kliemt for valuable discussions on this topic.

scarcities (i.e., in relative prices) will change behavior accordingly, and the insight (mainly from sociology) that the definition of the situation matters.

This chapter addresses this integration of behavioral insights. In order to do that, I will exploit the fact that most theories of action are theories of choice and most theories of choice implicitly or explicitly divide the choice process into three stages. In the first stage, the choice situation is cognized; in the second stage, the outcomes and alternatives are being evaluated; and in the third stage the choice is made according to some criterion. The crucial difference between the theories lies in what is assumed to happen in each stage. By comparing theories on these assumptions, it is possible to see where obstacles to the integration of behavioral insights are and what can be or is being done to overcome them.

The discussion will begin with a presentation of the theory of action proposed by Parsons and Shils (1951). It is one of the most serious representatives of the insight that the definition of the situation matters. After this, I will introduce subjectively expected utility (SEU) theory² as representative of the insight that relative prices matter.

My main thesis regarding the difference between these two is that each is based on a conception of choice so radically different from the other that they could not possibly be combined: One contrasts instinct versus choice, making learning the focus of constraint on choice; the other takes choice to be a consequence of the combination of goal-seeking and scarcity, making scarcity the main constraint on choice. If integration is to succeed then it matters a great deal which of the two is taken as a base. I will argue that aspects of learning (the definition of the situation) have to be brought into scarcity-based theories rather than the other way around.

This argument provides the structure for the rest of the chapter. Kahneman and Tversky's (1979) prospect theory is presented as the most prominent attempt to bring the definition of the situation (or "framing," as they call it) into scarcity-based action theory. Prospect theory, in turn, is criticized as rendering the definition of the situation so idiosyncratic that it is of limited use to social scientists.

A solution to this problem is sought in the discrimination model of stochastic choice, which is introduced in section 6. That model is scarcity-based, but it focuses on a central sociological aspect of the definition of the situation: the situational salience of goals. The relation between rational choice and culture is analyzed in the light of this model.

1.2 The Parsons-Shils Solution

In 1951, Parsons and Shils³ stated that up to now the disciplines in the social sciences tended to "declare their theoretical independence from the other." In the exceptional cases in which interdependence among the disciplines was asserted, it happened in an ad hoc fashion and "without regard to the

methodological and theoretical bases of such interdependence" (Parsons and Shils, 1951: 239). By contrast, they evaluate their own contribution as being to a substantial degree "permanently valid" and an "important advance toward the construction of a unified theory of social science⁴."

Parsons and Shils reject both the pure idealist and the pure materialist position. What disturbs them most about the idealist position is the view that action emanates directly from values, as if values had some independent existence and could "realize themselves" in personality and social structure without the intervention of motivation. What they find unacceptable in the materialist position is the view that society and culture are based on some given human nature, as if human nature had an existence independent of culture and society (Parsons and Shils, 1951: 240).

1.2.1 The Value Theory of Action

As we will see, values play a central role in Parsons and Shils' theory of action. Therefore, I will call it "a value theory of action." It begins with a list of relevant elements (Parsons and Shils, 1951: 56 ff.): an actor ("ego") from whose point of view the analysis takes place; a situation of action, composed of social objects ("alter") and/or nonsocial (physical or cultural) objects; and ego's action orientation to the situation. The latter includes in any case ego's orientation to objects and to his own goals.

Every action involves an act of choice. That act is analyzed into three phases or stages. In the first stage, the action situation is being roughly structured; in the second stage, various courses of action are being evaluated and a definite set of alternatives is established; and in the third stage a course of action is being chosen from the set established in the second step (Parsons and Shils, 1951: 67 ff.).

Let us look at these steps in more detail. The *first stage* consists of two kinds of "discriminations," the cognitive and the cathetic⁵. Here the actor distinguishes objects (or expected objects), establishes their significance for the gratification of her needs, and organizes these two kinds of information into a set of alternative courses of action⁶.

At this point ego must decide either to choose a course of action (go directly to the third step) or to subject the choice situation to a more thorough evaluation⁷.

In the *second stage*, the various alternatives are compared and evaluated. Sociologically, this is the most interesting step because it is here that value standards (i.e., rules) are being invoked in order to help the process of evaluation. *On the basis of learned rules, certain consequences of various alternatives are being amplified, and the range of open alternatives is being narrowed⁸.*

In the *third stage* an alternative is chosen, either with short-term maximization of gratification (when stage two has been skipped) or with long-term maximization of gratification as choice criterion.

In this theory, values play a fundamental role. Parsons and Shils conceptualized values as solutions to certain choice dilemmas. The first such dilemma consists of the question whether or not to consider rules for making the choice (i.e., whether or not to skip to step two). Other such dilemmas consist of the choice between possibly conflicting sets of rules. Which set should have primacy? For example, should personal or impersonal standards be applied to alter? Values are answers to these kind of questions.

These values ultimately make society possible. Taken by themselves, values express "the desirable," and together they are part of what Parsons and Shils call "the cultural system." In more specific forms, values are expressed in expectations for action and attitudes for specific roles (the "social system"). Say, a judge is qua role expected to give primacy to impersonal ("universalistic") standards. At home, as mother, the same person will be expected to give primacy to personal ("particularistic") standards.

During the process of socialization, values become internalized, that is, they become directly constitutive of the "personality system." Thereby orderly interaction is made possible because the internalized values create reciprocal expectations among a variety of actors (i.e., they create a "social system"). The reciprocal expectations, in turn, are made possible by the fact that values govern the definition of the situation both in a normative ("cultural") and in a motivational sense. In other words, because the values are a constitutive part of the socialized personality, the person *wants* to define the situation the way she is *expected* to do. The judge is generally expected to let objective standards prevail in court vis-à-vis the accused, and in all likelihood she has been socialized in such a way that she wants objective standards to prevail.

To the degree that cultural, social, and personality systems are integrated, to that degree values are institutionalized and society runs smoothly.

1.2.2 Evaluation of the Parsons-Shils Solution: The Plasticity Paradigm of Choice

To my knowledge, there are no efforts to arrive at a sociological theory of action that are more ambitious than the one just presented. Yet, has it accomplished the task its authors set for themselves? Clearly, the theory is not materialist in the sense that it assumes that values influence the forming of personality, and it is not idealist because it allows a lack of integration between the three systems, that is, it allows that wants and social expectations differ. More importantly the theory specifies dimensions within which any situation is defined, and it explicitly introduces the possibility that the choice of a course of action is preceded by a choice of rules for the construction of the set of alternatives⁹. But have they thereby found the methodological and theoretical bases of the interdependence of the social sciences and moved toward a unified "theory of social science?"

One way to answer this question is to see what happened to their theoretical effort in practice. While it did bring sociology, anthropology, and psychology

closer together for a while, it was never elaborated as a theory of choice, and it never managed to tempt behavioral sociologists and economists to join this venture. Parsons himself moved progressively more toward an idealist position¹⁰. Why this idealist turn?

While Parsons and Shils speak of "maximization" (and sometimes "optimization") in the third stage, they never deal with aspects of scarcity, and thus maximization is not subject to scarcity-related constraints. The reason for this neglect of scarcity has to be located in what I would like to call "the plasticity paradigm of choice," a paradigm that was used by Durkheim, Freud, and, to some degree, by Weber. All three, but especially the first two authors, had been crucial influences on Parsons and Shils.

This paradigm consists of three main guiding assumptions (Parsons and Shils, 1951: 63, 71, *passim*). First, organic energy (or effort or drive) is the dynamic element in action. Second, in instinctive action, energy is released by fixed object-action links of organic needs. There is no choice involved. Choice becomes possible through the fact that instinctive action makes way for "plasticity," which allows a variety of responses to given objects. Third, in some cases, action proceeds as if it were instinctive (i.e., skipping the evaluative step), but in most cases, effects of learning and culture govern action by creating and steering human choice.

Given this paradigmatic background, action is seen as being "oriented to the attainment of ends in situations, by means of the normatively regulated expenditure of energy" (Parsons and Shils, 1951: 53), and therefore the crucial question to be answered is: What learned (i.e., cultural) constraints are there on the release of energy? Against this background, needs are analyzed in terms of the combination of innate drives and learned wants into "need-dispositions" which prominently include the motivation to comply with situationally adequate rules. The rest of the behavioral dynamics is more or less devoted to the stabilization of this motivated compliance in situations in which conflicts have not been resolved through the application of rules in the evaluative stage. These are mechanisms of defense (such as rationalization and fixation) and mechanisms of adjustment (such as dominance and aggression).

It is important to notice that even without the heavy use of Freudian concepts, Parsons and Shils' solution could not accommodate aspects of scarcity due to their plasticity paradigm of choice. In this paradigm, changes in demand can only be modeled as changes in "need-disposition" (which, in turn, can be modeled as a result of learning). Given constant preferences (need-dispositions), the effect of changes in relative prices cannot be traced (see also Lindenberg, 1984a). Thus, as it stands, Parsons and Shils' effort forcefully reiterates the sociological insight that the definition of the situation matters but is does not offer a unified theory of action.

1.3 The Scarcity Paradigm of Choice and SEU Theory

Economic price theory has a long development of its own, but its successive versions have at least one thing in common: the scarcity paradigm of choice. In this view, choice is necessitated by the fact that one has to give up scarce resources in order to get something. These resources could have been used for getting something else. Thus, if the relative prices (i.e., relative amounts of resources) change for some goods, so will the pattern of choice¹¹.

There is a basic asymmetry between the two paradigms of choice. While scarcity effects cannot be brought into the plasticity paradigm, plasticity effects can be brought into the scarcity paradigm. For example, culture could be thought of affecting choice via an influence on costs and demand. Thus, client discrimination against a certain race will render employment of members of this race less efficient and thus possibly more costly. Scarcity-based theories of choice could also be expanded with assumptions about the cultural influence on preferences and expectations (i.e., these phenomena could be endogenized). Why then have economists been so unable or unwilling to incorporate cultural aspects into price theory?

The answers cannot be found in price theory per se but in the auxiliary assumptions that are used when it is applied. These assumptions have been traditionally chosen so as to allow strong simplifications in the analysis of supply and demand¹². Preferences have been taken as given and the problem of expectations had been defined away by assuming that there are no situational uncertainties and conflicts of interpretation. To some extent, these uncertainties have been incorporated into price theory in a version called the "subjectively expected utility (SEU) theory" and therefore this version rather than price theory proper will be discussed.

Like the Parsons-Shils theory of action and like most other theories of choice, SEU theory is a three stage theory. In the first stage, the choice situation is cognized, in the second stage, the outcomes and alternatives are being evaluated, and in the third stage the choice is made. Thus the crucial difference between the Parsons-Shils and SEU theory and between various kinds of rational choice theory is not the number of stages, but what is assumed to happen in each stage. In all three stages the theory does not pretend to describe cognitive processes. Rather, the theory is an "as if" theory, meaning that all propositions should be read: "the individual behaves as if. ..."

In the *first stage*, the individual distinguishes alternative courses of action and various outcomes for each alternative, and she assigns a utility index number to each of the (projected) outcomes according to her ordered (and transitive) preferences.

In the *second stage*, the individual evaluates each outcome and the alternatives. She assigns subjective estimates of risk such that each outcome is weighted by a subjective probability of its occurrence, resulting in the expected value (or utility) of the respective outcome. By summing the expected values per alternative, the individual arrives at a subjectively expected value (or utility) for each alternative.

In the *third stage*, the individual chooses the alternative with the highest subjectively expected value (or net utility). This can be expressed in terms of the decision rule to choose the alternative with the highest weighted sum of utility index numbers ($\sum p_i u_i$).

As is the case with any other theory, SEU theory can only be applied with the help of auxiliary assumptions. Some of these assumptions are being made so frequently that they are generally taken to be part of SEU theory. Criticism of SEU theory is mostly directed at its auxiliary assumptions. There are many such auxiliary assumptions but for our purposes it suffices to mention only the most troublesome ones. One kind of assumption is strongly influenced by an implicit or explicit presupposition of *unbounded rationality* that renders strong simplifications in the application of SEU theory theoretically justifiable. Another kind of assumption deals with this minimal theoretical attention. Three important examples belonging to the first group are:

1. The kinds of goods that supposedly contribute to utility are specified in a utility function, that is the function that is being maximized in stage three subject to the given restrictions. Since attention is not limited by assumption, the kind and number of goods in a utility function are decided upon by the researcher so as to best suit her purposes at hand. In other words, there is notably no systematic theorizing about kind and number of goods in the utility function, nor is there any inherent push from SEU theory in this direction.

2. The assumption that subjective probability follows the principles of objective probability by adding to unity and by the former being a linear function of the latter; this assumption makes it possible to use objective probabilities in most cases as proxies for subjective probabilities.

3. Alternatives will be cognized and evaluated in such a way that they will coincide with the objective descriptions. Thus, if two alternatives are objectively equivalent they will also be subjectively equivalent (this is sometimes called the invariance assumption). Through this assumption, it is possible to disregard differences in wording and presentation, since the description of an alternative should not influence the decision.

The two most important assumptions in the second group are:

1. Subjective value (utility) is related to objective quantities of a good by a utility function. The general shape of this function is such that the subjective value of the next unit of the good (i.e., the marginal utility) decreases with increasing quantity (the *decreasing marginal utility assumption*). A utility function can, of course, also contain more than one good.

2. Subjective value is assigned on the basis of the total quantity of a good (or combination of goods) an individual has at her disposal. Thus the utility assigned to an outcome does not depend on comparisons of this outcome with a standard (unless, of course, the good itself, say status, consists of relative standing).

A few illustrations of these points will appear in the section on Kahneman and Tversky's prospect theory because these two authors have investigated many problems with auxiliary assumptions of SEU theory. Before that, the important question is: Is it possible to combine value theory and rational choice theory in such a way that the two most prominent *behavioral insights* of both traditions (i.e., the importance of relative prices and the importance of the definition of the situation) can be integrated into one action theory?

1.4 Reason and Rationality: Stinchcombe's Social Agency Theory

In a recent paper, Stinchcombe (1986) sharpened a Weberian argument by insisting that essential elements of value and rational choice theories are actually not combined by theoreticians but by society itself in a historical process of "rationalization". He distinguishes "reason" from "rationality." "Reason" refers to norms governing a body of thought recognized as authoritative in a culture, such as "legal reasoning" or the rules of accounting practice. "Rationality" refers to individual behavior that maximizes benefits or minimizes costs in achieving some goals.

To the degree that reason is institutionalized, to that degree rationality is likely to be affected by it. This is possible because reason contains an idealized utility function, and the individual practitioner is normatively held to maximize the institutional rather than his own utility function. In this way, faculties of rationality are applied "on behalf" of other people or values. For example, a judge is supposed to maximize "justice" and in the legal professions, there are authoritative criteria for what that means.

How does this solution differ from the value theory and the SEU theory? Clearly, Stinchcombe has combined both theories by interpreting the value standards (or at least the universalistic kind of standards) operative in the second stage of the Parsons-Shils theory as utility functions that are operative in the first stage of SEU theory. But what has he gained by doing this? Are people not simply socialized into institutional roles that are now called "institutional utility functions?"

The advantage of the Stinchcombe procedure issues from the recommended sequence: integrate a plasticity-based choice theory into a scarcity-based theory and not the other way around. He can now argue that (a) reason contains nested authoritative norms of rationality, but these norms are built on the human faculties to deal resourcefully with scarcity; (b) reason is the weak force compared to the strong force of personal passions and interests but that very fact is already discounted in the authoritative norms. For example, rules of legal practice anticipate interference of private rationality when there are strong conflicts of interest between the private and the institutional utility function. Thus the rules contain provisions for such cases and reason and rationality are

interlaced. According to Stinchcombe, the standard example for this kind of theorizing is Max Weber's analysis of bureaucracy.

What then are the limitations of Stinchcombe's solution? One crucial limitation can be located precisely where the brunt of the criticism against Weber's theory of bureaucracy has been leveled (see, for example, Udy, 1959; Williamson, 1964; Tullock, 1965; Downs, 1967; Niskanen, 1971): One cannot assume that bureaucrats maximize an institutional utility function because much of their behavior must be explained on the basis of their private utility function given the constraints set by the institution. The other crucial limitation is the converse point: The behavior of bureaucrats and other practitioners cannot be adequately explained by assuming that they are entirely selfish, but then their unselfishness is precarious. For example, the phenomenon of loyalty does speak for the possibility of identifying with values, causes, and persons and thus for the possibility of substituting an institutional utility function for a private one. But loyalty is fickle, and its maintenance is precarious (cf. Schaar, 1957; Tumin, 1968; Hirschman, 1981; Akerlof, 1983). Thus, the very fact that "reason" is institutionalized does not guarantee that it supplants rationality. In some occasions it does, in others it does not. Unless we have an explanation of the possible interaction of the two, the idealist and the materialist traditions, reason and rationality, are likely to separate again even in Stinchcombe's solution. Yet, in order to learn more about the behavioral base of their possible integration, more has to happen to scarcity-based choice theory than the substitution of one utility function by another. Prospect theory, to be discussed in the next section, is meant to achieve just that^{1,3}.

1.5 Prospect Theory: Kahneman and Tversky's Alternative

Prospects are alternatives or "options" that may involve some risk, that is, they are the kind of alternatives to which expected utility theory applies. Kahneman and Tversky could show that, contrary to expected utility theory, the choices people make among various prospects also depend on the way the decision situation is formulated. Violation of this assumption can be illustrated by the following experiment (see Kahneman and Tversky, 1979): Subjects were asked to choose between winning a sure \$ 500 and an even chance of winning \$ 1000 or nothing. They were also told that they have just been given \$ 1000. Of the subjects, 84% chose the sure gain of \$ 500. In a second experiment, subjects were asked to choose between a sure loss of \$ 500 and an even chance of losing \$ 1000 or nothing. They were also told that they have just been given \$ 2000. The risky prospect was preferred by 69%. In effect, the objective outcomes were identical in both experiments, but the choices differed due to the formulation of the prospects.

Maybe the most famous example of the violation of this invariance assumption is the following (with the percentage of subjects choosing a particular option in brackets).

Problem 1:

Imagine that the United States is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimate of the consequences of the programs are as follows:

If Program A is adopted, 200 people will be saved. [72 %]

If Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved. [28 %]

Which of the two programs would you favor?

In Problem 2, the same cover story is followed by a different description of the same prospects associated with the two programs:

Problem 2:

If Program C is adopted 400 people will die. [22 %]

If Program D is adopted there is 1/3 probability that nobody will die, and 2/3 probability that 600 people will die. [78 %]

Which of the two programs would you favor? (Tversky and Kahneman, 1981: 453).

Options A and C and B and D, respectively, are identical in terms of the effect the programs have on the number of people killed, yet subjects virtually reverse their choice due to the different formulation of the prospects. In Problem 1, their choice is risk averse; in Problem 2 their choice is risk seeking. Why is this so? Expected utility theory has no ready answer to this question. For Kahneman and Tversky, the formulation influenced the way subjects structured or *framed* the choice situation. Framing is a process whereby the situation is "defined," that is, whereby information is coded and evaluated in a certain way¹⁴.

In Problem 1, the fact that 200 people can be saved by opting for A is judged against the fact that 600 people will die for sure if nothing is done and that they are still very likely to die if B is adopted. In Problem 2, the fact that there is at least a fighting chance of saving everybody is judged against the fact that otherwise 400 people will die for sure.

While the reversal in choice pattern can be made plausible by describing the situational interpretations in a certain way, prospect theory is supposed to explain *systematically* why the choice was risk averse in Problem 1 and risk seeking in Problem 2. What does this theory look like?

1.5.1 Prospect Theory

Like the Parsons-Shils and SEU theories, prospect theory is a three stage theory of choice. As a matter of fact, the big difference between the latter two theories lies in the auxiliary assumptions. Their kernel (presented previously) is virtually identical. The for us most important new auxiliary assumptions can be grouped by stage¹⁵.

With regard to the first stage Kahneman and Tversky assume that the utility (or value) of some outcome is always subjectively measured in terms of gains

and losses relative to some neutral reference point. While this assumption is not incompatible with the kernel of SEU theory, it does run counter the auxiliary assumption that outcomes are evaluated in terms of absolute states of wealth or welfare.

Next, they assume that utility (or disutility) decreases marginally with increasing gains (or losses). This implies an S-shaped utility function for gains and losses, with the neutral reference point being the point of inflection (see Figure 1.1).

Since it has been repeatedly observed that people weigh losses heavier than gains of the same amount, Kahneman and Tversky assume that the utility function is steeper for losses than for gains rather than symmetrical around the reference point. This is a very important assumption because it accounts for many effects previously not captured by expected utility theory, such as people's reluctance to accept fair bets.

Clearly, the reference point is very important because it determines what will be seen as gain and as loss. The authors state that it "is largely determined by the objective status quo, but it is also affected by expectations and social comparisons" (Kahneman and Tversky, 1984: 349) and they take it to be quite unstable (Tversky and Kahneman, 1981: 456).

With regard to an individual's selection of outcomes, they assume that an individual will by and large only consider the most direct consequences of an option, leaving out other aspects. These "minimal accounts" of a situation simplify evaluation in the second stage. Thus, in a gamble, people will generally concentrate on, say, the money to be won or lost, and they will leave out other assets or the outcomes of previous gambles. This concentration reflects people's intuition that consequences should be causally linked to acts, and it reflects the assumed fact that gains and losses (i. e., desirable and undesirable *changes*) are more important to people than steady states¹⁶.

Regarding the second stage, the most important new assumption relates to subjective probabilities. Following SEU theory, Kahneman and Tversky state that the value of an outcome is multiplied by a decision weight before it is evaluated. For almost all values, this weight is a monotonic function of the stated or objective probability with which the outcome occurs, but, contrary to

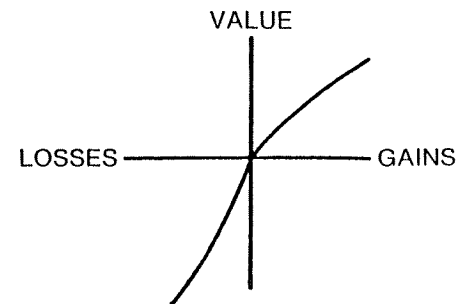


Figure 1.1 An S-Shaped Utility Function for Gains and Losses

SEU theory, it is not itself a probability. There is thus also no presumption that decision weights have to add to unity.

The assumptions Kahneman and Tversky make about decision weights can be summarized by depicting the weighting function in Figure 1.2. Small probabilities are overestimated while larger ones are underestimated¹⁷.

Again, Kahneman and Tversky can show that with the help of this weighting function, choice phenomena can be explained that would be very puzzling to SEU utility theory.

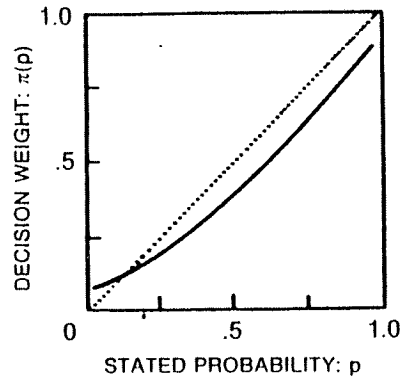


Figure 1.2 Weighting Function

1.5.2 Some Problems with Prospect Theory

Kahneman and Tversky had introduced minimal accounts as the most general way in which people select outcomes situationally. Yet, minimal accounts leave no room for the influence of other, less salient kinds of outcomes. The authors observe that *at times* inclusive accounts will prevail, but this makes their theory *ad hoc* on this point. For a theory of framing, this is rather damaging because by any reasonable understanding of what the authors mean by “account,” it is central to people’s definition of the situation.

This does not mean that it is really clear what exactly they do mean by “account.” For example, they hint at the possibility that uncompensated losses (sunk costs) exert their influence through an inclusive account because, through them, a previous situation interferes with the present one. According to Thaler (1980) sunk costs do exert a considerable influence on behavior, contrary to neoclassical price theory. This would imply that inclusive accounts are much more general than Kahneman and Tversky make them out to be. Yet, it is not quite clear why one account is inclusive and the other is minimal. Supposedly, previous situations will always have some influence on later ones. The authors’ theoretical elaboration is much too vague on this point.

Next, in prospect theory, reference points are crucial for the choice behavior because they govern what is gain and what is loss. But prospect theory contains

no theoretical guidance as to what reference points people will have in a given situation. Sometimes it will be the status quo, sometimes it will be expectations, sometimes it will be social comparisons. When will it be what?

Third, when Kahneman and Tversky predict that, say, option A will be chosen, then they consider any choice percentage above 0.5 to be a confirmation of their prediction. The reduction of choice percentages from 55 to 45 is a “reversal” of choice, while the much larger difference between, say, 55% and 95% can be ignored because they both confirm the same hypothesis. Why do the choice percentages differ? The authors see no problem in this, and prospect theory offers no answer for it. Something important must have been left out of their theory.

Finally, they make framing out to be a very subjective process, but as Fischhoff (1983) found out, the frame people consciously prefer if given a choice is often not a good predictor of the frame they actually use. For sociological purposes this is a crucial point because in sociology changes in constraints rather than subjective states carry the major explanatory burden (see Lindenberg, 1984a)¹⁸. Of what I would take to be the five most important requirements for a useful behavioral theory in the social sciences (see Lindenberg, 1985: 108), prospect theory does not quite meet two: it requires much (too much) information about each individual to which it is applied, and it makes it difficult to formulate bridge-assumptions that link culture and social structure to the individual choice situation¹⁹.

1.6 The Discrimination Model of Probabilistic Choice and Framing

An attempt to avoid the problems connected with prospect theory and yet to continue on the road of a framing theory of rational choice is the discrimination model of stochastic choice (Lindenberg, 1981). Like prospect theory, it has fared well in empirical tests, but unlike prospect theory, it is explicitly geared to sociological rather than psychological problems²⁰. This will be made explicit in section 1.7.

The model is based on the assumption of bounded rationality and on the rejection of the (SEU theory) idea that an individual is able to discriminate as many aspects and objects in the choice situation as the researcher finds convenient to assume.

In the *first* stage (just as in the SEU theory), the individual distinguishes alternative courses of action and various outcomes for each alternative, and she assigns a utility index number to each of the (projected) outcomes according to her ordered (and transitive) preferences. However, unlike SEU theory, the discrimination model assumes that the cognitive limitations (including the limited span of attention) are so severe that human beings will be able to *focus only on one main maximand at a time*. This maximand is part of a “frame”²¹ for the situation that steers the selection of alternatives and outcomes per

alternative. A frame consists of a situational goal and of goal criteria, that is, of criteria for ordering situational outcomes in terms of degrees of goal realization. For example, in a particular buying situation, a person wants to be a smart consumer. That is her situational goal. For her, a "smart consumer" is somebody who gets the best bargains. Bargains, in turn, are ordered by buying price; the lower the price, the better the bargain. These are the goal criteria. Note that these criteria do not order the outcomes by the lowest overall costs incurred for getting the article. Thus, the cost of using the car to get from one store to the other, the trouble and time invested in finding the best buy, etc. play no important role in defining the choice situation. They will, however, affect the choice, as we will see in stages three and four.

In the *second* stage (like in SEU theory), the individual evaluates each outcome and the alternatives. She assigns subjective estimates of risk such that each outcome is weighted by a subjective probability of its occurrence, resulting in the expected value (or utility) of the respective outcome. By summing the expected values per alternative, the individual arrives at a subjectively expected value (or utility) for each alternative.

The *third* stage differs considerably from SEU theory. The individual is not assumed to choose the alternative with the highest subjectively expected value. Rather, she is expected to choose each alternative with a certain probability that, in turn, is a function of the degree to which the individual discriminates between the alternatives. Discrimination itself is defined against the background of nondiscrimination. If there are k alternatives and the individual does not detect a difference between the alternatives (i.e., each alternative has the same utility U_0) then each will be chosen with a probability of $1/k$. Discrimination of one alternative in relation to the other alternatives depends on two things: (1) the degree to which the utility of this alternative differs from U_0 , and (2) the individual's sensitivity to this difference. Thus, discrimination is the weighted difference between the net utility of one alternative and the average utility of all alternatives. Assume now that there are two alternatives. If option 1 is seen as far superior to option 2, then the difference between the expected utility of option 1 and the average expected utility will be large, and option 1 will be chosen with a probability approaching unity. If the individual sees option 1 as only slightly better than the average, then the "better" option will be chosen with a probability close to 0.5.

The difference in expected utility between the alternatives is weighted by a factor that indicates the individual's sensitivity to the difference at a particular moment. This factor expresses the *situational salience* (a kind of marginal utility) of the goal²². For somebody rich, a small monetary difference may matter less than for somebody poor. What does this salience depend on? According to the theory, it is here that the "background" aspects of the situation play an important role. These aspects do not "define" the situation but influence positively or negatively the salience of the main goal. For instance, if the individual in our example receives much social approval from her friends for being a smart consumer, the motivating force for this situational goal

increases and the chooser becomes more sensitive to small differences. If the gas price sharply increases, the costs incurred in getting from one store to the other also increase, and the motivating force of the situational goal decreases. As a consequence, the sensitivity to small differences in net reward decreases. In this way, situational aspects not belonging to the frame still influence choice by influencing the situational salience of the goal.

Expressed algebraically, the discrimination model looks as follows:

$$P_i = \beta(g_i - U_0) + 1/n \quad (1)$$

where β = situational salience of the maximand g ; g_i = the sum of the utilities of outcomes of the i th alternative, each weighted by the appropriate event probability, ($i = 1, 2 \dots n$); $U_0 = (1/n) \sum g_i$, ($i = 1, 2 \dots n$); and, P_i = probability of choosing the i th alternative ($i = 1, 2 \dots n$)

The situational salience is a function of situational background aspects (x_i):

$$\beta = f(x_1, x_2 \dots x_n) \quad (2)$$

It is clear from equation (1) that as salience decreases, the choice probability moves toward nondiscrimination, and vice versa.

In contrast to the SEU theory, the discrimination model also distinguishes a *fourth* stage. Here the frame itself is evaluated and possibly replaced. A frame that does not allow the individual to discriminate between the alternatives (because its salience is too low for the given differences between alternatives and the average) is not useful for structuring the situation. What will happen? What other frame "comes to mind?" The "other" aspects available in the situation must be background aspects, and thus the individual will choose an alternative frame from these background aspects. Since β for the "old" frame has been small, no background aspect supporting the old frame will be very prominent. If there is any prominent aspect, it must be a negative one, that is, an aspect that had reduced β sufficiently to push choice toward nondiscrimination. The *frame switch* hypothesis is thus: *When the choice probability approximates nondiscrimination, the most prominent negative background aspect will become the new frame.*

Let me take an example. It is well known that friendships can suddenly turn "sour." How is this possible? Interaction between two friends may be steered by the frame "to be a good friend" with goal criteria that include the willingness "to help a friend in need." An increase in the cost of helping will be a negative influence on the situational salience of "being a good friend," and the probability of helping, though higher than 0.5, will decrease. If the friend keeps asking for help, the added costs keep reducing the situational salience of the frame. The probability for helping will thus approach 0.5, the frame "to be a good friend" ceases to provide a guide for choosing among the alternatives, and a new frame will appear, representing the most prominent of the background aspects, which, in this case, is likely to be "minimization of any further costs connected to this person."

So far the presentation of the discrimination model. How does it relate to the Parsons-Shils model and to prospect theory? How does it allow any insights into the relation between rational choice and culture not already apparent in the other models?

1.7 Culture and Rational Choice

1.7.1 Social Production Functions

The discrimination model neither confirms nor denies the two most prominent points of prospect theory: the importance of reference points due to the asymmetry of the gain and loss utility functions; and the possibility of a nonlinear subjective weight function. What is new in the discrimination model as compared to the prospect theory is first and foremost the situational salience of goals. Due to this feature, it is possible to show that framing effects are not so idiosyncratic as they appeared in prospect theory and that the definition of the situation (sociology) and rational choice (economics) are closely intertwined.

As I have frequently argued elsewhere (e.g., Lindenberg, 1984b, 1986b), there are good reasons to follow Adam Smith's lead in assuming that every human being wants to maximize at least two things: social approval and physical well-being. More recently (Lindenberg, 1986c), I have been persuaded to add one more to this list of general human goals: the *minimization of loss*, about which I will say a good deal more later²³. Even if the reader is not quite prepared to agree to this list of general human goals, she may nonetheless join in the assumption that there are some such goals (cf. Stigler and Becker, 1977). Once this is granted, the emphasis shifts from man the consumer (microeconomics) or man the role player (sociology) to *man the producer*. All human goals below the highest level are now goals that are *instrumental* for achieving higher level goals. Where "tastes" in economics are assumed as given in any situation and where "values" are assumed as the product of socialization in the past, instrumental goals are *rationally* connected to higher level goals given the constraints of the situation. In technical terms: Utility functions turn into *social production functions* (cf. Lindenberg, 1986b)²⁴, and there is nothing idiosyncratic about production functions.

A culture can be interpreted as having characteristic social production functions for various social positions in various social situations. For example, in the *ancien régime*, aristocrats had privileges that confer status, such as tax exemptions, judicial privileges, and honorific rights; in addition, they had seignorial and other property rights that yielded income. Yet, by law or custom, direct business activity was not open to them. Other sources of prestige depended on action, such as pleasing people who dispense honors.

If action is required for the production of a social good, then situational goals will be part of the rational choice process, that is, they will be chosen as instruments for the production of that good. Social production functions

specify what kind of actions that may be. The link with the discrimination model lies in the situational salience of goals. This salience must depend on the relation between the situational goal and the three general goals:

$$\beta = f(x_1, x_2, x_3) \quad (3)$$

where x_1 = social approval; x_2 = physical well-being; x_3 = loss avoidance.

In our society one would add a lower level goal, x_4 = income, in order to capture the special significance of a general medium of exchange. The weight for each element in the equation would largely be determined by a social production function. For example, "being a smart consumer" is connected with the production of social approval in some circles and will thus be a strong candidate for a situational goal in buying situations for members of these circles. Needless to say, the weight would also be influenced by other factors, such as the amount of the social good already commanded by the individual.

In this perspective, *socialization* is not something alien to rational choice but an integral part of linking culture and rational choice through learning effects. Many social production functions will be purposefully taught. Social etiquette is just one example. In addition, every frame also contains standards for judging the achievement of goods, and they will also be learned. In our example, the frame "to be a smart consumer" contained the standard of the lowest buying price.

Norms are situationally prescribed goals, and thus they operate via framing (cf. Lindenberg, 1983). The question why somebody conforms to norms is really only so difficult because norms are in effect prescribed framings. In this way problems can arise for both rational choice and for value theories. Consider what I call *the by-product paradox of social goods*:

Many norms have the effect that you only get what you really want by pursuing something else instead.

For a theory of rational choice without framing, this is indeed paradoxical. For example, a judge who purposefully tries to maximize what she really wants, say social approval, will in all likelihood be seen as a judge who does just that, *thereby* reducing the likelihood of getting professional recognition (i.e., social approval) for what she does. Instead, a judge is expected to maximize justice, thereby defining each situation in which she acts as a judge *in terms of this situational goal*, applying standards for the approximation of justice and ordering the alternatives accordingly. Due to the complexity of the professional standards and the difference of opinion surrounding them, this ordering of alternatives would be different if the judge tried to maximize approval from colleagues at every one time. And this difference would be detected²⁵.

For value theories à la Parsons and Shils this may seem less paradoxical because value standards can be interpreted as framing norms. So how does framing differ from the application of value standards and from Stinchcombe's "reason?" Isn't the by-product paradox more or less a restatement of role theory? These questions can be succinctly answered. Practically speaking, there

are many places in the book in which Parsons and Shils seem to assume something like the by-product paradox. In their language, physical well-being ("organically engendered need-dispositions") and social approval ("positive affective response") are the two most important goals strived for by human beings (Parsons and Shils, 1951: 69), and social approval is often seen by them as a by-product of role-conformity²⁶. Yet, theoretically, there is a problem. In their plasticity paradigm of choice, the major problem is the linking of psychic energies to social goals through appropriate learning episodes. Why social approval should continue to play a role once the individual is socialized into wanting to do what is expected cannot be answered by the value theory.

Stinchcombe, using the scarcity paradigm, also fails to come up with a theoretical accommodation of the by-product paradox. For him, the "weak force" (reason) only works if the "strong force" of personal interests is kept from interfering. There is no way to connect by-products theoretically with the weak force. For this very reason, Stinchcombe also does not have any theoretical guidance on the question under what conditions the weak force is more or less susceptible to the strong force. For example, why would professionals be more likely to keep to "reason" if they *thereby* receive professional recognition?

In the discrimination model, a frame is *always* connected to by-products through its situational salience. For this reason, the frame is vulnerable. If a judge were offered a large bribe for reaching a judgment that deviated from her professional standards, x_4 in equation (3) would greatly increase with a negative sign, reducing β . Unless the other elements are quite high, β will decrease so much that the choice probability will reach 0.5 and the frame is likely to switch to "maximizing one's income"²⁷.

1.7.2 Culture, Social Norms, and the Avoidance of Loss

The discrimination model can also be used to specify conditions under which elements of culture will change. I would like to illustrate this with two examples: first with changes in the stability of framing in social interactions, and, second, with changes in the cultural production of meaning.

Although norms function via framing, they also stabilize framing because for most situations they prescribe a goal of action. Without norms, framing will be more dependent on moods and circumstances. Elsewhere, I have argued that the effort needed to socialize children in such a way that they routinely accept normative action frames increases at the same time that its rationale for the parents to do so decreases (Lindenberg, 1984 b, 1986c). Briefly summarized, the reasoning is as follows.

Social norms arise when interacting individuals mutually exert positive externalities, so they would rather not split up, but they also mutually exert negative externalities that are thought to be reducible through the acceptance of behavioral rules. There are good reasons why negative externalities (potentially) exerted by children on parents have considerably decreased over time in

our Western societies. First, when status is truly ascribed or truly achieved, children's behavior cannot influence the parents' status. It is in a mixed situation when ascription and achievement are both operative that children's behavior can matter a great deal for parents' status. With achievement on the rise in an ascriptive society, negative externalities should increase, and socialization should become a very important status activity in families (cf. Elias, 1939). With ascription on the decline, these negative status externalities should also decline. For parents, it should become less important to make sure they educate their children to do "all the right things" (choosing the "right" occupation, the "right" partner, etc.) when they grow up. Second, with increasing social insurance, it becomes less important for parents to educate their children in such a way that they will take care of them in later life. Third, with increasing income, it becomes increasingly cheaper to solve negative externalities in the home through the acquisition of goods rather than through the socialization of children. For example, if the living room has to be shared by many, people will get on each other's nerves unless they all follow some rules. If everybody has his or her own room, these negative externalities do not come up and do not have to be mitigated by social norms. Fourth, when training in social norms becomes generally less important, parents will receive less support from the outside world (visitors, teachers, neighbors, church members, etc.) for a strict socialization of their children. Also, when an economic solution to negative externalities is easily available, children will be less willing to accept rules they would not have to follow if the economic solution were chosen by the parents. In both cases, the cost of strict socialization increases as its importance decreases.

The fact that strict training in framing declines does not mean that "culture" ceases to influence choice. Rather, it means that culture will contain increasingly more variable elements, such as behavioral fashions and "open" norms, such as "put yourself into the shoes of the other and act accordingly." If the theory on social norms is slightly correct, then one can also predict a resurgence of "traditional" culture when negative externalities increase for a longer period, as during a longer economic recession. Thus, while the stability of framing may vary, framing effects and therefore "culture" will not go away.

The next example shows how framing effects are likely to be connected to the production of meaning. Remember that loss avoidance is supposedly one of the general human goals. This means that the avoidance of uncompensated loss (i.e., the prevention of imminent loss and the reduction of recent loss) influences the salience of frames and, if it gets large enough, it will become the frame itself. This effect has been called "the loss hypothesis" (Lindenberg, 1986a) and formulated as follows:

- a) the likelihood that avoidance of uncompensated loss dominates other possible frames in any given situation grows disproportionately with the size of the loss; and
- (b) the costs incurred in pursuing this goal may be higher than the value of the loss itself.

In price theory and SEU theory, sunk costs should not have any influence on behavior. Yet, it is well known that people find it very difficult to "cut their losses"²⁹. In novels, this theme has frequently been the central subject matter. The most famous example may be Kleist's "Michael Kohlhaas" and his contemporary counterpart "Coalhouse Walker" in Doctorov's "Ragtime." Both rather ruin their lives (and that of others) in the pursuit of getting their rights than cutting their losses and forgetting they have been wronged.

Seen as a framing effect, even the seemingly irrational sides of loss management can be incorporated into a rational choice theory, notably the idea that the cost incurred in loss management may be higher than the value of the loss. The reason for this is that once loss avoidance is the situational frame, costs will have only an indirect impact via the salience of "loss avoidance" until they are high enough to create a frame switch.

On the *collective level*, the possibility of loss avoidance as an action frame must influence culture. For example, a dispossessed people will in all likelihood incorporate the regaining of its rights into its culture even if that means continued isolation and other great sacrifices (cf. Wallace, 1956).

Weber's analysis of the historical importance of various forms of the theodicy of suffering for the fabrication of cosmic arrangements that make suffering meaningful and thus *compensated* (Weber, 1922) would be another example where loss is systematically related to cultural production. For the same reason that Weber assumed an important role for religion as provider of elaborate schemes for the meaning of life (not necessarily religion as a communal credo and activity), one would have to assume a decline of the cultural role of religion with a general decline in random shocks to valued assets. Weber himself observed that "the more privileged the position of the commercial class, the less it has evinced any inclination to develop an other-worldly religion" (1922: 91) while "the normal trend of thinking among all nonprivileged classes" is in terms of an *ethic of compensation* (1922: 96), that is, of loss management.

It is not argued that without the discrimination model these social phenomena would be neglected. Rather, it is argued that given such a model, the interplay of culture and rational choice can be systematically analyzed on the basis of one behavioral theory.

1.8 Summary and Conclusion

In this chapter the idealist and the materialist traditions are reconciled by showing that they can be integrated in one behavioral theory. The former tradition is linked to the important sociological insight that the definition of the situation matters; the latter tradition is linked to the important insight in economics that relative prices matter. Due to the different paradigms of choice underlying the two traditions (plasticity versus scarcity), it is of great consequence which of the two is taken as the basis. Integration, it is argued

here, can only be achieved if scarcity is taken as the basis upon which (cultural) learning effects can be introduced as instruments and constraints of rationality.

The value theory of Parsons and Shils was presented as the most ambitious attempt at a theory of action in the idealist tradition. This was contrasted with subjectively expected utility theory as a prime representative of the materialist tradition. Stinchcombe's attempt to combine the two revealed many important aspects of the institutional context of rational action, but it did not integrate the two traditions at the behavioral base.

Such an integration has been explicitly attempted by Kahneman and Tversky in their prospect theory. However, their theory leaves much room for idiosyncratic definitions of the situation, which makes it less useful for the social sciences. As an alternative, the discrimination model of stochastic choice was presented. This model assumes that individuals can pursue only one goal in an action situation. A frame is a situationally specified goal together with the criteria for judging approximation of the goal. This goal acts like a special pair of glasses with which the situation is seen. The salience of the frame dictates the degree of discrimination of alternatives. Salience, in turn, can vary, and it is determined by other goals that are strong enough to exert some influence but, at least at the moment, too weak to displace the frame.

If it is assumed that there are goods generally aspired by all human beings (like social approval, physical well-being, and the avoidance of loss), then individuals must be primarily seen as producers of these goods, and culture provides to a large degree the instruments for doing so. In other words, culture prominently provides frames (situational goals and standards) systematically related to the production of the general goals. In this way, rational choice and culture are intimately intertwined at the behavioral level.

The model can also be used to shed some light on the changes in the production of cultural products. In this chapter, this is illustrated with the decline of social norms and of the importance of religion through changes in the material base of human interaction.

In sum, one may conclude that it is possible to integrate the idealist and the materialist traditions at the behavioral base. Whether this particular form of integration will withstand scrutiny and whether it inspires a novel and fruitful way of analyzing social phenomena remains to be seen.

Notes

- ¹ See for example Eisenstadt (1986) and the literature discussed in his overview for the tenacity with which the heuristics of the idealist position will steer away from any serious economic analysis despite the expressed conviction that economic "factors" matter a great deal. See also Luke (1985) as an extreme example of this kind. On the other side, the recent work of the economic historian North (1981) is instructive. North insists that economists have neglected the role of ideology. He states that "secular economic change has occurred not only because of the *changing relative prices* stressed in neoclassical models but also because of evolving *ideological perspectives* that have led individuals and groups to have contrasting views of the fairness of their situation and to act

- upon those views" (North, 1981: 58, emphases added). Yet, despite this rhetoric, North offers no serious analysis of the development, maintenance, and impact of ideology.
- ² In contrast to the pure neoclassical price theory, SEU theory allows at least for the explicit incorporation of uncertainty and thereby for the consideration of social and psychological influences on dealing with uncertainty. This is one step toward integration, and for this reason SEU rather than price theory is chosen here for discussion.
 - ³ What I have called the "Parsons-Shils" solution is to a large degree already presaged by Parsons' work prior to 1951. However, nowhere before and nowhere after this collaboration with Shils did Parsons elaborate this theory of action so explicitly. Therefore it seems justified to talk about the Parsons-Shils solution. There is no space in this chapter to do justice to the elaborate detail of their work, but then it is also not necessary to do so for the purpose at hand.
 - ⁴ This view is confirmed by neo-Parsonians, especially for Parsons' own development of the theory of action up to 1978 (see Alexander, 1978; Münch, 1981, 1982). Later in this chapter, I will take the view that Parsons developed consistently in an idealist direction after his collaboration with Shils, and I will blame this development on fact that relative prices never play any systematic role in Parsons' theory of action.
 - ⁵ The authors use the Freudian term 'cathexis' to denote somebody's attachment to "gratifying" objects and rejection of "noxious" objects.
 - ⁶ If confronted with one or more other individuals (social objects), the ego must decide during this phase (a) whether to focus on the categorial ("ascribed") or on the performance ("achieved") aspects of alter; (b) whether to focus on a broad ("diffuse") scope of possibly significant aspects or only on a narrow ("specific") scope. These and the initial choice for or against evaluation are three of the five "pattern variables" that structure any action situation (see note 8 for the other two).
 - ⁷ In their own view, this choice is analogous to Freud's distinction between id and ego (Parsons and Shils, 1951: 85).
 - ⁸ This process is governed by choices with regard to two alternative sets of rules: whether to apply moral ("collectivity oriented") or nonmoral ("ego oriented") standards; and whether to apply objective ("universalistic") or subjective ("particularistic") standards of evaluation.
 - ⁹ Münch (1982) makes a great deal of Parsons' concept of "interpenetration." The interweaving of the choice of rules and the choice of a course of action can be taken as a way in which action systematically allows the "interpenetration of subsystems." However, as we will see, the choice of a course of action is not analyzed by Parsons and Shils as being anything else than the result of the application of rules. Here, again, the seeming integration of two important aspects vanishes upon closer inspection.
 - ¹⁰ This can be nicely illustrated with his changing view on Durkheim's work. While he chastised Durkheim in 1937 for dropping action as a central theme in favor of an idealist position, he pronounced toward the end of his life that Durkheim had made progress precisely because he adopted this idealist position [see Parsons (1937: 445 f.) versus Parsons (1978: 213 ff.) see also note 6].
 - ¹¹ For a detailed discussion of the intricacies of conception of choice, see Buchanan (1969). However, he does not make the distinction between plasticity and scarcity theories of choice.
 - ¹² Why this strong simplification may not govern model building in economics to the same degree in the future is discussed in Lindenberg (1985).
 - ¹³ Simon's theory of bounded rationality probably was the first major constructive revision of rational choice theory in economics and of expected utility theory, and his theory of "satisficing" may be the best known alternative theory. But Simon himself (1985: 295) observed that we have come a long way in the last thirty years, giving rise to numerous alternative formulations. Kahneman and Tversky's "prospect theory" is one such alternative and, in the opinion of experts like Einhorn and Hogarth, "the first comprehensive attempt at an alternative formulation" (Einhorn and Hogarth, 1982: 34, emphasis added).

- ¹⁴ The term "frame" refers to many different things such as construction and structure ("the frame of a house"), a mental or emotional disposition or state ("frame of mind"), borders and outlines of an object ("a picture frame"). In the psychological sense "frame" is used to refer to a way in which the experience of a situation is organized, to the "definition of the situation." In this usage, all three meanings of frame are combined. Related concepts are "conceptual scheme," "mind set," "frame of reference," "cognitive tuning," and "heuristics." Bateson (1955) may have been the first to use "frame" in a technical way for "the definition of the situation." Goffman (1974) has elaborated this concept and its use at great length.
- ¹⁵ For a more complete list of assumptions and a more thorough critical evaluation of prospect theory see Lindenberg (1986a).
- ¹⁶ At times, so Kahneman and Tversky assume, the minimal account may give way to some more inclusive account in which, say, the previous losses still play a role. The by now famous example of this is the following: You are asked to imagine that you decided to go to a play where admission is \$ 10 per ticket. As you enter the theater, you discover that you have lost a \$ 10 bill. Question: would you still buy the ticket? Of the subjects, 88 % said "yes." Contrast this to the following scenario. Same as before, but this time you have bought the ticket ahead of time and as you enter the theater, you discover that you have lost the ticket. Would you pay \$ 10 for another ticket? Now 54 % of the subjects answered "no." In the first case, the loss of \$ 10 is not specifically linked to the ticket purchase, while in the second case, the previous loss of the ticket still dictated the terms of the account in the decision to buy a new ticket. The value of the lost ticket was added to the price of the new ticket, and \$ 20 for the show was considered excessive for many subjects.
- ¹⁷ At the extremes, the function is not well-behaved. Outcomes with very small weights can either be overrated or discarded as impossible. Close to the other end, the function can also make jumps: either increasing the weight to unity (certainty) or staying well below the true probability. In any case, going from "certainty" to "merely probable" can have large category effects.
- ¹⁸ I do not mean to imply that as it is, it cannot be used in the social sciences. See for instance Thaler (1980) for imaginative applications of prospect theory to the theory of consumer choice. At the other end of the spectrum is a purely constraint-driven behavioral theory [see Frey and Foppa (1986) for an interesting suggestion in this direction].
- ¹⁹ The other requirements for a behavioral theory in the social sciences are: (a) it must allow bridge-assumptions that link psychological (including physiological) theories to its parameters; (b) it must allow us to express our degree of ignorance explicitly (method of decreasing abstraction in model building); (c) it must be well corroborated as a theory of action (inclusive of human resourcefulness).
- ²⁰ For suggestions concerning some of the more psychological aspects of the comparison, such as the shape of the assumed utility function for gains and losses, see Lindenberg (1986a).
- ²¹ The frame is like a *category* of things. For this reason, conceptual behavior will have an influence on choice.
- ²² The difference of situational salience and marginal utility can be conceived as follows: Normally, marginal utility indicates the utility of the next unit of a good as a function of quantity of the good. Yet, there are considerations that increase or decrease the value of *any* unit of the good (and thus also the next unit) independent of quantity. For example, when doing business in a village that had recently been struck by a disaster, the value of money (relative to other things) may be less to me for every quantity of money. In order to distinguish between the two, I will refer to the latter as *salience*. Formally, if $U(g) = \beta g^\alpha$, then $\delta U(g)/\delta g = \alpha \beta (g^{\alpha-1})$, the salience parameter is β , while the "usual" related marginal utility parameter is α (of course, β can be split again into a salience and a simple scale parameter). As people own more of a good, their β for that good might decline while α may remain the same. This difference cannot be made in price theory and SEU theory because in both β is arbitrary.
- ²³ These three goals are meant to be summaries of clusters. For example, social approval is

- likely to be composed of status (relative ranking), behavioral confirmation, and affect (cf. Lindenberg, 1984b, 1986b), and physical well-being is likely to contain physical pleasure and aesthetic pleasure (cf. Wippler, 1987).
- ²⁴ Production functions specify the kind and amount of input needed for the production of a unit of a specific output. In economics, a typical production function specifies the amount of labor and capital needed for the production of a particular product. The reason I talk about "social" production functions is to indicate that their outputs (social approval, physical well-being, and absence of loss) are social products.
- ²⁵ Akerlof (1983) argues in a similar vein that parents rationally teach their children to be honest even though the social rewards are only given for appearing to be honest. To make children appear honest, it is easiest to make them honest. There is of course a problem with the rational choice assumption here because by "being" honest you also refrain from being dishonest where there is no possibility of a penalty. Akerlof has no solution and points to sociological and psychological examples where acquired "traits" are difficult to lose even when they have become "dysfunctional."
- ²⁶ In an article on the comparison of professionals with businessmen, Parsons (1939) comes quite close to an application of the by-product paradox, stating explicitly that the essential goals for the two are the same but the prescribed definition of the situation (i. e., the framing norms) is different.
- ²⁷ This relationship between frame and salience can also shed some light on a problem with prospect theory: When are "accounts" exclusive and when are they inclusive (see section 1.5.2)? Because of framing, the situation is always defined in terms of *one* goal, making seemingly for exclusive accounts. But the salience of that goal depends on the weights of other factors which can even create a frame switch, thus making seemingly for an inclusive account when their influence is dramatic enough.
- ²⁸ See Thaler (1980).

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